

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 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 January 31, 2020

or

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

For the transition period from to

Commission File Number 001-35594

PALO ALTO NETWORKS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

20-2530195

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

3000 Tannery Way

Santa Clara, California 95054

(Address of principal executive office, including zip code)

(408) 753-4000

(Registrant's telephone number, including area code)

NA

(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, \$0.0001 par value per share	PANW	New York Stock Exchange

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 Emerging growth company
Non-accelerated filer Smaller reporting 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

The number of shares outstanding of the registrant's common stock as of February 14, 2020 was 99,704,863.

TABLE OF CONTENTS

	Page
PART I - FINANCIAL INFORMATION	
Item 1.	Financial Statements
	3
	Condensed Consolidated Balance Sheets as of January 31, 2020 and July 31, 2019
	3
	Condensed Consolidated Statements of Operations for the Three and Six Months Ended January 31, 2020 and January 31, 2019
	4
	Condensed Consolidated Statements of Comprehensive Income (Loss) for the Three and Six Months Ended January 31, 2020 and January 31, 2019
	5
	Condensed Consolidated Statements of Stockholders' Equity for the Three and Six Months Ended January 31, 2020 and January 31, 2019
	6
	Condensed Consolidated Statements of Cash Flows for the Six Months Ended January 31, 2020 and January 31, 2019
	7
	Notes to Condensed Consolidated Financial Statements
	8
Item 2.	Management's Discussion and Analysis of Financial Condition and Results of Operations
	24
Item 3.	Quantitative and Qualitative Disclosures About Market Risk
	35
Item 4.	Controls and Procedures
	35
PART II - OTHER INFORMATION	
Item 1.	Legal Proceedings
	36
Item 1A.	Risk Factors
	36
Item 2.	Unregistered Sales of Equity Securities and Use of Proceeds
	57
Item 5.	Other Information
	58
Item 6.	Exhibits
	59
	Signatures
	60

PART I

ITEM 1. FINANCIAL STATEMENTS

PALO ALTO NETWORKS, INC.

CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited, in millions, except per share data)

	January 31, 2020	July 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	\$ 2,000.0	\$ 961.4
Short-term investments	1,133.9	1,841.7
Accounts receivable, net of allowance for doubtful accounts of \$1.2 and \$0.8 at January 31, 2020 and July 31, 2019, respectively	540.3	582.4
Prepaid expenses and other current assets	304.0	279.3
Total current assets	3,978.2	3,664.8
Property and equipment, net	311.4	296.0
Operating lease right-of-use assets	270.0	—
Long-term investments	317.9	575.4
Goodwill	1,511.7	1,352.3
Intangible assets, net	290.0	280.6
Other assets	504.9	423.1
Total assets	\$ 7,184.1	\$ 6,592.2
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 55.4	\$ 73.3
Accrued compensation	175.2	235.5
Accrued and other liabilities	251.2	162.4
Deferred revenue	1,757.7	1,582.1
Total current liabilities	2,239.5	2,053.3
Convertible senior notes, net	1,461.2	1,430.0
Long-term deferred revenue	1,440.8	1,306.6
Long-term operating lease liabilities	353.5	—
Other long-term liabilities	80.6	216.0
Commitments and contingencies (Note 11)		
Stockholders' equity:		
Preferred stock; \$0.0001 par value; 100.0 shares authorized; none issued and outstanding at January 31, 2020 and July 31, 2019	—	—
Common stock and additional paid-in capital; \$0.0001 par value; 1,000.0 shares authorized; 99.7 and 96.8 shares issued and outstanding at January 31, 2020 and July 31, 2019, respectively	2,644.5	2,490.9
Accumulated other comprehensive loss	(1.8)	(3.7)
Accumulated deficit	(1,034.2)	(900.9)
Total stockholders' equity	1,608.5	1,586.3
Total liabilities and stockholders' equity	\$ 7,184.1	\$ 6,592.2

See notes to condensed consolidated financial statements.

PALO ALTO NETWORKS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited, in millions, except per share data)

	Three Months Ended		Six Months Ended	
	January 31,		January 31,	
	2020	2019	2020	2019
Revenue:				
Product	\$ 246.5	\$ 271.6	\$ 477.7	\$ 512.1
Subscription and support	570.2	439.6	1,110.9	855.1
Total revenue	816.7	711.2	1,588.6	1,367.2
Cost of revenue:				
Product	68.7	82.5	133.8	155.7
Subscription and support	164.4	120.1	317.0	230.4
Total cost of revenue	233.1	202.6	450.8	386.1
Total gross profit	583.6	508.6	1,137.8	981.1
Operating expenses:				
Research and development	185.4	128.3	355.9	241.7
Sales and marketing	374.9	320.0	740.6	634.6
General and administrative	76.2	53.7	146.0	130.3
Total operating expenses	636.5	502.0	1,242.5	1,006.6
Operating income (loss)	(52.9)	6.6	(104.7)	(25.5)
Interest expense	(19.0)	(20.6)	(37.9)	(43.3)
Other income, net	10.8	16.0	27.0	29.0
Income (loss) before income taxes	(61.1)	2.0	(115.6)	(39.8)
Provision for income taxes	12.6	4.6	17.7	1.1
Net loss	\$ (73.7)	\$ (2.6)	\$ (133.3)	\$ (40.9)
Net loss per share, basic and diluted	\$ (0.75)	\$ (0.03)	\$ (1.37)	\$ (0.44)
Weighted-average shares used to compute net loss per share, basic and diluted	98.3	94.0	97.5	93.9

See notes to condensed consolidated financial statements.

PALO ALTO NETWORKS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited, in millions)

	Three Months Ended		Six Months Ended	
	January 31,		January 31,	
	2020	2019	2020	2019
Net loss	\$ (73.7)	\$ (2.6)	\$ (133.3)	\$ (40.9)
Other comprehensive income (loss), net of tax:				
Change in unrealized gains (losses) on investments	(1.1)	4.8	1.6	5.7
Change in unrealized gains (losses) on cash flow hedges	(0.1)	4.4	0.3	0.9
Other comprehensive income (loss)	(1.2)	9.2	1.9	6.6
Comprehensive income (loss)	\$ (74.9)	\$ 6.6	\$ (131.4)	\$ (34.3)

See notes to condensed consolidated financial statements.

PALO ALTO NETWORKS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited, in millions)

	Three Months Ended January 31, 2020				
	Common Stock and Additional Paid-In Capital		Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balance as of October 31, 2019	97.6	\$ 2,477.5	\$ (0.6)	\$ (960.5)	\$ 1,516.4
Net loss	—	—	—	(73.7)	(73.7)
Other comprehensive income	—	—	(1.2)	—	(1.2)
Issuance of common stock in connection with employee equity incentive plans	0.8	0.8	—	—	0.8
Taxes paid related to net share settlement of equity awards	—	(6.7)	—	—	(6.7)
Share-based compensation for equity-based awards	—	172.9	—	—	172.9
Settlement of warrants	1.3	—	—	—	—
Balance as of January 31, 2020	99.7	\$ 2,644.5	\$ (1.8)	\$ (1,034.2)	\$ 1,608.5

	Three Months Ended January 31, 2019				
	Common Stock and Additional Paid-In Capital		Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balance as of October 31, 2018	94.7	\$ 2,129.3	\$ (19.0)	\$ (857.3)	\$ 1,253.0
Cumulative-effect adjustment from adoption of new accounting pronouncement	—	—	—	—	—
Net loss	—	—	—	(2.6)	(2.6)
Other comprehensive income	—	—	9.2	—	9.2
Issuance of common stock in connection with employee equity incentive plans	0.9	3.1	—	—	3.1
Taxes paid related to net share settlement of equity awards	—	(7.1)	—	—	(7.1)
Share-based compensation for equity-based awards	—	144.1	—	—	144.1
Settlement of convertible notes	0.3	(2.0)	—	—	(2.0)
Common stock received from exercise of note hedges	(0.3)	—	—	—	—
Repurchase and retirement of common stock	(1.9)	(330.0)	—	—	(330.0)
Temporary equity reclassification	—	4.1	—	—	4.1
Balance as of January 31, 2019	93.7	\$ 1,941.5	\$ (9.8)	\$ (859.9)	\$ 1,071.8

	Six Months Ended January 31, 2020				
	Common Stock and Additional Paid-In Capital		Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			
Balance as of July 31, 2019	96.8	\$ 2,490.9	\$ (3.7)	\$ (900.9)	\$ 1,586.3
Net loss	—	—	—	(133.3)	(133.3)
Other comprehensive income	—	—	1.9	—	1.9
Issuance of common stock in connection with employee equity incentive plans	1.8	37.1	—	—	37.1
Taxes paid related to net share settlement of equity awards	—	(12.0)	—	—	(12.0)
Share-based compensation for equity-based awards	—	326.6	—	—	326.6
Repurchase and retirement of common stock	(0.9)	(198.1)	—	—	(198.1)
Settlement of warrants	2.0	—	—	—	—
Balance as of January 31, 2020	99.7	\$ 2,644.5	\$ (1.8)	\$ (1,034.2)	\$ 1,608.5

	Six Months Ended January 31, 2019				
	Common Stock and Additional Paid-In Capital		Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount			

Balance as of July 31, 2018	93.6	\$ 1,967.4	\$ (16.4)	\$ (790.7)	\$ 1,160.3
Cumulative-effect adjustment from adoption of new accounting pronouncement	—	—	—	(28.3)	(28.3)
Net loss	—	—	—	(40.9)	(40.9)
Other comprehensive income	—	—	6.6	—	6.6
Issuance of common stock in connection with employee equity incentive plans	2.0	33.9	—	—	33.9
Taxes paid related to net share settlement of equity awards	—	(21.0)	—	—	(21.0)
Share-based compensation for equity-based awards	—	284.3	—	—	284.3
Settlement of convertible notes	1.7	(12.2)	—	—	(12.2)
Common stock received from exercise of note hedges	(1.7)	—	—	—	—
Repurchase and retirement of common stock	(1.9)	(330.0)	—	—	(330.0)
Temporary equity reclassification	—	19.1	—	—	19.1
Balance as of January 31, 2019	<u>93.7</u>	<u>\$ 1,941.5</u>	<u>\$ (9.8)</u>	<u>\$ (859.9)</u>	<u>\$ 1,071.8</u>

See notes to condensed consolidated financial statements.

PALO ALTO NETWORKS, INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in millions)

	Six Months Ended	
	January 31,	
	2020	2019
Cash flows from operating activities		
Net loss	\$ (133.3)	\$ (40.9)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Share-based compensation for equity-based awards	318.4	279.3
Depreciation and amortization	92.4	71.3
Gain related to facility exit	(3.1)	—
Amortization of deferred contract costs	110.9	90.4
Amortization of debt discount and debt issuance costs	31.2	36.5
Amortization of operating lease right-of-use assets	21.1	—
Amortization of investment premiums, net of accretion of purchase discounts	(4.6)	(7.7)
Loss on conversions of convertible senior notes	—	2.6
Repayments of convertible senior notes attributable to debt discount	—	(67.1)
Changes in operating assets and liabilities, net of effects of acquisitions:		
Accounts receivable, net	43.1	53.9
Prepaid expenses and other assets	(141.5)	(90.6)
Accounts payable	(17.3)	(11.2)
Accrued compensation	(61.1)	(21.0)
Accrued and other liabilities	(31.8)	(11.6)
Deferred revenue	307.7	243.8
Net cash provided by operating activities	532.1	527.7
Cash flows from investing activities		
Purchases of investments	(283.3)	(2,031.9)
Proceeds from sales of investments	1.1	3.5
Proceeds from maturities of investments	1,255.1	1,004.2
Business acquisitions, net of cash acquired	(195.7)	(154.9)
Purchases of property, equipment, and other assets	(96.3)	(57.8)
Net cash provided by (used in) investing activities	680.9	(1,236.9)
Cash flows from financing activities		
Repayments of convertible senior notes attributable to principal and equity component	—	(348.5)
Payments for debt issuance costs	—	(3.7)
Repurchases of common stock	(198.1)	(330.0)
Proceeds from sales of shares through employee equity incentive plans	36.9	33.6
Payments for taxes related to net settlement of equity awards	(12.0)	(21.0)
Net cash used in financing activities	(173.2)	(669.6)
Net increase (decrease) in cash, cash equivalents, and restricted cash	1,039.8	(1,378.8)
Cash, cash equivalents, and restricted cash - beginning of period	965.0	2,509.2
Cash, cash equivalents, and restricted cash - end of period	\$ 2,004.8	\$ 1,130.4
Reconciliation of cash, cash equivalents, and restricted cash to the condensed consolidated balance sheets		
Cash and cash equivalents	\$ 2,000.0	\$ 1,127.8
Restricted cash included in prepaid expenses and other current assets	2.5	1.3
Restricted cash included in other assets	2.3	1.3
Total cash, cash equivalents, and restricted cash	\$ 2,004.8	\$ 1,130.4

See notes to condensed consolidated financial statements.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

1. Description of Business and Summary of Significant Accounting Policies

Description of Business

Palo Alto Networks, Inc. (the “Company,” “we,” “us,” or “our”), located in Santa Clara, California, was incorporated in March 2005 under the laws of the State of Delaware and commenced operations in April 2005. We offer platforms that empower enterprises, service providers, and government entities to secure their organizations by safely enabling applications and data running in their networks, on their endpoints, and in the cloud, and by preventing breaches that stem from targeted cyberattacks.

Basis of Presentation and Principles of Consolidation

The accompanying condensed consolidated financial statements have been prepared in conformity with U.S. generally accepted accounting principles (“GAAP”), consistent in all material respects with those applied in our Annual Report on Form 10-K for the fiscal year ended July 31, 2019, filed with the Securities and Exchange Commission (“SEC”) on September 9, 2019. Our condensed consolidated financial statements include our accounts and our wholly owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

Our condensed consolidated financial statements are unaudited, but include all adjustments of a normal recurring nature necessary for a fair presentation of our quarterly results. We have made estimates and judgments affecting the amounts reported in our condensed consolidated financial statements and the accompanying notes. The actual results that we experience may differ materially from our estimates.

Certain prior period amounts have been reclassified to conform to our current period presentation.

Our condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and related notes in our Annual Report on Form 10-K for the fiscal year ended July 31, 2019.

Summary of Significant Accounting Policies

There have been no material changes to our significant accounting policies as of and for the six months ended January 31, 2020, as compared to the significant accounting policies described in our Annual Report on Form 10-K for the fiscal year ended July 31, 2019, except for the change in our accounting policies for leases due to our adoption of new lease accounting guidance. Refer to “Recently Adopted Accounting Pronouncements” below and Note 10. Leases.

Recently Adopted Accounting Pronouncements

Leases

In February 2016, the Financial Accounting Standards Board (“FASB”) issued new authoritative guidance on lease accounting. Among its provisions, the standard requires lessees to recognize right-of-use assets and lease liabilities on the balance sheet for operating leases and also requires additional qualitative and quantitative disclosures about lease arrangements.

We adopted this standard effective August 1, 2019 on a modified retrospective basis, under which financial results reported in periods prior to fiscal 2020 were not adjusted. We elected the package of practical expedients, which allowed us to carry forward our historical assessments of whether contracts are or contain leases, lease classification, and initial direct costs. Additionally, we elected to account for lease and non-lease components as a single lease component and to not recognize right-of-use assets and lease liabilities for leases with a term of 12 months or less.

The most significant impact of adopting this guidance was the recognition of \$286.4 million of operating lease right-of-use assets and \$442.4 million of operating lease liabilities on our condensed consolidated balance sheet as of August 1, 2019, which included reclassifying previously recognized \$129.0 million in lease incentives, deferred or prepaid rent, as well as \$27.0 million in cease-use liabilities to operating lease right-of-use assets.

The adoption of this standard had no impact on our condensed consolidated statements of operations and condensed consolidated statements of cash flows. Refer to Note 10. Leases for further discussion.

Recently Issued Accounting Pronouncements

Financial Instruments - Credit Losses

In June 2016, the FASB issued new authoritative guidance on the accounting for credit losses on most financial assets and certain financial instruments. The standard replaces the existing incurred loss model with an expected credit loss model for financial

assets measured at amortized cost, including trade receivables, and requires that credit losses on available-for-sale debt securities be presented as an allowance rather than as a write-down. The standard is effective for us in our first quarter of fiscal 2021 and will be applied on a modified retrospective basis. We are currently evaluating whether this standard will have a material impact on our condensed consolidated financial statements.

2. Revenue

Disaggregation of Revenue

The following table presents revenue by geographic theater (in millions):

	Three Months Ended January 31,		Six Months Ended January 31,	
	2020	2019	2020	2019
Revenue:				
Americas				
United States	\$ 505.6	\$ 434.6	\$ 1,000.5	\$ 850.5
Other Americas	39.1	40.4	73.8	74.7
Total Americas	544.7	475.0	1,074.3	925.2
Europe, the Middle East, and Africa (“EMEA”)	166.2	148.3	313.8	276.0
Asia Pacific and Japan (“APAC”)	105.8	87.9	200.5	166.0
Total revenue	\$ 816.7	\$ 711.2	\$ 1,588.6	\$ 1,367.2

The following table presents revenue for groups of similar products and services (in millions):

	Three Months Ended January 31,		Six Months Ended January 31,	
	2020	2019	2020	2019
Revenue:				
Product	\$ 246.5	\$ 271.6	\$ 477.7	\$ 512.1
Subscription and support				
Subscription	342.6	249.7	661.2	481.0
Support	227.6	189.9	449.7	374.1
Total subscription and support	570.2	439.6	1,110.9	855.1
Total revenue	\$ 816.7	\$ 711.2	\$ 1,588.6	\$ 1,367.2

Deferred Revenue

During the six months ended January 31, 2020, we recognized approximately \$915.0 million of revenue pertaining to amounts that were deferred as of July 31, 2019.

Remaining Performance Obligations

Revenue expected to be recognized from remaining performance obligations was \$3.3 billion as of January 31, 2020, of which we expect to recognize approximately \$1.8 billion over the next 12 months and the remainder thereafter.

3. Fair Value Measurements

We categorize assets and liabilities recorded or disclosed at fair value on our condensed consolidated balance sheets based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

- Level 1—Inputs are unadjusted quoted prices in active markets for identical assets or liabilities.
- Level 2—Inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the assets or liabilities, either directly or indirectly through market corroboration, for substantially the full term of the financial instruments.
- Level 3—Inputs are unobservable inputs based on our own assumptions used to measure assets and liabilities at fair value. The inputs require significant management judgment or estimation.

The following table presents the fair value of our financial assets and liabilities measured at fair value on a recurring basis using the above input categories as of January 31, 2020 and July 31, 2019 (in millions):

	January 31, 2020				July 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash equivalents:								
Money market funds	\$ 577.1	\$ —	\$ —	\$ 577.1	\$ 369.1	\$ —	\$ —	\$ 369.1
Certificates of deposit	—	—	—	—	—	12.0	—	12.0
Commercial paper	—	65.5	—	65.5	—	19.3	—	19.3
U.S. government and agency securities	—	479.5	—	479.5	—	54.4	—	54.4
Total cash equivalents	577.1	545.0	—	1,122.1	369.1	85.7	—	454.8
Short-term investments:								
Certificates of deposit	—	24.0	—	24.0	—	17.5	—	17.5
Commercial paper	—	—	—	—	—	8.9	—	8.9
Corporate debt securities	—	318.7	—	318.7	—	375.5	—	375.5
U.S. government and agency securities	—	791.2	—	791.2	—	1,439.8	—	1,439.8
Total short-term investments	—	1,133.9	—	1,133.9	—	1,841.7	—	1,841.7
Long-term investments:								
Corporate debt securities	—	140.6	—	140.6	—	214.3	—	214.3
U.S. government and agency securities	—	177.3	—	177.3	—	361.1	—	361.1
Total long-term investments	—	317.9	—	317.9	—	575.4	—	575.4
Prepaid expenses and other current assets:								
Foreign currency forward contracts	—	0.9	—	0.9	—	1.3	—	1.3
Total prepaid expenses and other current assets	—	0.9	—	0.9	—	1.3	—	1.3
Total assets measured at fair value	\$ 577.1	\$ 1,997.7	\$ —	\$ 2,574.8	\$ 369.1	\$ 2,504.1	\$ —	\$ 2,873.2
Accrued and other liabilities:								
Foreign currency forward contracts	\$ —	\$ 2.8	\$ —	\$ 2.8	\$ —	\$ 3.8	\$ —	\$ 3.8
Total accrued and other liabilities	—	2.8	—	2.8	—	3.8	—	3.8
Total liabilities measured at fair value	\$ —	\$ 2.8	\$ —	\$ 2.8	\$ —	\$ 3.8	\$ —	\$ 3.8

Refer to Note 9. Debt for the carrying amount and estimated fair value of our convertible senior notes as of January 31, 2020 and July 31, 2019.

4. Cash Equivalents and Investments

Available-for-sale Debt Securities

The following tables summarize the amortized cost, unrealized gains and losses, and fair value of our available-for-sale debt securities as of January 31, 2020 and July 31, 2019 (in millions):

	January 31, 2020			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Cash equivalents:				
Certificates of deposit	\$ 65.5	\$ —	\$ —	\$ 65.5
U.S. government and agency securities	479.5	—	—	479.5
Total available-for-sale cash equivalents	\$ 545.0	\$ —	\$ —	\$ 545.0
Investments:				
Certificates of deposit	\$ 24.0	\$ —	\$ —	\$ 24.0
Corporate debt securities	456.5	2.8	—	459.3
U.S. government and agency securities	966.1	2.5	(0.1)	968.5
Total available-for-sale investments	\$ 1,446.6	\$ 5.3	\$ (0.1)	\$ 1,451.8

	July 31, 2019			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
Cash equivalents:				
Certificates of deposit	\$ 12.0	\$ —	\$ —	\$ 12.0
Commercial paper	19.3	—	—	19.3
U.S. government and agency securities	54.4	—	—	54.4
Total available-for-sale cash equivalents	\$ 85.7	\$ —	\$ —	\$ 85.7
Investments:				
Certificates of deposit	\$ 17.5	\$ —	\$ —	\$ 17.5
Commercial paper	8.9	—	—	8.9
Corporate debt securities	587.8	2.3	(0.3)	589.8
U.S. government and agency securities	1,799.5	2.6	(1.2)	1,800.9
Total available-for-sale investments	\$ 2,413.7	\$ 4.9	\$ (1.5)	\$ 2,417.1

Unrealized losses related to these securities are due to interest rate fluctuations as opposed to credit quality. In addition, we do not intend to sell and it is not likely that we would be required to sell these securities before recovery of their amortized cost basis, which may be at maturity. As a result, there were no other-than-temporary impairments for these securities at January 31, 2020 and July 31, 2019.

The following table summarizes the amortized cost and fair value of our available-for-sale debt securities as of January 31, 2020, by contractual years-to-maturity (in millions):

	Amortized Cost	Fair Value
Due within one year	\$ 1,676.7	\$ 1,678.9
Due between one and three years	314.9	317.9
Total	\$ 1,991.6	\$ 1,996.8

Marketable Equity Securities

Marketable equity securities consist of money market funds and are included in cash and cash equivalents in our condensed consolidated balance sheets. As of January 31, 2020 and July 31, 2019, the carrying value of our marketable equity securities were \$577.1 million and \$369.1 million, respectively. There were no unrealized gains or losses recognized for these securities during the three and six months ended January 31, 2020 and 2019.

5. Derivative Instruments

As a global business, we are exposed to currency exchange rate risk. Substantially all of our revenue is transacted in U.S. dollars, however, a portion of our operating expenditures are incurred outside of the United States and are denominated in foreign currencies, making them subject to fluctuations in foreign currency exchange rates. We enter into foreign currency derivative contracts with maturities of 15 months or less, which we designate as cash flow hedges, to manage the foreign currency exchange rate risk associated with these expenditures.

These derivative contracts expose us to credit risk to the extent that the counterparties may be unable to meet the terms of the arrangement. We mitigate this credit risk by transacting with major financial institutions with high credit ratings and also enter into master netting arrangements, which permit net settlement of transactions with the same counterparty. We are not required to pledge, and are not entitled to receive, cash collateral related to these derivative instruments. We do not enter into derivative contracts for trading or speculative purposes.

Our derivative financial instruments are recorded at fair value, on a gross basis, as either assets or liabilities in our condensed consolidated balance sheets. Gains or losses related to our cash flow hedges are recorded as a component of accumulated other comprehensive income (loss) ("AOCI") in our condensed consolidated balance sheets and are reclassified into the financial statement line item associated with the underlying hedged transaction in our condensed consolidated statements of operations when the underlying hedged transaction is recognized in earnings. If it becomes probable that the hedged transaction will not occur, the cumulative unrealized gain or loss is reclassified immediately from AOCI into the financial statement line item associated with the underlying hedged transaction in our condensed consolidated statements of operations. Gains or losses related to non-designated derivative instruments are recognized in other income (expense), net in our condensed consolidated statements of operations for each period until the instrument matures, is terminated, is re-designated as a qualified cash flow hedge, or is sold. Derivatives designated as cash flow hedges are classified in our condensed consolidated statements of cash flows in the same manner as the underlying hedged transaction, primarily within cash flows from operating activities.

As of January 31, 2020 and July 31, 2019, the total notional amount of our outstanding foreign currency forward contracts was \$186.1 million and \$307.2 million, respectively. Refer to Note 3. Fair Value Measurements for the fair value of our derivative instruments as reported on our condensed consolidated balance sheets as of January 31, 2020.

During the three and six months ended January 31, 2020 and 2019, both unrealized gains and losses recognized in AOCI related to our cash flow hedges and amounts reclassified into earnings were not material. Unrealized losses in AOCI related to our cash flow hedges as of January 31, 2020 and 2019 were not material.

6. Acquisitions

Aporeto, Inc.

On December 23, 2019, we completed our acquisition of 100% of the voting interest of Aporeto, Inc., ("Aporeto"), a privately-held machine identity-based microsegmentation company. We believe the acquisition will strengthen our cloud-native security platform capabilities delivered by Prisma Cloud. The total purchase consideration for the acquisition of Aporeto was \$144.1 million, which consisted of the following (in millions):

	Amount
Cash	\$ 139.8
Fair value of replacement awards	4.3
Total	\$ 144.1

As part of the acquisition, we issued \$16.4 million of replacement awards, of which the portion attributable to services performed prior to the acquisition date was allocated to purchase consideration. The remaining fair value was allocated to future services and will be expensed over the remaining service periods as share-based compensation.

We have accounted for this transaction as a business combination and allocated the purchase consideration to assets acquired and liabilities assumed based on preliminary estimated fair values, as presented in the following table (in millions):

	Amount
Goodwill	\$ 111.3
Identified intangible assets	23.8
Cash	10.5
Net liabilities assumed	(1.5)
Total	\$ 144.1

Goodwill generated from this business combination is primarily attributable to the assembled workforce and expected post-acquisition synergies from integrating Aporeto's technology into our platforms. The goodwill is not deductible for income tax purposes.

The following table presents details of the identified intangible assets acquired (in millions, except years):

	Fair Value	Estimated Useful Life
Developed technology	\$ 20.5	7 years
Customer relationships	3.3	4 years
Total	\$ 23.8	

Zingbox, Inc.

On September 20, 2019, we completed our acquisition of 100% of the voting equity interest of Zingbox, Inc. ("Zingbox"), a privately-held Internet of Things ("IoT") security company. We believe the acquisition will accelerate our delivery of IoT security through our Next-Generation Firewall and Cortex platforms. The total purchase consideration for the acquisition of Zingbox was \$66.4 million in cash.

As part of the acquisition, we issued replacement equity awards with a total fair value of \$5.7 million, which will be expensed over the remaining service periods as share-based compensation.

We have accounted for this transaction as a business combination and allocated the purchase consideration to assets acquired and liabilities assumed based on preliminary estimated fair values, as presented in the following table (in millions):

	Amount
Goodwill	\$ 48.1
Identified intangible assets	20.4
Net liabilities assumed	(2.1)
Total	\$ 66.4

Goodwill generated from this business combination is primarily attributable to the assembled workforce and expected post-acquisition synergies from integrating Zingbox's technology into our platforms. The goodwill is not deductible for income tax purposes.

The following table presents details of the identified intangible assets acquired (in millions, except years):

	Fair Value	Estimated Useful Life
Developed technology	\$ 18.6	5 years
Customer relationships	1.8	8 years
Total	\$ 20.4	

Additional Acquisition-Related Information

The operating results of the acquired companies are included in our condensed consolidated statements of operations from the dates of acquisition. Pro forma results of operations have not been presented because the effects of the acquisitions were not material to our condensed consolidated statements of operations.

Additional information related to the acquired companies, such as that related to income tax and other contingencies, existing as of the respective acquisition dates but unknown to us may become known during the remainder of the measurement period, not to exceed 12 months from the acquisition date, which may result in changes to the amounts and allocations recorded.

7. Goodwill and Intangible Assets

Goodwill

The following table presents details of our goodwill during the six months ended January 31, 2020 (in millions):

	Amount
Balance as of July 31, 2019	\$ 1,352.3
Goodwill acquired	159.4
Balance as of January 31, 2020	<u>\$ 1,511.7</u>

Purchased Intangible Assets

The following table presents details of our purchased intangible assets as of January 31, 2020 and July 31, 2019 (in millions):

	January 31, 2020			July 31, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Intangible assets subject to amortization:						
Developed technology	\$ 358.7	\$ (110.0)	\$ 248.7	\$ 318.8	\$ (78.7)	\$ 240.1
Customer relationships	44.9	(7.9)	37.0	39.8	(4.7)	35.1
Acquired intellectual property	8.9	(5.4)	3.5	8.9	(5.1)	3.8
Trade name and trademarks	9.4	(9.4)	—	9.4	(9.4)	—
Other	2.2	(2.2)	—	2.2	(2.2)	—
Total intangible assets subject to amortization	<u>424.1</u>	<u>(134.9)</u>	<u>289.2</u>	<u>379.1</u>	<u>(100.1)</u>	<u>279.0</u>
Intangible assets not subject to amortization:						
In-process research and development	0.8	—	0.8	1.6	—	1.6
Total purchased intangible assets	<u>\$ 424.9</u>	<u>\$ (134.9)</u>	<u>\$ 290.0</u>	<u>\$ 380.7</u>	<u>\$ (100.1)</u>	<u>\$ 280.6</u>

We recognized amortization expense of \$17.9 million and \$34.8 million for the three and six months ended January 31, 2020, respectively, and \$14.4 million and \$23.8 million for the three and six months ended January 31, 2019, respectively.

The following table summarizes estimated future amortization expense of our intangible assets as of January 31, 2020 (in millions):

	Amount
Fiscal years ending July 31:	
Remaining 2020	\$ 37.0
2021	72.0
2022	67.5
2023	41.4
2024	33.3
2025 and thereafter	38.0
Total future amortization expense	<u>\$ 289.2</u>

8. Deferred Contract Costs

The following table presents details of our short-term and long-term deferred contract costs as of January 31, 2020 and July 31, 2019 (in millions):

	January 31, 2020	July 31, 2019
Short-term deferred contract costs	\$ 164.6	\$ 151.1
Long-term deferred contract costs	327.2	324.2
Total deferred contract costs	<u>\$ 491.8</u>	<u>\$ 475.3</u>

We recognized amortization expense for our deferred contract costs of \$55.3 million and \$110.9 million during the three and six months ended January 31, 2020, respectively, and \$46.8 million and \$90.4 million during the three and six months ended January 31, 2019, respectively. We did not recognize any impairment losses on our deferred contract costs during the three and six months ended January 31, 2020 or 2019.

9. Debt

Convertible Senior Notes

In June 2014, we issued \$575.0 million aggregate principal amount of 0.0% Convertible Senior Notes due 2019 (the “2019 Notes”), and in July 2018, we issued \$1.7 billion aggregate principal amount of 0.75% Convertible Senior Notes due 2023 (the “2023 Notes” and, together with the 2019 Notes, the “Notes”). The 2023 Notes bear interest at a fixed rate of 0.75% per year, payable semi-annually in arrears on January 1 and July 1 of each year, beginning on January 1, 2019. The 2023 Notes are governed by an indenture between us, as the issuer, and U.S. Bank National Association, as Trustee (the “Indenture”). The 2023 Notes are unsecured, unsubordinated obligations and the Indenture governing the 2023 Notes does not contain any financial covenants or restrictions on the payments of dividends, the incurrence of indebtedness, or the issuance or repurchase of securities by us or any of our subsidiaries. The 2019 Notes were converted prior to or settled on the maturity date of July 1, 2019, in accordance with their terms. The 2023 Notes mature on July 1, 2023. We cannot redeem the 2023 Notes prior to maturity.

The 2023 Notes are convertible for up to 6.4 million shares of our common stock at an initial conversion rate of approximately 3.7545 shares of common stock per \$1,000 principal amount, which is equal to an initial conversion price of approximately \$266.35 per share of common stock, subject to adjustments. Holders of the 2023 Notes may surrender their 2023 Notes for conversion at their option at any time prior to the close of business on the business day immediately preceding April 1, 2023, only under the following circumstances:

- during any fiscal quarter commencing after the fiscal quarter ending on October 31, 2018 (and only during such fiscal quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on the last trading day of the immediately preceding fiscal quarter is greater than or equal to 130% of the applicable conversion price for the 2023 Notes on each applicable trading day (the “sale price condition”);
- during the five business day period after any five consecutive trading day period (the “measurement period”), in which the trading price per \$1,000 principal amount of the 2023 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the applicable conversion rate for the 2023 Notes on each such trading day; or
- upon the occurrence of specified corporate events.

On or after April 1, 2023, holders may surrender all or any portion of their 2023 Notes for conversion at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date regardless of the foregoing conditions, and such conversions will be settled upon the maturity date. Upon conversion, holders of the 2023 Notes will receive cash equal to the aggregate principal amount of the 2023 Notes to be converted, and, at our election, cash and/or shares of our common stock for any amounts in excess of the aggregate principal amount of the 2023 Notes being converted.

The conversion price will be subject to adjustment in some events. Holders who convert their 2023 Notes in connection with certain corporate events that constitute a “make-whole fundamental change” under the Indenture are, under certain circumstances, entitled to an increase in the conversion rate. Additionally, upon the occurrence of a corporate event that constitutes a “fundamental change” under the Indenture, holders of the 2023 Notes may require us to repurchase for cash all or a portion of the 2023 Notes at a repurchase price equal to 100% of the principal amount of the 2023 Notes plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

The sale price condition was not met for the 2023 Notes during the fiscal quarters ended January 31, 2020 or July 31, 2019. Since the 2023 Notes were not convertible, the net carrying amount of the 2023 Notes was classified as a long-term liability and the

equity component was included in additional paid-in capital in our condensed consolidated balance sheets as of January 31, 2020 and July 31, 2019. As of January 31, 2020, all of the 2023 Notes remained outstanding.

The following table sets forth the components of the 2023 Notes as of January 31, 2020 and July 31, 2019 (in millions):

	January 31, 2020	July 31, 2019
Liability component:		
Principal	\$ 1,693.0	\$ 1,693.0
Less: debt discount and debt issuance costs, net of amortization	231.8	263.0
Net carrying amount	<u>\$ 1,461.2</u>	<u>\$ 1,430.0</u>
Equity component	<u>\$ 315.0</u>	<u>\$ 315.0</u>

The total estimated fair value of the 2023 Notes was \$1.9 billion at both January 31, 2020 and July 31, 2019. The fair value was determined based on the closing trading price per \$100 of the 2023 Notes as of the last day of trading for the period. We consider the fair value of the 2023 Notes at January 31, 2020 and July 31, 2019 to be a Level 2 measurement. The fair value of the 2023 Notes is primarily affected by the trading price of our common stock and market interest rates. Based on the closing price of our common stock on January 31, 2020, the if-converted value of the 2023 Notes was less than its principal amount.

The following table sets forth interest expense recognized related to the Notes (dollars in millions):

	Three Months Ended January 31,						Six Months Ended January 31,					
	2020			2019			2020			2019		
	2019 Notes	2023 Notes	Total	2019 Notes	2023 Notes	Total	2019 Notes	2023 Notes	Total	2019 Notes	2023 Notes	Total
Contractual interest expense	\$ —	\$ 3.1	\$ 3.1	\$ —	\$ 3.1	\$ 3.1	\$ —	\$ 6.3	\$ 6.3	\$ —	\$ 6.3	\$ 6.3
Amortization of debt discount	—	15.2	15.2	2.0	14.5	16.5	—	30.2	30.2	6.0	28.9	34.9
Amortization of debt issuance costs	—	0.5	0.5	0.2	0.4	0.6	—	1.0	1.0	0.7	0.9	1.6
Total interest expense recognized	<u>\$ —</u>	<u>\$ 18.8</u>	<u>\$ 18.8</u>	<u>\$ 2.2</u>	<u>\$ 18.0</u>	<u>\$ 20.2</u>	<u>\$ —</u>	<u>\$ 37.5</u>	<u>\$ 37.5</u>	<u>\$ 6.7</u>	<u>\$ 36.1</u>	<u>\$ 42.8</u>
Effective interest rate of the liability component	<u>—%</u>	<u>5.2%</u>		<u>4.8%</u>	<u>5.2%</u>		<u>—%</u>	<u>5.2%</u>		<u>4.8%</u>	<u>5.2%</u>	

Note Hedges

To minimize the impact of potential economic dilution upon conversion of the Notes, we entered into separate convertible note hedge transactions (the “2019 Note Hedges,” with respect to the 2019 Notes, and the “2023 Note Hedges,” with respect to the 2023 Notes, and collectively, the “Note Hedges”) with respect to our common stock concurrent with the issuance of each series of Notes.

Upon the settlement of the 2019 Notes, we exercised the corresponding portion of our 2019 Note Hedges during the year ended July 31, 2019 and received shares of our common stock that fully offset the shares issued in excess of the principal amount of the converted 2019 Notes. The 2019 Note Hedges expired upon maturity of the 2019 Notes.

The 2023 Note Hedges cover up to 6.4 million shares of our common stock at a strike price per share that corresponds to the initial applicable conversion price of the 2023 Notes, which are also subject to adjustment, and are exercisable upon conversion of the 2023 Notes. The 2023 Note Hedges will expire upon maturity of the 2023 Notes. The 2023 Note Hedges are separate transactions and are not part of the terms of 2023 Notes. Holders of the 2023 Notes will not have any rights with respect to the 2023 Note Hedges. Any shares of our common stock receivable by us under the 2023 Note Hedges are excluded from the calculation of diluted earnings per share as they are antidilutive. We paid an aggregate amount of \$332.0 million for the 2023 Note Hedges, which is included in additional paid-in capital in our consolidated balance sheets.

Warrants

Separately, but concurrently with the issuance of each series of Notes, we entered into transactions whereby we sold warrants (the “2019 Warrants,” with respect to the 2019 Notes, and the “2023 Warrants,” with respect to the 2023 Notes, and collectively, the

“Warrants”) to acquire shares of our common stock, subject to anti-dilution adjustments. The 2019 Warrants became exercisable beginning October 2019 and the 2023 Warrants are exercisable beginning October 2023.

The following table presents details of the Warrants (in millions, except per share data):

	Initial Number of Shares	Strike Price per Share	Aggregate Proceeds
2019 Warrants	5.2	\$ 137.85	\$ 78.3
2023 Warrants	6.4	\$ 417.80	\$ 145.4

The shares issuable under the Warrants will be included in the calculation of diluted earnings per share when the average market value per share of our common stock for the reporting period exceeds the applicable strike price for such series of Warrants. The Warrants are separate transactions and are not part of either series of Notes or Note Hedges and are not remeasured through earnings each reporting period. Holders of the Notes of either series will not have any rights with respect to the Warrants. The aggregate proceeds received from the sale of the Warrants are included in additional paid-in capital in our consolidated balance sheets.

During the six months ended January 31, 2020, we net settled all 2019 Warrants with approximately 2.0 million shares or \$462.0 million in fair value of our common stock, of which 1.3 million shares or \$308.4 million in fair value of our common stock were net settled during the three months ended January 31, 2020. The number of net shares issued was determined based on the number of 2019 Warrants exercised multiplied by the difference between the strike price of the 2019 Warrants and their daily volume weighted-average stock price.

Revolving Credit Facility

On September 4, 2018, we entered into a credit agreement (the “Credit Agreement”) with certain institutional lenders that provides for a \$400.0 million unsecured revolving credit facility (the “Credit Facility”), with an option to increase the amount of the Credit Facility by up to an additional \$350.0 million, subject to certain conditions. The Credit Facility matures on the earlier of (i) September 4, 2023 and (ii) the date that is 91 days prior to the stated maturity of our 2023 Notes if (a) any of the 2023 Notes are still outstanding and (b) our unrestricted cash and cash equivalents are less than the then outstanding principal amount of our 2023 Notes plus \$400.0 million.

The borrowings under the Credit Facility bear interest, at our option, at a base rate plus a spread of 0.00% to 0.75%, or an adjusted LIBO rate plus a spread of 1.00% to 1.75%, in each case with such spread being determined based on our leverage ratio. We are obligated to pay an ongoing commitment fee on undrawn amounts at a rate of 0.125% to 0.250%, depending on our leverage ratio. As of January 31, 2020, there were no amounts outstanding and we were in compliance with all covenants under the Credit Agreement.

10. Leases

We determine if an arrangement is a lease at inception. We evaluate classification of leases at commencement and, as necessary, at modification. Operating leases are included in operating lease right-of-use assets, accrued and other liabilities, and long-term operating lease liabilities on our condensed consolidated balance sheets beginning August 1, 2019. We did not have any material finance leases in any of the periods presented.

Operating lease right-of-use assets represent our right to use an underlying asset for the lease term. Operating lease liabilities represent our obligation to make payments arising from the lease. Operating lease right-of-use assets and liabilities are recognized at the present value of the future lease payments at the lease commencement date. The interest rate used to determine the present value of the future lease payments is our incremental borrowing rate, because the interest rates implicit in most of our leases are not readily determinable. Our incremental borrowing rate is estimated to approximate the interest rate on a collateralized basis with similar terms and payments, and in economic environments where the leased asset is located. Operating lease right-of-use assets also include adjustments related to lease incentives, prepaid or accrued rent and initial direct lease costs. Operating lease right-of-use assets are subject to evaluation for impairment or disposal on a basis consistent with other long-lived assets.

Our lease terms may include periods under options to extend or terminate the lease when it is reasonably certain that we will exercise that option. We generally use the base, non-cancelable lease term when determining the lease assets and liabilities. Operating lease cost is generally recognized on a straight-line basis over the lease term.

We account for lease and non-lease components as a single lease component and do not recognize right-of-use assets and lease liabilities for leases with a term of 12 months or less. Payments under our lease arrangements are primarily fixed, however, certain lease agreements contain variable payments, which are expensed as incurred and not included in the operating lease right-of-use assets and liabilities. Variable lease payments are primarily comprised of payments affected by the Consumer Price Index, common area maintenance, and utility charges.

We have entered into various non-cancelable operating leases primarily for our facilities with original lease periods expiring through the year ending July 31, 2028.

In December 2019, we entered into lease termination agreements for our previous corporate headquarters in Santa Clara, California, which we ceased use of in August 2017. Under the arrangements, we terminated these leases effective in December 2019, prior to their expiration date of July 2023. The early termination fee is \$25.0 million, payable in equal quarterly installments from April 2020 through July 2023. Upon termination, we recorded a decrease of \$13.6 million in operating lease liabilities based on the payment schedule of the early termination fee discounted by the incremental borrowing rate for the remaining payment term. We also decreased right-of-use asset by \$8.7 million upon surrendering possession of the properties. As a result, during the three months ended January 31, 2020, we recorded a gain of \$3.1 million net of other related fees of \$1.8 million in general and administrative expense in our condensed consolidated statements of operations.

During the three months ended January 31, 2020, our net cost for operating leases was \$16.6 million and primarily consisted of operating lease costs of \$14.5 million, in addition to variable lease costs, short-term lease costs, and sublease income. During the six months ended January 31, 2020, our net cost for operating leases was \$33.4 million and primarily consisted of operating lease costs of \$29.2 million, in addition to variable lease costs, short-term lease costs and sublease income.

The following tables present additional information for our operating leases (in millions, except for years and percentages):

	Six Months Ended	
	January 31, 2020	
Operating cash flows used in payments of operating lease liabilities	\$	34.7
Right-of-use assets obtained in exchange for new operating lease liabilities	\$	14.0
		January 31, 2020
Weighted-average remaining lease term		7.7 years
Weighted-average discount rate		3.9%

The following table presents maturities of operating lease liabilities as of January 31, 2020 (in millions):

	Amount	
Fiscal years ending July 31:		
Remaining 2020	\$	33.5
2021		71.8
2022		66.0
2023		60.1
2024		49.4
2025 and thereafter		193.0
Total operating lease payments		473.8
Less: imputed interest		65.5
Present value of operating lease liabilities	\$	408.3
Current portion of operating lease liabilities ⁽¹⁾	\$	54.8
Long-term operating lease liabilities	\$	353.5

(1) Current portion of operating lease liabilities is included in accrued and other liabilities on our condensed consolidated balance sheet.

Operating lease liabilities above do not include sublease income. As of January 31, 2020, we expect to receive sublease income of approximately \$6.4 million, which consists of \$2.6 million to be received for the remainder of fiscal 2020 and \$3.8 million to be received in fiscal 2021.

11. Commitments and Contingencies

Purchase Commitments

Manufacturing Purchase Commitments

Our electronics manufacturing service provider (“EMS provider”) procures components and assembles our products based on our forecasts. These forecasts are based on estimates of demand for our products primarily for the next 12 months, which are in turn based on historical trends and an analysis from our sales and product management organizations, adjusted for overall market conditions. In order to reduce manufacturing lead times and plan for adequate supply, we may issue non-cancelable orders for products and components to our manufacturing partners or component suppliers. As of January 31, 2020, our purchase commitments under such orders were \$106.0 million, excluding obligations under contracts that we can cancel without a significant penalty.

Other Purchase Commitments

We have entered into various non-cancelable agreements with third-party providers for our use of certain cloud and other services, under which we are committed to minimum or fixed purchases through the year ending July 31, 2026. The following table presents details of the aggregate future non-cancelable purchase commitments under these agreements as of January 31, 2020 (in millions):

	Amount
Fiscal years ending July 31:	
Remaining 2020	\$ 2.3
2021	14.5
2022	59.3
2023	58.5
2024	67.5
2025 and thereafter	97.5
Total other purchase commitments	\$ 299.6

Mutual Covenant Not to Sue and Release Agreement

In January 2020, we executed a Mutual Covenant Not to Sue and Release Agreement for \$50.0 million, to extend an existing covenant not to sue for seven years. As the primary benefit of the arrangement was attributable to future use, we recorded \$50.0 million in other assets and a corresponding balance in accrued and other liabilities on our condensed consolidated balance sheets as of January 31, 2020. The amount recorded in other assets will be amortized to cost of product revenue in our condensed consolidated statements of operations over the estimated period of benefit of seven years.

Litigation

We are subject to legal proceedings, claims, and litigation arising in the ordinary course of business, including intellectual property litigation. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. We accrue for contingencies when we believe that a loss is probable and that we can reasonably estimate the amount of any such loss.

To the extent there is a reasonable possibility that a loss exceeding amounts already recognized may be incurred and the amount of such additional loss would be material, we will either disclose the estimated additional loss or state that such an estimate cannot be made. As of January 31, 2020, we have not recorded any significant accruals for loss contingencies associated with such legal proceedings, determined that an unfavorable outcome is probable or reasonably possible, or determined that the amount or range of any possible loss is reasonably estimable.

12. Stockholders' Equity

Share Repurchase Program

In February 2019, our board of directors authorized a \$1.0 billion share repurchase program which is funded from available working capital. Repurchases may be made at management’s discretion from time to time on the open market, through privately negotiated transactions, transactions structured through investment banking institutions, block purchase techniques, 10b5-1 trading plans, or a combination of the foregoing. This repurchase authorization will expire on December 31, 2020 and may be suspended or discontinued at any time.

During the six months ended January 31, 2020, we repurchased and retired 0.9 million shares of our common stock under the authorization for an aggregate purchase price of \$198.1 million, including transaction costs. The total price of the shares repurchased and related transaction costs are reflected as a reduction to common stock and additional paid-in capital on our condensed consolidated balance sheets. As of January 31, 2020, \$801.9 million remained available for future share repurchases under our current repurchase authorization.

13. Equity Award Plans

Assumed Share-based Compensation Plans

Aporeto Inc. Stock Incentive Plan

In connection with our acquisition of Aporeto in December 2019, we assumed Aporeto’s 2015 Stock Option and Grant Plan, as amended and restated (the “Aporeto Plan”), under which the assumed Aporeto equity awards were granted. The assumed equity awards will be settled in shares of our common stock and will retain the terms and conditions under which they were originally granted; forfeited awards will not be returned to the Aporeto Plan. No additional equity awards will be granted under the Aporeto Plan. Refer to Note 6. Acquisitions for more information on the Aporeto acquisition and the related equity awards assumed.

Zingbox, Inc. Stock Incentive Plan

In connection with our acquisition of Zingbox on September 20, 2019, we assumed Zingbox’s Stock Incentive Plan, as amended and restated (the “Zingbox Plan”), under which the assumed Zingbox equity awards were granted. The assumed equity awards will be settled in shares of our common stock and will retain the terms and conditions under which they were originally granted; forfeited awards will not be returned to the Zingbox Plan. No additional equity awards will be granted under the Zingbox Plan. Refer to Note 6. Acquisitions for more information on the Zingbox acquisition and the related equity awards assumed.

Stock Option Activities

The following table summarizes the stock option and performance stock option (“PSO”) activity under our stock plans during the reporting period (in millions, except per share amounts):

	Stock Options Outstanding				PSOs Outstanding			
	Number of Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value	Number of Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Balance—July 31, 2019	0.3	\$ 14.53	2.2	\$ 81.4	3.7	\$ 193.99	6.2	\$ 120.1
Exercised	(0.1)	\$ 10.86			—	\$ —		
Forfeited	—	\$ —			(0.8)	\$ 193.51		
Balance—January 31, 2020	0.2	\$ 17.39	1.9	\$ 46.9	2.9	\$ 194.11	5.7	\$ 119.3
Exercisable—January 31, 2020	0.2	\$ 17.39	1.9	\$ 46.9	2.9	\$ 194.11	5.7	\$ 119.3

Restricted Stock Award (“RSA”), Performance-Based Stock Award (“PSA”), Restricted Stock Unit (“RSU”), and Performance-Based Stock Unit (“PSU”) Activities

The following table summarizes the RSA and PSA activity under our stock plans during the reporting period (in millions, except per share amounts):

	RSAs Outstanding		PSAs Outstanding	
	Number of Shares	Weighted-Average Grant-Date Fair Value Per Share	Number of Shares	Weighted-Average Grant-Date Fair Value Per Share
Balance—July 31, 2019	0.0	\$ 148.54	0.1	\$ 148.54
Vested	0.0	\$ 148.54	0.0	\$ 148.54
Balance—January 31, 2020	0.0	\$ 148.54	0.1	\$ 148.54

The following table summarizes the RSU and PSU activity under our stock plans during the reporting period (in millions, except per share amounts):

	RSUs Outstanding				PSUs Outstanding			
	Number of Shares	Weighted-Average Grant-Date Fair Value Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value	Number of Shares	Weighted-Average Grant-Date Fair Value Per Share	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Balance—July 31, 2019	6.9	\$ 188.16	1.5	\$ 1,554.0	0.3	\$ 197.86	1.8	\$ 67.0
Granted	2.0	\$ 217.39			—	\$ —		
Vested	(1.4)	\$ 175.68			0.0	\$ 169.41		
Forfeited	(0.5)	\$ 183.16			(0.1)	\$ 181.48		
Balance—January 31, 2020	7.0	\$ 199.40	1.5	\$ 1,641.2	0.2	\$ 201.03	1.5	\$ 53.0

Our PSAs and PSUs generally vest over a period of three to four years from the date of grant. The actual number of PSAs and PSUs earned and eligible to vest is determined based on level of achievement against pre-established billings or revenue growth targets for the fiscal year. We recognize share-based compensation expense for our PSAs and PSUs on a straight-line basis over the requisite service period for each separately vesting portion of the award when it is probable that the performance condition will be achieved.

Share-Based Compensation

The following table summarizes share-based compensation included in costs and expenses (in millions):

	Three Months Ended		Six Months Ended	
	January 31,		January 31,	
	2020	2019	2020	2019
Cost of product revenue	\$ 1.6	\$ 1.4	\$ 2.9	\$ 3.0
Cost of subscription and support revenue	20.0	18.2	38.9	35.7
Research and development	67.0	44.0	129.4	84.5
Sales and marketing	54.9	58.7	98.7	114.7
General and administrative	29.4	20.1	54.2	55.6
Total share-based compensation	\$ 172.9	\$ 142.4	\$ 324.1	\$ 293.5

During the three and six months ended January 31, 2020, we accelerated the vesting of certain equity awards in connection with our acquisitions, as a result, we recorded \$4.4 million and \$5.7 million, respectively, of share-based compensation within general and administrative expense.

As of January 31, 2020, total compensation cost related to unvested share-based awards not yet recognized was \$1.5 billion. This cost is expected to be amortized over a weighted-average period of approximately 2.7 years. Future grants will increase the amount of compensation expense to be recorded in these periods.

14. Income Taxes

Our provision for income taxes for the three and six months ended January 31, 2020 reflects an effective tax rate of negative 20.6% and negative 15.3%, respectively. Our effective tax rate for the six months ended January 31, 2020 was negative as we recorded a provision for income taxes on year to date losses. The provision for income taxes for the six months ended January 31, 2020 is primarily due to income taxes in profitable foreign jurisdictions, U.S. state taxes, and withholding taxes. Our effective tax rates differ from the U.S. statutory tax rate primarily due to deductibility of our share-based compensation, foreign income at other than U.S. tax rates, and changes in our valuation allowance.

In December 2019, we transferred certain intellectual property rights to a wholly owned United Kingdom subsidiary, primarily to align our legal structure to our evolving operations. This resulted in an increase in the tax basis of these intellectual property rights and a corresponding increase in foreign deferred tax assets. As of January 31, 2020, it is not more likely than not that these additional deferred tax assets will be realizable, and therefore, are offset by a full valuation allowance. This resulted in no net impact to our condensed consolidated financial statements.

Our provision for income taxes for the three and six months ended January 31, 2019 reflects an effective tax rate of 230.0% and negative 2.8%, respectively. Our effective tax rate for the six months ended January 31, 2019 was negative as we recorded a provision

for income taxes on year to date losses. The key components of our income tax provision, excluding one-time items, primarily consisted of foreign income taxes and withholding taxes. During the six months ended January 31, 2019, the effect of these key components was primarily offset by a one-time tax benefit of \$9.4 million from a partial release of our valuation allowance related to the acquisition of RedLock Inc. Our effective tax rate differed from the U.S. statutory tax rate primarily due to deductibility of our share-based compensation, foreign income at other than U.S. tax rates, and changes in our valuation allowance.

15. Net Loss Per Share

Basic net loss per share is computed by dividing net loss by basic weighted-average shares outstanding during the period. Diluted net loss per share is computed by dividing net loss by diluted weighted-average shares outstanding, including potentially dilutive securities.

The following table presents the computation of basic and diluted net loss per share of common stock (in millions, except per share data):

	Three Months Ended		Six Months Ended	
	January 31,		January 31,	
	2020	2019	2020	2019
Net loss	\$ (73.7)	\$ (2.6)	\$ (133.3)	\$ (40.9)
Weighted-average shares used to compute net loss per share, basic and diluted	98.3	94.0	97.5	93.9
Net loss per share, basic and diluted	\$ (0.75)	\$ (0.03)	\$ (1.37)	\$ (0.44)

The following securities were excluded from the computation of diluted net loss per share of common stock for the periods presented as their effect would have been antidilutive (in millions):

	Three and Six Months Ended	
	January 31,	
	2020	2019
Convertible senior notes	6.4	7.8
Warrants related to the issuance of convertible senior notes	6.4	11.6
RSUs and PSUs	7.2	7.1
Options to purchase common stock, including PSOs	3.1	4.4
RSAs and PSAs	0.1	0.1
ESPP shares	0.2	0.2
Total	23.4	31.2

16. Other Income, Net

The following table sets forth the components of other income, net (in millions):

	Three Months Ended		Six Months Ended	
	January 31,		January 31,	
	2020	2019	2020	2019
Interest income	\$ 13.9	\$ 18.0	\$ 29.7	\$ 33.4
Foreign currency exchange gains (losses), net	(2.4)	(1.2)	(2.0)	(1.2)
Other	(0.7)	(0.8)	(0.7)	(3.2)
Total other income, net	\$ 10.8	\$ 16.0	\$ 27.0	\$ 29.0

17. Subsequent Events

Accelerated Share Repurchase

On February 21, 2020, our board of directors approved the repurchase of \$1.0 billion of our common stock through an accelerated share repurchase ("ASR") transaction, which we expect to enter into during our fiscal quarter ending April 30, 2020, subject to market conditions. The ASR transaction is in addition to our \$1.0 billion share repurchase program that our board of directors authorized in February 2019.

Land Purchase Agreement

In February 2020, we entered into an agreement to purchase 5.8 acres of land adjacent to our headquarters in Santa Clara, California for \$51.0 million in cash. The arrangement is expected to close during our fiscal quarter ending April 30, 2020.

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 our condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q. The following discussion and analysis contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These statements include, among other things: expectations regarding drivers of and factors affecting growth in our business; the performance advantages of our products and subscription and support offerings and the potential benefits to our customers; statements regarding trends in billings, our mix of product and subscription and support revenue, cost of revenue, gross margin, cash flows, operating expenses, including future share-based compensation expense, income taxes, investment plans and liquidity; expectations regarding our revenues, including the seasonality and cyclicalities from quarter to quarter; expectations and intentions with respect to the products and technologies that we acquire and introduce on our current and future offerings; our strategy of acquiring complementary businesses and our ability to successfully integrate acquired businesses and technologies; expected impact of the adoption of certain recent accounting pronouncements and the anticipated timing of adopting such standards; expected recurring revenues resulting from expected growth in our installed base and increased adoption of our products and cloud-based subscription services; the sufficiency of our existing cash and investments to meet our cash needs for the foreseeable future; the timing and amount of sublease income, capital expenditures and share repurchases, including expected timing of an accelerated share repurchase transaction; and other statements regarding our future operations, financial condition and prospects, and business strategies. Forward-looking statements generally can be identified by words such as "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "plans," "predicts," "projects," "would," "will be," "will continue," "will likely result," and similar expressions. These forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties, which could cause our actual results to differ materially from those anticipated or implied by any forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in this Quarterly Report on Form 10-Q, and in particular, the risks discussed under the caption "Risk Factors" in Part II, Item 1A of this report and those discussed in other documents we file with the Securities and Exchange Commission ("SEC"). We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements.

Our Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is organized as follows:

- **Overview.** A discussion of our business and overall analysis of financial and other highlights in order to provide context for the remainder of MD&A.
- **Key Financial Metrics.** A summary of our generally accepted accounting principles ("GAAP") and non-GAAP key financial metrics, which management monitors to evaluate our performance.
- **Results of Operations.** A discussion of the nature and trends in our financial results and an analysis of our financial results comparing the three and six months ended January 31, 2020 to the three and six months ended January 31, 2019.
- **Liquidity and Capital Resources.** An analysis of changes in our balance sheets and cash flows, and a discussion of our financial condition and our ability to meet cash needs.
- **Critical Accounting Estimates.** A discussion of our accounting policies that require critical estimates, assumptions, and judgments.
- **Recent Accounting Pronouncements.** A discussion of expected impacts of impending accounting changes on financial information to be reported in the future.

Overview

We have pioneered the next generation of security through our innovative platforms that empower enterprises, service providers, and government entities to secure their organizations by safely enabling applications and data running in their networks, on their endpoints, and in the cloud, and by preventing breaches that stem from targeted cyberattacks. Our platforms use an innovative traffic classification engine that identifies network traffic by application, user, and content and provides consistent security across the network, endpoint, and cloud. Accordingly, our platforms enable our end-customers to pursue transformative digital initiatives, like public cloud and mobility, that grow their business, while maintaining the visibility and control needed to protect their valued data and critical control systems. We believe the architecture of our platforms offers superior performance compared to legacy approaches and reduces the total cost of ownership for organizations by simplifying their security operations and infrastructure and eliminating the need for multiple, stand-alone hardware and software security products, and consists of three primary areas of security capabilities.

Secure the Enterprise:

- Secure the network through our Next-Generation Firewalls, available as physical appliances, virtual appliances called VM-Series, or a cloud-delivered service called Prisma Access (formerly GlobalProtect cloud service), and Panorama

management delivered as an appliance or as a virtual machine for the public or private cloud. This also includes security services such as WildFire, Threat Prevention, URL Filtering, GlobalProtect, DNS Security and SD-WAN that are delivered as SaaS subscriptions to our Next-Generation Firewalls.

Secure the Cloud:

- Secure the cloud through our Prisma security offerings, such as Prisma Cloud (*formerly RedLock, Twistlock and PureSec*) with comprehensive security and compliance coverage for cloud native applications throughout the full development lifecycle and across multi- and hybrid- cloud environments, Prisma Access (*formerly GlobalProtect cloud service*) for securing user access, Prisma SaaS (*formerly Aperture*) for protecting SaaS applications and VM-Series for in-line network security in multi- and hybrid- cloud environments.

Secure the Future:

- Secure the future of security operations through Cortex, which includes Cortex XDR for prevention, detection and response (*one unified product that was formerly Cortex XDR and Traps*), Cortex SOAR (*formerly Demisto*) for security orchestration, automation and response (“SOAR”), AutoFocus for threat intelligence, Zingbox IoT Guardian for Internet of Things (“IoT”) security and Cortex Data Lake to collect and integrate security data for analytics. These products are delivered as software or SaaS subscriptions.

For the second quarter of fiscal 2020 and 2019, total revenue was \$816.7 million and \$711.2 million, respectively, representing year-over-year growth of 14.8%. Our growth reflected the increased adoption of our hybrid SaaS revenue model, which consists of product, subscriptions, and support. We believe this model will enable us to benefit from recurring revenues as we continue to grow our installed end-customer base. As of January 31, 2020, we had end-customers in more than 150 countries. Our end-customers represent a broad range of industries, including education, energy, financial services, government entities, healthcare, Internet and media, manufacturing, public sector, and telecommunications, and include some of the largest Fortune 100 and Global 2000 companies in the world. We maintain a field sales force that works closely with our channel partners in developing sales opportunities. We use a two-tiered, indirect fulfillment model whereby we sell our products, subscriptions, and support to our distributors, which, in turn, sell to our resellers, which then sell to our end-customers.

Our product revenue was \$246.5 million, or 30.2% of total revenue, for the second quarter of fiscal 2020, representing a year-over-year decrease of 9.2%. Product revenue is generated from sales of our appliances, primarily our Next-Generation Firewall, which is available in physical and virtualized form. Our Next-Generation Firewall incorporates our proprietary PAN-OS operating system, which provides a consistent set of capabilities across our entire product line. Our products are designed for different performance requirements throughout an organization, ranging from our PA-220, which is designed for small organizations and remote or branch offices, to our top-of-the-line PA-7080, which is especially suited for very large enterprise deployments and service provider customers. The same firewall functionality that is delivered in our physical appliances is also available in our VM-Series virtual firewalls, which secure virtualized and cloud-based computing environments.

Our subscription and support revenue grew to \$570.2 million, or 69.8% of total revenue, for the second quarter of fiscal 2020, representing year-over-year growth of 29.7%. Our subscriptions provide our end-customers with real-time access to the latest antivirus, intrusion prevention, web filtering, and modern malware prevention capabilities across the network, endpoints, and the cloud. When end-customers purchase our physical or virtual firewall appliances, they typically purchase support in order to receive ongoing security updates, upgrades, bug fixes, and repairs. In addition to the subscriptions purchased with these appliances, end-customers may also purchase other subscriptions on a per-user, per-endpoint, or capacity-based basis.

We continue to invest in innovation as we evolve and further extend the capabilities of our platforms, as we believe that innovation and timely development of new features and products is essential to meeting the needs of our end-customers and improving our competitive position. For example, in December 2019, we acquired Aporeto Inc. (“Aporeto”), which we believe will strengthen our cloud-native security platform capabilities delivered by Prisma Cloud.

We believe that the growth of our business and our short-term and long-term success are dependent upon many factors, including our ability to extend our technology leadership, grow our base of end-customers, expand deployment of our platforms and support offerings within existing end-customers, and focus on end-customer satisfaction. To manage any future growth effectively, we must continue to improve and expand our information technology and financial infrastructure, our operating and administrative systems and controls, and our ability to manage headcount, capital, and processes in an efficient manner. While these areas present significant opportunities for us, they also pose challenges and risks that we must successfully address in order to sustain the growth of our business and improve our operating results. For additional information regarding the challenges and risks we face, see the “Risk Factors” section in Part II, Item 1A of this Quarterly Report on Form 10-Q.

Key Financial Metrics

We monitor the key financial metrics set forth in the tables below to help us evaluate growth trends, establish budgets, measure the effectiveness of our sales and marketing efforts, and assess operational efficiencies. We discuss revenue, gross margin, and the components of operating loss and margin below under “—Results of Operations.”

	January 31, 2020		July 31, 2019	
	(in millions)			
Total deferred revenue	\$	3,198.5	\$	2,888.7
Cash, cash equivalents, and investments	\$	3,451.8	\$	3,378.5

	Three Months Ended January 31,		Six Months Ended January 31,					
	2020	2019	2020	2019				
	(dollars in millions)							
Total revenue	\$	816.7	\$	711.2	\$	1,588.6	\$	1,367.2
Total revenue year-over-year percentage increase		14.8 %		30.4%		16.2 %		30.5 %
Gross margin		71.5 %		71.5%		71.6 %		71.8 %
Operating loss	\$	(52.9)	\$	6.6	\$	(104.7)	\$	(25.5)
Operating margin		(6.5)%		0.9%		(6.6)%		(1.9)%
Billings	\$	998.9	\$	852.5	\$	1,896.3	\$	1,611.0
Billings year-over-year percentage increase		17.2 %		26.6%		17.7 %		27.0 %
Cash flow provided by operating activities					\$	532.1	\$	527.7
Free cash flow (non-GAAP)					\$	435.8	\$	469.9

- Deferred Revenue.** Our deferred revenue primarily consists of amounts that have been invoiced but have not been recognized as revenue as of the period end. The majority of our deferred revenue balance consists of subscription and support revenue that is recognized ratably over the contractual service period. We monitor our deferred revenue balance because it represents a significant portion of revenue to be recognized in future periods.
- Billings.** We define billings as total revenue plus the change in total deferred revenue, net of acquired deferred revenue, during the period. We consider billings to be a key metric used by management to manage our business given our hybrid SaaS revenue model, and believe billings provides investors with an important indicator of the health and visibility of our business because it includes subscription and support revenue, which is recognized ratably over the contractual service period, and product revenue, which is recognized at the time of shipment, provided that all other conditions for revenue recognition have been met. We consider billings to be a useful metric for management and investors, particularly if we continue to experience increased sales of subscriptions and strong renewal rates for subscription and support offerings, and as we monitor our near-term cash flows. While we believe that billings provides useful information to investors and others in understanding and evaluating our operating results in the same manner as our management, it is important to note that other companies, including companies in our industry, may not use billings, may calculate billings differently, may have different billing frequencies, or may use other financial measures to evaluate their performance, all of which could reduce the usefulness of billings as a comparative measure. We calculate billings in the following manner:

	Three Months Ended January 31,		Six Months Ended January 31,					
	2020	2019	2020	2019				
	(in millions)		(in millions)					
Billings:								
Total revenue	\$	816.7	\$	711.2	\$	1,588.6	\$	1,367.2
Add: change in total deferred revenue, net of acquired deferred revenue		182.2		141.3		307.7		243.8
Billings	\$	998.9	\$	852.5	\$	1,896.3	\$	1,611.0

- Cash Flow Provided by Operating Activities.** We monitor cash flow provided by operating activities as a measure of our overall business performance. Our cash flow provided by operating activities is driven in large part by sales of our products and from up-front payments for subscription and support offerings. Monitoring cash flow provided by operating activities enables us to analyze our financial performance without the non-cash effects of certain items such as depreciation, amortization, and share-based compensation costs, thereby allowing us to better understand and manage the cash needs of our business.
- Free Cash Flow (non-GAAP).** We define free cash flow, a non-GAAP financial measure, as cash provided by operating activities less purchases of property, equipment, and other assets. We consider free cash flow to be a profitability and liquidity measure that provides useful information to management and investors about the amount of cash generated by

the business after necessary capital expenditures. A limitation of the utility of free cash flow as a measure of our financial performance and liquidity is that it does not represent the total increase or decrease in our cash balance for the period. In addition, it is important to note that other companies, including companies in our industry, may not use free cash flow, may calculate free cash flow in a different manner than we do, or may use other financial measures to evaluate their performance, all of which could reduce the usefulness of free cash flow as a comparative measure. A reconciliation of free cash flow to cash flow provided by operating activities, the most directly comparable financial measure calculated and presented in accordance with GAAP, is provided below:

	Six Months Ended January 31,	
	2020	2019
	(in millions)	
Free cash flow (non-GAAP):		
Net cash provided by operating activities	\$ 532.1	\$ 527.7
Less: purchases of property, equipment, and other assets	96.3	57.8
Free cash flow (non-GAAP)	<u>\$ 435.8</u>	<u>\$ 469.9</u>
Net cash provided by (used in) investing activities	<u>\$ 680.9</u>	<u>\$ (1,236.9)</u>
Net cash used in financing activities	<u>\$ (173.2)</u>	<u>\$ (669.6)</u>

Results of Operations

The following table summarizes our results of operations for the periods presented and as a percentage of our total revenue for those periods based on our condensed consolidated statements of operations data. The period to period comparison of results is not necessarily indicative of results for future periods.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020		2019		2020		2019	
	Amount	% of Revenue	Amount	% of Revenue	Amount	% of Revenue	Amount	% of Revenue
	(dollars in millions)							
Revenue:								
Product	\$ 246.5	30.2 %	\$ 271.6	38.2 %	\$ 477.7	30.1 %	\$ 512.1	37.5 %
Subscription and support	570.2	69.8 %	439.6	61.8 %	1,110.9	69.9 %	855.1	62.5 %
Total revenue	<u>816.7</u>	<u>100.0 %</u>	<u>711.2</u>	<u>100.0 %</u>	<u>1,588.6</u>	<u>100.0 %</u>	<u>1,367.2</u>	<u>100.0 %</u>
Cost of revenue:								
Product	68.7	8.4 %	82.5	11.6 %	133.8	8.4 %	155.7	11.4 %
Subscription and support	164.4	20.1 %	120.1	16.9 %	317.0	20.0 %	230.4	16.8 %
Total cost of revenue ⁽¹⁾	<u>233.1</u>	<u>28.5 %</u>	<u>202.6</u>	<u>28.5 %</u>	<u>450.8</u>	<u>28.4 %</u>	<u>386.1</u>	<u>28.2 %</u>
Total gross profit	<u>583.6</u>	<u>71.5 %</u>	<u>508.6</u>	<u>71.5 %</u>	<u>1,137.8</u>	<u>71.6 %</u>	<u>981.1</u>	<u>71.8 %</u>
Operating expenses:								
Research and development	185.4	22.7 %	128.3	18.0 %	355.9	22.4 %	241.7	17.7 %
Sales and marketing	374.9	46.0 %	320.0	45.0 %	740.6	46.6 %	634.6	46.5 %
General and administrative	76.2	9.3 %	53.7	7.6 %	146.0	9.2 %	130.3	9.5 %
Total operating expenses ⁽¹⁾	<u>636.5</u>	<u>78.0 %</u>	<u>502.0</u>	<u>70.6 %</u>	<u>1,242.5</u>	<u>78.2 %</u>	<u>1,006.6</u>	<u>73.7 %</u>
Operating loss	<u>(52.9)</u>	<u>(6.5)%</u>	<u>6.6</u>	<u>0.9 %</u>	<u>(104.7)</u>	<u>(6.6)%</u>	<u>(25.5)</u>	<u>(1.9)%</u>
Interest expense	(19.0)	(2.3)%	(20.6)	(2.9)%	(37.9)	(2.4)%	(43.3)	(3.2)%
Other income, net	10.8	1.3 %	16.0	2.3 %	27.0	1.7 %	29.0	2.2 %
Loss before income taxes	<u>(61.1)</u>	<u>(7.5)%</u>	<u>2.0</u>	<u>0.3 %</u>	<u>(115.6)</u>	<u>(7.3)%</u>	<u>(39.8)</u>	<u>(2.9)%</u>
Provision for income taxes	12.6	1.5 %	4.6	0.7 %	17.7	1.1 %	1.1	0.1 %
Net loss	<u>\$ (73.7)</u>	<u>(9.0)%</u>	<u>\$ (2.6)</u>	<u>(0.4)%</u>	<u>\$ (133.3)</u>	<u>(8.4)%</u>	<u>\$ (40.9)</u>	<u>(3.0)%</u>

(1) Includes share-based compensation as follows:

	Three Months Ended January 31,		Six Months Ended January 31,	
	2020	2019	2020	2019
	(in millions)			
Cost of product revenue	\$ 1.6	\$ 1.4	\$ 2.9	\$ 3.0
Cost of subscription and support revenue	20.0	18.2	38.9	35.7
Research and development	67.0	44.0	129.4	84.5
Sales and marketing	54.9	58.7	98.7	114.7
General and administrative	29.4	20.1	54.2	55.6
Total share-based compensation	\$ 172.9	\$ 142.4	\$ 324.1	\$ 293.5

Revenue

Our revenue consists of product revenue and subscription and support revenue. Revenue is recognized upon transfer of control of the corresponding promised products and subscriptions and support to our customers in an amount that reflects the consideration we expect to be entitled to in exchange for those products and subscriptions and support. We expect our revenue to vary from quarter to quarter based on seasonal and cyclical factors.

Product Revenue

Product revenue is derived primarily from sales of our appliances. Product revenue also includes revenue derived from software licenses of Panorama and the VM-Series. Our appliances and software licenses include a broad set of built-in networking and security features and functionalities. We generally recognize product revenue at the time of hardware shipment or delivery of software licenses.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Product	\$ 246.5	\$ 271.6	\$ (25.1)	(9.2)%	\$ 477.7	\$ 512.1	\$ (34.4)	(6.7)%

Product revenue decreased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The decrease was primarily due to a decrease in product unit volume. The change in product revenue due to pricing was not significant for either period.

Subscription and Support Revenue

Subscription and support revenue is derived primarily from sales of our subscription and support offerings. Our contractual subscription and support contracts are typically one to five years. We recognize revenue from subscriptions and support over time as the services are performed. As a percentage of total revenue, we expect our subscription and support revenue to vary from quarter to quarter and increase over the long term as we introduce new subscriptions, renew existing subscription and support contracts, and expand our installed end-customer base.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Subscription	\$ 342.6	\$ 249.7	\$ 92.9	37.2%	\$ 661.2	\$ 481.0	\$ 180.2	37.5%
Support	227.6	189.9	37.7	19.9%	449.7	374.1	75.6	20.2%
Total subscription and support	\$ 570.2	\$ 439.6	\$ 130.6	29.7%	\$ 1,110.9	\$ 855.1	\$ 255.8	29.9%

Subscription and support revenue increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The increase in both periods was due to increased demand for our subscription and support offerings from both new and existing end-customers. The mix between subscription revenue and support revenue will fluctuate over time.

depending on the introduction of new subscription offerings, renewals of support services, and our ability to increase sales to new and existing end customers. The change in subscription and support revenue due to changes in pricing was not significant for either period.

Revenue by Geographic Theater

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
(dollars in millions)								
Americas	\$ 544.7	\$ 475.0	\$ 69.7	14.7%	\$ 1,074.3	\$ 925.2	\$ 149.1	16.1%
EMEA	166.2	148.3	\$ 17.9	12.1%	313.8	276.0	37.8	13.7%
APAC	105.8	87.9	17.9	20.4%	200.5	166.0	34.5	20.8%
Total revenue	\$ 816.7	\$ 711.2	\$ 105.5	14.8%	\$ 1,588.6	\$ 1,367.2	\$ 221.4	16.2%

With respect to geographic theaters, the Americas contributed the largest portion of the increase in revenue for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019, due to its larger and more established sales force compared to our other theaters. Revenue from both Europe, the Middle East, and Africa (“EMEA”) and Asia Pacific and Japan (“APAC”) increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019, due to our investment in increasing the size of our sales force in these theaters.

Cost of Revenue

Our cost of revenue consists of cost of product revenue and cost of subscription and support revenue.

Cost of Product Revenue

Cost of product revenue primarily includes costs paid to our manufacturing partners. Our cost of product revenue also includes personnel costs, which consist of salaries, benefits, bonuses, share-based compensation, and travel and entertainment associated with our operations organization, amortization of intellectual property licenses, product testing costs, shipping and tariff costs, and allocated costs. Allocated costs consist of certain facilities, depreciation, benefits, recruiting, and information technology costs that we allocate based on headcount. We expect our cost of product revenue to increase as our product revenue increases.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
(dollars in millions)								
Cost of product revenue	\$ 68.7	\$ 82.5	\$ (13.8)	(16.7)%	\$ 133.8	\$ 155.7	\$ (21.9)	(14.1)%
Number of employees at period end	111	98	13	13.3%	111	98	13	13.3%

Cost of product revenue decreased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The decrease for the three months ended January 31, 2020 was primarily due to a decrease in product unit volume and lower amortization of intellectual property licenses. The decrease for the six months ended January 31, 2020 was primarily due to reductions in costs of materials and lower amortization of intellectual property licenses.

Cost of Subscription and Support Revenue

Cost of subscription and support revenue includes personnel costs for our global customer support and technical operations organizations, customer support and repair costs, third-party professional services costs, data center and cloud hosting costs, amortization of acquired intangible assets and capitalized software development costs, and allocated costs. We expect our cost of subscription and support revenue to increase as our installed end-customer base grows and adoption of our cloud-based subscription offerings increases.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020		2019		2020		2019	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Cost of subscription and support revenue	\$ 164.4	\$ 120.1	\$ 44.3	36.9%	\$ 317.0	\$ 230.4	\$ 86.6	37.6%
Number of employees at period end	1,331	1,030	301	29.2%	1,331	1,030	301	29.2%

Cost of subscription and support revenue increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The increase in both periods was primarily due to increased costs to support the growth of our subscription and support offerings. Personnel costs grew \$16.5 million to \$79.5 million for the three months ended January 31, 2020 compared to the three months ended January 31, 2019, and grew \$31.8 million to \$153.4 million for the six months ended January 31, 2020 compared to the six months ended January 31, 2019 primarily due to headcount growth. Data center and cloud hosting costs to support the adoption of our cloud-based subscription offerings increased \$16.3 million for the three months ended January 31, 2020 compared to the three months ended January 31, 2019, and increased \$30.5 million for the six months ended January 31, 2020 compared to the six months ended January 31, 2019. The remaining increase was primarily due to amortization of purchased intangible assets, which increased \$7.0 million for the three months ended January 31, 2020 compared to the three months ended January 31, 2019 and increased \$15.1 million for the six months ended January 31, 2020 compared to the six months ended January 31, 2019, as a result of our recent acquisitions.

Gross Margin

Gross margin, or gross profit as a percentage of revenue, has been and will continue to be affected by a variety of factors, including the introduction of new products, manufacturing costs, the average sales price of our products, the mix of products sold, and the mix of revenue between product and subscription and support offerings. For sales of our products, our higher-end firewall products generally have higher gross margins than our lower-end firewall products within each product series. For sales of our subscription and support offerings, our subscription offerings typically have higher gross margins than our support offerings. We expect our gross margins to fluctuate over time depending on the factors described above.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020		2019		2020		2019	
	Amount	Gross Margin	Amount	Gross Margin	Amount	Gross Margin	Amount	Gross Margin
	(dollars in millions)							
Product	\$ 177.8	72.1%	\$ 189.1	69.6%	\$ 343.9	72.0%	\$ 356.4	69.6%
Subscription and support	405.8	71.2%	319.5	72.7%	793.9	71.5%	624.7	73.1%
Total gross profit	\$ 583.6	71.5%	\$ 508.6	71.5%	\$ 1,137.8	71.6%	\$ 981.1	71.8%

Product gross margin increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019, primarily due to reductions in costs of materials and lower amortization of intellectual property licenses.

Subscription and support gross margin decreased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019, primarily due to an increase in costs to support the adoption of our cloud-based subscription offerings and higher amortization of purchased intangibles as a result of our recent acquisitions.

Operating Expenses

Our operating expenses consist of research and development, sales and marketing, and general and administrative expense. Personnel costs are the most significant component of operating expenses and consist of salaries, benefits, bonuses, share-based compensation, travel and entertainment, and with regard to sales and marketing expense, sales commissions. Our operating expenses also include allocated costs, which consist of certain facilities, depreciation, benefits, recruiting, and information technology costs that we allocate based on headcount. We expect operating expenses to increase in absolute dollars and decrease over the long term as a percentage of revenue as we continue to scale our business. As of January 31, 2020, we expect to recognize approximately \$1.5 billion of share-based compensation expense over a weighted-average period of approximately 2.7 years, excluding additional share-based compensation expense related to any future grants of share-based awards. Share-based compensation expense is generally recognized on a straight-line basis over the requisite service periods of the awards.

Research and Development

Research and development expense consists primarily of personnel costs. Research and development expense also includes prototype related expenses and allocated costs. We expect research and development expense to increase in absolute dollars as we continue to invest in our future products and services, although our research and development expense may fluctuate as a percentage of total revenue.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Research and development	\$ 185.4	\$ 128.3	\$ 57.1	44.5%	\$ 355.9	\$ 241.7	\$ 114.2	47.2%
Number of employees at period end	1,646	1,098	548	49.9%	1,646	1,098	548	49.9%

Research and development expense increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The increase was primarily due to personnel costs, which grew \$46.2 million to \$143.7 million for the three months ended January 31, 2020 compared to the three months ended January 31, 2019, and grew \$91.5 million to \$276.9 million for the six months ended January 31, 2020 compared to the six months ended January 31, 2019. The increase in personnel costs in both periods was primarily due to headcount growth. The remaining increase in both periods was primarily driven by an increase in allocated costs.

Sales and Marketing

Sales and marketing expense consists primarily of personnel costs, including commission expense. Sales and marketing expense also includes costs for market development programs, promotional and other marketing costs, professional services, and allocated costs. We continue to thoughtfully invest in headcount and have substantially grown our sales presence internationally. We expect sales and marketing expense to continue to increase in absolute dollars as we increase the size of our sales and marketing organizations to increase touch points with end-customers and to expand our international presence, although our sales and marketing expense may fluctuate as a percentage of total revenue.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Sales and marketing	\$ 374.9	\$ 320.0	\$ 54.9	17.2%	\$ 740.6	\$ 634.6	\$ 106.0	16.7%
Number of employees at period end	3,699	2,919	780	26.7%	3,699	2,919	780	26.7%

Sales and marketing expense increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The increase was primarily due to personnel costs, which grew \$44.5 million to \$288.5 million for the three months ended January 31, 2020 compared to the three months ended January 31, 2019, and grew \$80.3 million to \$551.6 million for the six months ended January 31, 2020 compared to the six months ended January 31, 2019. The increase in personnel costs in both periods was largely due to headcount growth. The remaining increase in both periods was primarily driven by an increase in costs associated with marketing-related activities.

General and Administrative

General and administrative expense consists primarily of personnel costs for our executive, finance, human resources, legal, and information technology organizations, and professional services costs, which consist primarily of legal, auditing, accounting, and other consulting costs. General and administrative expense also includes certain non-recurring general expenses and impairment losses. Certain facilities, depreciation, benefits, recruiting, and information technology costs are allocated to other organizations based on headcount. We expect general and administrative expense to increase in absolute dollars due to additional costs associated with accounting, compliance, and insurance, although our general and administrative expense may fluctuate as a percentage of total revenue.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
General and administrative	\$ 76.2	\$ 53.7	\$ 22.5	41.9%	\$ 146.0	\$ 130.3	\$ 15.7	12.0%
Number of employees at period end	856	711	145	20.4%	856	711	145	20.4%

General and administrative expense increased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019, primarily due to personnel costs, which increased \$18.6 million to \$55.6 million for the three months ended January 31, 2020 compared to the three months ended January 31, 2019, and increased \$12.1 million to \$101.9 million for the six months ended January 31, 2020 compared to the six months ended January 31, 2019. The increase in both periods were largely due to headcount growth. The increase in the six months ended January 31, 2020 was partially offset by the accelerated vesting of certain equity awards in connection with the RedLock acquisition of \$14.2 million during the six months ended January 31, 2019.

Interest Expense

Interest expense primarily consists of non-cash interest expense from the amortization of the debt discount and debt issuance costs related to our 0.0% Convertible Senior Notes due 2019 (the "2019 Notes") and 0.75% Convertible Senior Notes due 2023 (the "2023 Notes" and, together with the 2019 Notes, the "Notes"), and also includes the contractual interest expense related to our 2023 Notes.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Interest expense	\$ 19.0	\$ 20.6	\$ (1.6)	(7.8)%	\$ 37.9	\$ 43.3	\$ (5.4)	(12.5)%

Interest expense decreased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The decrease in both periods was primarily due to conversions of the 2019 Notes before and upon maturity in July 2019. Refer to Note 9. Debt in Part I, Item 1 of this Quarterly Report on Form 10-Q for more information on the Notes.

Other Income, Net

Other income, net includes interest income earned on our cash, cash equivalents, and investments, foreign currency remeasurement gains and losses, and foreign currency transaction gains and losses.

	Three Months Ended January 31,				Six Months Ended January 31,			
	2020	2019	Change		2020	2019	Change	
	Amount	Amount	Amount	%	Amount	Amount	Amount	%
	(dollars in millions)							
Other income, net	\$ 10.8	\$ 16.0	\$ (5.2)	(32.5)%	\$ 27.0	\$ 29.0	\$ (2.0)	(6.9)%

Other income, net decreased for the three and six months ended January 31, 2020 compared to the three and six months ended January 31, 2019. The decrease was primarily due to lower interest income on our investments.

Provision for Income Taxes

Provision for income taxes consists primarily of income taxes in foreign jurisdictions in which we conduct business, withholding taxes, and U.S. state income taxes. We maintain a full valuation allowance for domestic and certain foreign deferred tax assets, including net operating loss carryforwards and certain domestic tax credits. In recent years, we reorganized our corporate structure and intercompany relationships to more closely align with the international nature of our business activities. Our corporate structure has caused, and may continue to cause, disproportionate relationships between our overall effective tax rate and other jurisdictional measures. To the extent we revisit our corporate structure, it may have an impact on our tax provision.

	Three Months Ended January 31,		Change		Six Months Ended January 31,		Change	
	2020	2019	Amount	%	2020	2019	Amount	%
(dollars in millions)								
Provision for income taxes	\$ 12.6	\$ 4.6	\$ 8.0	173.9%	\$ 17.7	\$ 1.1	\$ 16.6	1,509.1%
Effective tax rate	(20.6)%	230.0%			(15.3)%	(2.8)%		

We recorded an income tax provision for the three and six months ended January 31, 2020. The provision for income taxes for the three and six months ended January 31, 2020 was primarily due to income taxes in profitable foreign jurisdictions, U.S. state taxes, and withholding taxes. Our provision for income taxes increased for the three months ended January 31, 2020 compared to the three months ended January 31, 2019, primarily due to an increase in foreign withholding taxes. Our provision for income taxes increased for the six months ended January 31, 2020 compared to the six months ended January 31, 2019, due to an increase in withholding taxes and a decrease in one-time tax benefits relating to partial releases of our U.S. valuation allowance resulting from acquisitions. Refer to Note 14. Income Taxes in Part I, Item 1 of this Quarterly Report on Form 10-Q for more information.

Liquidity and Capital Resources

	January 31, 2020		July 31, 2019	
	(in millions)			
Working capital	\$	1,738.7	\$	1,611.5
Cash, cash equivalents, and investments:				
Cash and cash equivalents	\$	2,000.0	\$	961.4
Investments		1,451.8		2,417.1
Total cash, cash equivalents, and investments	\$	3,451.8	\$	3,378.5

As of January 31, 2020, our total cash, cash equivalents, and investments of \$3.5 billion were held for general corporate purposes, of which approximately \$452.3 million was held outside of the United States. As of January 31, 2020, we had no unremitted earnings when evaluating our outside basis difference relating to our U.S. investment in foreign subsidiaries. However, there could be local withholding taxes payable due to various foreign countries if certain lower tier earnings are distributed. Withholding taxes that would be payable upon remittance of these lower tier earnings are not expected to be material.

In July 2018, we issued the 2023 Notes with an aggregate principal amount of \$1.7 billion. The 2023 Notes mature on July 1, 2023; however, under certain circumstances, holders may surrender their 2023 Notes for conversion prior to the maturity date. Upon conversion of the 2023 Notes, we will pay cash equal to the aggregate principal amount of the 2023 Notes to be converted, and, at our election, will pay or deliver cash and/or shares of our common stock for the amount of our conversion obligation in excess of the aggregate principal amount of the 2023 Notes being converted. As of January 31, 2020, all of the 2023 Notes remained outstanding. Refer to Note 9. Debt in Part I, Item 1 of this Quarterly Report on Form 10-Q for information on the Notes.

In September 2018, we entered into a credit agreement (the "Credit Agreement") that provides for a \$400.0 million unsecured revolving credit facility (the "Credit Facility"), with an option to increase the amount of the credit facility up to an additional \$350.0 million, subject to certain conditions. As of January 31, 2020, there were no amounts outstanding, and we were in compliance with all covenants under the Credit Agreement. Refer to Note 9. Debt in Part I, Item 1 of this Quarterly Report on Form 10-Q for more information on the Credit Agreement.

In February 2019, our board of directors authorized a \$1.0 billion share repurchase program which is funded from available working capital and will expire on December 31, 2020. As of January 31, 2020, \$801.9 million remained available for future share repurchases under our current repurchase authorization. Refer to Note 12. Stockholders' Equity in Part I, Item 1 of this Quarterly Report on Form 10-Q for more information on the repurchase program. In February 2020, our board of directors approved the repurchase of \$1.0 billion of our common stock through an accelerated share repurchase ("ASR") transaction, which we expect to enter into during our fiscal quarter ending April 30, 2020, subject to market conditions. The ASR transaction is in addition to our

\$1.0 billion share repurchase program that our board of directors authorized in February 2019. Refer to Note 17. Subsequent Events in Part I, Item 1 of this Quarterly Report on Form 10-Q for more information on the ASR transaction.

The following table summarizes our cash flows for the six months ended January 31, 2020 and 2019:

	Six Months Ended January 31,	
	2020	2019
	(in millions)	
Net cash provided by operating activities	\$ 532.1	\$ 527.7
Net cash provided by (used in) investing activities	680.9	(1,236.9)
Net cash used in financing activities	(173.2)	(669.6)
Net increase (decrease) in cash, cash equivalents, and restricted cash	<u>\$ 1,039.8</u>	<u>\$ (1,378.8)</u>

We believe that our cash flow from operations with existing cash and cash equivalents will be sufficient to meet our anticipated cash needs for the foreseeable future. Our future capital requirements will depend on many factors including our growth rate, the timing and extent of spending to support development efforts, the expansion of sales and marketing activities, the introduction of new and enhanced products and subscription and support offerings, the costs to acquire or invest in complementary businesses and technologies, the costs to ensure access to adequate manufacturing capacity, the investments in our infrastructure to support the adoption of our cloud-based subscription offerings, the investments in our new corporate headquarters, and the continuing market acceptance of our products and subscription and support offerings. In addition, from time to time we may incur additional tax liability in connection with certain corporate structuring decisions.

We may also choose to seek additional equity or debt financing. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we are unable to raise additional capital when desired, our business, operating results, and financial condition may be adversely affected.

Operating Activities

Our operating activities have consisted of net losses adjusted for certain non-cash items and changes in assets and liabilities.

Cash provided by operating activities during the six months ended January 31, 2020 was \$532.1 million, a slight increase of \$4.4 million compared to the six months ended January 31, 2019. The increase was primarily due to repayments of the 2019 Notes attributable to the debt discount during the six months ended January 31, 2019, partially offset by higher cash expenditure during the six months ended January 31, 2020.

Investing Activities

Our investing activities have consisted of capital expenditures, net investment purchases, sales, and maturities, and business acquisitions. We expect to continue such activities as our business grows.

Cash provided by investing activities during the six months ended January 31, 2020 was \$680.9 million, a net change of \$1,917.8 million compared to cash used in investing activities of \$1,236.9 million during the six months ended January 31, 2019. The change was primarily due to lower purchases of investments and higher proceeds from maturities of investments, partially offset by an increase in net cash payments for business acquisitions and an increase in purchases of property, equipment and other assets during the six months ended January 31, 2020.

Financing Activities

Our financing activities have consisted of repayments of the 2019 Notes, proceeds from sales of shares through employee equity incentive plans, cash used to repurchase shares of our common stock, and payments for tax withholding obligations of certain employees related to the net share settlement of equity awards.

Cash used in financing activities during the six months ended January 31, 2020 was \$173.2 million, a decrease of \$496.4 million compared to the six months ended January 31, 2019. The decrease was primarily due to repayments of our 2019 Notes during the six months ended January 31, 2019, and lower repurchases of our common stock during the six months ended January 31, 2020.

Off-Balance Sheet Arrangements

As of January 31, 2020, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities that would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical Accounting Estimates

Our condensed consolidated financial statements have been prepared in accordance with U.S. GAAP. The preparation of these condensed consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses, and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. Actual results may differ from these estimates. To the extent that there are material differences between these estimates and our actual results, our future financial statements will be affected.

We believe the critical accounting estimates discussed under Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the fiscal year ended July 31, 2019 reflect our more significant judgments and estimates used in the preparation of our condensed consolidated financial statements. There have been no significant changes to our critical accounting estimates as filed in such report.

Recent Accounting Pronouncements

Refer to “Recently Adopted Accounting Pronouncements” and “Recently Issued Accounting Pronouncements” in Note 1. Description of Business and Summary of Significant Accounting Policies in Part I, Item 1 of this Quarterly Report on Form 10-Q.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our assessment of our exposures to market risk has not changed materially since the presentation set forth in Part II, Item 7A of our Annual Report on Form 10-K for the fiscal year ended July 31, 2019.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of the end of the period covered by this report. Based on our evaluation, our chief executive officer and chief financial officer concluded that, as of January 31, 2020, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the fiscal quarter ended January 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on Controls

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs. Further, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within the Company have been detected.

PART II

ITEM 1. LEGAL PROCEEDINGS

The information set forth under the “Litigation” subheading in Note 11. Commitments and Contingencies in Part I, Item 1 of this Quarterly Report on Form 10-Q is incorporated herein by reference.

ITEM 1A. RISK FACTORS

Our operations and financial results are subject to various risks and uncertainties including those described below. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, also may become important factors that affect us. If any of the following risks or others not specified below materialize, our business, financial condition, and operating results could be materially adversely affected and the market price of our common stock could decline.

Risks Related to Our Business and Our Industry

Our business and operations have experienced growth in recent periods, and if we do not effectively manage any future growth or are unable to improve our systems, processes, and controls, our operating results could be adversely affected.

We have experienced growth and increased demand for our products and subscriptions over the last few years. As a result, our employee headcount has increased significantly, and we expect it to continue to grow over the next year. For example, from the end of fiscal 2019 to the end of the second quarter of fiscal 2020, our headcount increased from 7,014 to 7,643 employees. In addition, as we have grown, our number of end-customers has also increased significantly, and we have increasingly managed more complex deployments of our products and subscriptions with larger end-customers. The growth and expansion of our business and product, subscription, and support offerings places a significant strain on our management, operational, and financial resources. To manage any future growth effectively, we must continue to improve and expand our information technology and financial infrastructure, our operating and administrative systems and controls, and our ability to manage headcount, capital, and processes in an efficient manner.

We may not be able to successfully implement or scale improvements to our systems, processes, and controls in an efficient or timely manner. In addition, our existing systems, processes, and controls may not prevent or detect all errors, omissions, or fraud. We may also experience difficulties in managing improvements to our systems, processes, and controls or in connection with third-party software licensed to help us with such improvements. Any future growth would add complexity to our organization and require effective coordination throughout our organization. Failure to manage any future growth effectively could result in increased costs, disrupt our existing end-customer relationships, reduce demand for or limit us to smaller deployments of our platforms, or harm our business performance and operating results.

Our operating results may vary significantly from period to period and be unpredictable, which could cause the market price of our common stock to decline.

Our operating results, in particular, our revenues, gross margins, operating margins, and operating expenses, have historically varied from period to period, and even though we have experienced growth, we expect variation to continue as a result of a number of factors, many of which are outside of our control and may be difficult to predict, including:

- our ability to attract and retain new end-customers or sell additional products and subscriptions to our existing end-customers;
- the budgeting cycles, seasonal buying patterns, and purchasing practices of our end-customers;
- changes in end-customer, distributor or reseller requirements, or market needs;
- price competition;
- the timing and success of new product and service introductions by us or our competitors or any other change in the competitive landscape of our industry, including consolidation among our competitors or end-customers and strategic partnerships entered into by and between our competitors;
- changes in the mix of our products, subscriptions, and support, including changes in multi-year subscriptions and support;
- our ability to successfully and continuously expand our business domestically and internationally;
- changes in the growth rate of the enterprise security market;
- deferral of orders from end-customers in anticipation of new products or product enhancements announced by us or our competitors;

- the timing and costs related to the development or acquisition of technologies or businesses or strategic partnerships;
- lack of synergy or the inability to realize expected synergies, resulting from acquisitions or strategic partnerships;
- our inability to execute, complete or integrate efficiently any acquisitions that we may undertake;
- increased expenses, unforeseen liabilities, or write-downs and any impact on our operating results from any acquisitions we consummate;
- our ability to increase the size and productivity of our distribution channel;
- decisions by potential end-customers to purchase security solutions from larger, more established security vendors or from their primary network equipment vendors;
- changes in end-customer penetration or attach and renewal rates for our subscriptions;
- timing of revenue recognition and revenue deferrals;
- our ability to manage production and manufacturing related costs, global customer service organization costs, inventory excess and obsolescence costs, and warranty costs;
- insolvency or credit difficulties confronting our end-customers, which could adversely affect their ability to purchase or pay for our products and subscription and support offerings, or confronting our key suppliers, including our sole source suppliers, which could disrupt our supply chain;
- any disruption in our channel or termination of our relationships with important channel partners, including as a result of consolidation among distributors and resellers of security solutions;
- our inability to fulfill our end-customers' orders due to supply chain delays or events that impact our manufacturers or their suppliers, including a localized health risk such as the coronavirus;
- the cost and potential outcomes of litigation, which could have a material adverse effect on our business;
- seasonality or cyclical fluctuations in our markets;
- future accounting pronouncements or changes in our accounting policies;
- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates, as an increasing amount of our expenses is incurred and paid in currencies other than the U.S. dollar;
- political, economic and social instability caused by the referendum in June 2016, in which voters in the United Kingdom (the "U.K.") approved an exit from the European Union (the "E.U.") and the U.K. government subsequently notified the E.U. of its withdrawal, which is commonly referred to as "Brexit," continued hostilities in the Middle East, terrorist activities, and any disruption these events may cause to the broader global industrial economy; and
- general macroeconomic conditions, both domestically and in our foreign markets that could impact some or all regions where we operate.

Any one of the factors above, or the cumulative effect of some of the factors referred to above, may result in significant fluctuations in our financial and other operating results. This variability and unpredictability could result in our failure to meet our revenue, margin, or other operating result expectations or those of securities analysts or investors for a particular period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our common stock could fall substantially, and we could face costly lawsuits, including securities class action suits.

Uncertain or weakened global economic conditions could have an adverse effect on our business and operating results.

We operate globally and as a result our business and revenues are impacted by global macroeconomic conditions. The global macroeconomic environment has been and may continue to be inconsistent and challenging due to instability in the global credit markets, the current economic challenges in China, falling demand for oil and other commodities, uncertainties regarding the effects of Brexit, uncertainties related to the impact of the coronavirus, uncertainties related to elections and changes in public policies such as domestic and international regulations, taxes, or international trade agreements, international trade disputes, government shutdowns, geopolitical turmoil and other disruptions to global and regional economies and markets. As a result, any continued or further uncertainty, weakness or deterioration in global macroeconomic and market conditions may cause our end-customers to modify spending priorities or delay purchasing decisions, and result in lengthened sales cycles, any of which could harm our business and operating results.

Our revenue growth rate in recent periods may not be indicative of our future performance.

We have experienced revenue growth rates of 16.2% and 30.5% in the six months ended January 31, 2020 and the six months ended January 31, 2019, respectively. Our revenue for any prior quarterly or annual period should not be relied upon as an indication of our future revenue or revenue growth for any future period. If we are unable to maintain consistent or increasing revenue or revenue growth, the market price of our common stock could be volatile, and it may be difficult for us to achieve and maintain profitability or maintain or increase cash flow on a consistent basis.

We have a history of losses, anticipate increasing our operating expenses in the future, and may not be able to achieve or maintain profitability or maintain or increase cash flow on a consistent basis, which could cause our business, financial condition, and operating results to suffer.

Other than fiscal 2012, we have incurred losses in all fiscal years since our inception. As a result, we had an accumulated deficit of \$1,034.2 million as of January 31, 2020. We anticipate that our operating expenses will continue to increase in the foreseeable future as we continue to grow our business. Our growth efforts may prove more expensive than we currently anticipate, and we may not succeed in increasing our revenues sufficiently, or at all, to offset increasing expenses. Revenue growth may slow or revenue may decline for a number of possible reasons, including slowing demand for our products or subscriptions, increasing competition, a decrease in the growth of, or a demand shift in, our overall market, or a failure to capitalize on growth opportunities. Any failure to increase our revenue as we grow our business could prevent us from achieving or maintaining profitability or maintaining or increasing cash flow on a consistent basis. In addition, we may have difficulty achieving profitability under U.S. GAAP due to share-based compensation expense and other non-cash charges. If we are unable to navigate these challenges as we encounter them, our business, financial condition, and operating results may suffer.

If we are unable to sell new and additional product, subscription, and support offerings to our end-customers, our future revenue and operating results will be harmed.

Our future success depends, in part, on our ability to expand the deployment of our platforms with existing end-customers and create demand for our new offerings, including cloud security, AI and analytics offerings. This may require increasingly sophisticated and costly sales efforts that may not result in additional sales. The rate at which our end-customers purchase additional products, subscriptions, and support depends on a number of factors, including the perceived need for additional security products, including subscription and support offerings, as well as general economic conditions. Further, existing end-customers have no contractual obligation to and may not renew their subscription and support contracts after the completion of their initial contract period. Our end-customers' renewal rates may decline or fluctuate as a result of a number of factors, including their level of satisfaction with our subscriptions and our support offerings, the frequency and severity of subscription outages, our product uptime or latency, and the pricing of our, or competing, subscriptions. Additionally, our end-customers may renew their subscription and support agreements for shorter contract lengths or on other terms that are less economically beneficial to us. We also cannot be certain that our end-customers will renew their subscription and support agreements. If our efforts to sell additional products and subscriptions to our end-customers are not successful or our end-customers do not renew their subscription and support agreements or renew them on less favorable terms, our revenues may grow more slowly than expected or decline.

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

The market for enterprise security products is intensely competitive, and we expect competition to increase in the future from established competitors and new market entrants. Our main competitors fall into three categories:

- large companies that incorporate security features in their products, such as Cisco Systems, Inc. ("Cisco") and Juniper Networks, Inc. ("Juniper"), or those that have acquired, or may acquire, large network and endpoint security vendors and have the technical and financial resources to bring competitive solutions to the market;
- independent security vendors, such as Check Point Software Technologies Ltd. ("Check Point") and Fortinet, Inc., that offer a mix of network and endpoint security products; and
- small and large companies that offer point solutions and/or cloud security services that compete with some of the features present in our platforms.

Many of our existing competitors have, and some of our potential competitors could have, substantial competitive advantages such as:

- greater name recognition and longer operating histories;
- larger sales and marketing budgets and resources;
- broader distribution and established relationships with distribution partners and end-customers;
- greater customer support resources;

- greater resources to make strategic acquisitions or enter into strategic partnerships;
- lower labor and development costs;
- larger and more mature intellectual property portfolios; and
- substantially greater financial, technical, and other resources.

In addition, some of our larger competitors have substantially broader and more diverse product and services offerings, which may make them less susceptible to downturns in a particular market and allow them to leverage their relationships based on other products or incorporate functionality into existing products to gain business in a manner that discourages users from purchasing our products and subscriptions, including through selling at zero or negative margins, offering concessions, product bundling, or closed technology platforms. Many of our smaller competitors that specialize in providing protection from a single type of security threat are often able to deliver these specialized security products to the market more quickly than we can.

Organizations that use legacy products and services may believe that these products and services are sufficient to meet their security needs or that our platforms only serve the needs of a portion of the enterprise security market. Accordingly, these organizations may continue allocating their information technology budgets for legacy products and services and may not adopt our security platforms. Further, many organizations have invested substantial personnel and financial resources to design and operate their networks and have established deep relationships with other providers of networking and security products. As a result, these organizations may prefer to purchase from their existing suppliers rather than add or switch to a new supplier such as us regardless of product performance, features, or greater services offerings or may be more willing to incrementally add solutions to their existing security infrastructure from existing suppliers than to replace it wholesale with our solutions.

Conditions in our market could change rapidly and significantly as a result of technological advancements, partnering or acquisitions by our competitors, or continuing market consolidation. New start-up companies that innovate and large competitors that are making significant investments in research and development may invent similar or superior products and technologies that compete with our products and subscriptions. Some of our competitors have made or could make acquisitions of businesses that may allow them to offer more directly competitive and comprehensive solutions than they had previously offered and adapt more quickly to new technologies and end-customer needs. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their resources.

These competitive pressures in our market or our failure to compete effectively may result in price reductions, fewer orders, reduced revenue and gross margins, and loss of market share. Any failure to meet and address these factors could seriously harm our business and operating results.

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

Increasingly, companies are subject to a wide variety of attacks on their networks on an ongoing basis. In addition to traditional computer “hackers,” malicious code (such as viruses and worms), phishing attempts, employee theft or misuse, and denial of service attacks, sophisticated nation-state and nation-state supported actors engage in intrusions and attacks (including advanced persistent threat intrusions) and add to the risks to our internal networks, cloud deployed enterprise and customer facing environments and the information they store and process. Despite significant efforts to create security barriers to such threats, it is virtually impossible for us to entirely mitigate these risks. We and our third-party service providers may face security threats and attacks from a variety of sources. Our data, corporate systems, third-party systems and security measures may be breached due to the actions of outside parties, employee error, malfeasance, a combination of these, or otherwise, and, as a result, an unauthorized party may obtain access to our data. Furthermore, as a well-known provider of security solutions, we may be a more attractive target for such attacks. A breach in our data security or an attack against our service availability, or that of our third-party service providers, could impact our networks or networks secured by our products and subscriptions, creating system disruptions or slowdowns and exploiting security vulnerabilities of our products, and the information stored on our networks or those of our third-party service providers could be accessed, publicly disclosed, altered, lost, or stolen, which could subject us to liability and cause us financial harm. Although we have not yet experienced significant damages from unauthorized access by a third party of our internal network, any actual or perceived breach of network security in our systems or networks, or any other actual or perceived data security incident we or our third-party service providers suffer, could result in damage to our reputation, negative publicity, loss of channel partners, end-customers and sales, loss of competitive advantages over our competitors, increased costs to remedy any problems and otherwise respond to any incident, regulatory investigations and enforcement actions, costly litigation, and other liability. In addition, we may incur significant costs and operational consequences of investigating, remediating, eliminating and putting in place additional tools and devices designed to prevent actual or perceived security breaches and other security incidents, as well as the costs to comply with any notification obligations resulting from any security incidents. While we maintain cybersecurity insurance, our insurance may be insufficient to cover all liabilities incurred by these incidents, and any incidents may result in loss of, or increased costs of, our cybersecurity insurance. Any of these negative outcomes could adversely impact the market perception of our products and subscriptions and end-customer and investor confidence in our company and could seriously harm our business or operating results.

Reliance on shipments at the end of the quarter could cause our revenue for the applicable period to fall below expected levels.

As a result of end-customer buying patterns and the efforts of our sales force and channel partners to meet or exceed their sales objectives, we have historically received a substantial portion of sales orders and generated a substantial portion of revenue during the last few weeks of each fiscal quarter. If expected revenue at the end of any fiscal quarter is delayed for any reason, including the failure of anticipated purchase orders to materialize (particularly for large enterprise end-customers with lengthy sales cycles), our logistics partners' inability to ship products prior to fiscal quarter-end to fulfill purchase orders received near the end of the fiscal quarter, our failure to manage inventory to meet demand, any failure of our systems related to order review and processing, or any delays in shipments based on trade compliance requirements (including new compliance requirements imposed by new or renegotiated trade agreements), revenue could fall below our expectations and the estimates of analysts for that quarter, which could adversely impact our business and operating results and cause a decline in the market price of our common stock.

Seasonality may cause fluctuations in our revenue.

We believe there are significant seasonal factors that may cause our second and fourth fiscal quarters to record greater revenue sequentially than our first and third fiscal quarters. We believe that this seasonality results from a number of factors, including:

- end-customers with a December 31 fiscal year-end choosing to spend remaining unused portions of their discretionary budgets before their fiscal year-end, which potentially results in a positive impact on our revenue in our second fiscal quarter;
- our sales compensation plans, which are typically structured around annual quotas and commission rate accelerators, which potentially results in a positive impact on our revenue in our fourth fiscal quarter;
- seasonal reductions in business activity during August in the United States, Europe and certain other regions, which potentially results in a negative impact on our first fiscal quarter revenue; and
- the timing of end-customer budget planning at the beginning of the calendar year, which can result in a delay in spending at the beginning of the calendar year potentially resulting in a negative impact on our revenue in our third fiscal quarter.

As we continue to grow, seasonal or cyclical variations in our operations may become more pronounced, and our business, operating results and financial position may be adversely affected.

If we are unable to hire, integrate, train, retain, and motivate qualified personnel and senior management, our business could suffer.

Our future success depends, in part, on our ability to continue to hire, integrate, train, and retain qualified and highly skilled personnel. We are substantially dependent on the continued service of our existing engineering personnel because of the complexity of our platforms. Additionally, any failure to hire, integrate, train, and adequately incentivize our sales personnel or the inability of our recently hired sales personnel to effectively ramp to target productivity levels could negatively impact our growth and operating margins. Competition for highly skilled personnel, particularly in engineering, is often intense, especially in the San Francisco Bay Area, where we have a substantial presence and need for such personnel. Additionally, potential changes in U.S. immigration and work authorization laws and regulations may make it difficult to renew or obtain visas for any highly skilled personnel that we have hired or are actively recruiting.

In addition, the industry in which we operate generally experiences high employee attrition. Although we have entered into employment offer letters with our key personnel, these agreements have no specific duration and constitute at-will employment. We do not maintain key person life insurance policies on any of our employees. The loss of one or more of our key employees, and any failure to have in place and execute an effective succession plan for key executives, could seriously harm our business. If we are unable to hire, integrate, train, or retain the qualified and highly skilled personnel required to fulfill our current or future needs, our business, financial condition, and operating results could be harmed.

Our future performance also depends on the continued services and continuing contributions of our senior management to execute on our business plan and to identify and pursue new opportunities and product innovations. The loss of services of senior management or the ineffective management of any leadership transitions, especially within our sales organization, could significantly delay or prevent the achievement of our development and strategic objectives, which could adversely affect our business, financial condition, and operating results.

Further, we believe that a critical contributor to our success and our ability to retain highly skilled personnel has been our corporate culture, which we believe fosters innovation, teamwork, passion for end-customers, focus on execution, and the facilitation of critical knowledge transfer and knowledge sharing. As we grow and change, we may find it difficult to maintain these important aspects of our corporate culture. Any failure to preserve our culture as we grow could limit our ability to innovate and could negatively affect our ability to retain and recruit personnel, continue to perform at current levels or execute on our business strategy.

If we are not successful in executing our strategy to increase sales of our products and subscriptions to new and existing medium and large enterprise end-customers, our operating results may suffer.

Our growth strategy is dependent, in part, upon increasing sales of our products, services, subscriptions and offerings to new and existing medium and large enterprise end-customers. Sales to these end-customers involve risks that may not be present, or that are present to a lesser extent, with sales to smaller entities. These risks include:

- competition from larger competitors, such as Cisco, Check Point, and Juniper, that traditionally target larger enterprises, service providers, and government entities and that may have pre-existing relationships or purchase commitments from those end-customers;
- increased purchasing power and leverage held by large end-customers in negotiating contractual arrangements with us;
- more stringent requirements in our worldwide support contracts, including stricter support response times and penalties for any failure to meet support requirements; and
- longer sales cycles, in some cases over 12 months, and the associated risk that substantial time and resources may be spent on a potential end-customer that elects not to purchase our products and subscriptions.

In addition, product purchases by large enterprises are frequently subject to budget constraints, multiple approvals, and unplanned administrative, processing, and other delays. Finally, large enterprises typically have longer implementation cycles, require greater product functionality and scalability and a broader range of services, demand that vendors take on a larger share of risks, sometimes require acceptance provisions that can lead to a delay in revenue recognition, and expect greater payment flexibility from vendors. All of these factors can add further risk to business conducted with these end-customers. If we fail to realize an expected sale from a large end-customer in a particular quarter or at all, our business, operating results, and financial condition could be materially and adversely affected.

We rely on revenue from subscription and support offerings, and because we recognize revenue from subscription and support over the term of the relevant service period, downturns or upturns in sales of these subscription and support offerings are not immediately reflected in full in our operating results.

Subscription and support revenue accounts for a significant portion of our revenue, comprising 69.9% of total revenue in the six months ended January 31, 2020 and 62.5% of total revenue in six months ended January 31, 2019. Sales of new or renewal subscription and support contracts may decline and fluctuate as a result of a number of factors, including end-customers' level of satisfaction with our products and subscriptions (including newly integrated products and services), the prices of our products and subscriptions, the prices of products and services offered by our competitors, and reductions in our end-customers' spending levels. If our sales of new or renewal subscription and support contracts decline, our total revenue and revenue growth rate may decline and our business will suffer. In addition, we recognize subscription and support revenue over the term of the relevant service period, which is typically one to five years. As a result, much of the subscription and support revenue we report each fiscal quarter is the recognition of deferred revenue from subscription and support contracts entered into during previous fiscal quarters. Consequently, a decline in new or renewed subscription or support contracts in any one fiscal quarter will not be fully or immediately reflected in revenue in that fiscal quarter but will negatively affect our revenue in future fiscal quarters. Also, it is difficult for us to rapidly increase our subscription and support revenue through additional subscription and support sales in any period, as revenue from new and renewal subscription and support contracts must be recognized over the applicable service period.

Defects, errors, or vulnerabilities in our products, subscriptions, or support offerings, the failure of our products or subscriptions to block a virus or prevent a security breach, misuse of our products, or risks of product liability claims could harm our reputation and adversely impact our operating results.

Because our products and subscriptions are complex, they have contained and may contain design or manufacturing defects or errors that are not detected until after their commercial release and deployment by our end-customers. For example, from time to time, certain of our end-customers have reported defects in our products related to performance, scalability, and compatibility. Additionally, defects may cause our products or subscriptions to be vulnerable to security attacks, cause them to fail to help secure networks, or temporarily interrupt end-customers' networking traffic. Because the techniques used by computer hackers to access or sabotage networks change frequently and generally are not recognized until launched against a target, we may be unable to anticipate these techniques and provide a solution in time to protect our end-customers' networks. Furthermore, as a well-known provider of security solutions, our networks, products, including cloud-based technology, and subscriptions could be targeted by attacks specifically designed to disrupt our business and harm our reputation. In addition, defects or errors in our subscription updates or our products could result in a failure of our subscriptions to effectively update end-customers' hardware and cloud-based products. Our data centers and networks may experience technical failures and downtime, may fail to distribute appropriate updates, or may fail to meet the increased requirements of a growing installed end-customer base, any of which could temporarily or permanently expose our end-customers' networks, leaving their networks unprotected against the latest security threats. Moreover, our products must interoperate with our end-customers' existing infrastructure, which often have different specifications, utilize multiple protocol standards, deploy

products from multiple vendors, and contain multiple generations of products that have been added over time. As a result, when problems occur in a network, it may be difficult to identify the sources of these problems.

The occurrence of any such problem in our products and subscriptions, whether real or perceived, could result in:

- expenditure of significant financial and product development resources in efforts to analyze, correct, eliminate, or work-around errors or defects or to address and eliminate vulnerabilities;
- loss of existing or potential end-customers or channel partners;
- delayed or lost revenue;
- delay or failure to attain market acceptance;
- an increase in warranty claims compared with our historical experience, or an increased cost of servicing warranty claims, either of which would adversely affect our gross margins; and
- litigation, regulatory inquiries, or investigations, each of which may be costly and harm our reputation.

Further, our products and subscriptions may be misused by end-customers or third parties that obtain access to our products and subscriptions. For example, our products and subscriptions could be used to censor private access to certain information on the Internet. Such use of our products and subscriptions for censorship could result in negative press coverage and negatively affect our reputation.

The limitation of liability provisions in our standard terms and conditions of sale may not fully or effectively protect us from claims as a result of federal, state, or local laws or ordinances, or unfavorable judicial decisions in the United States or other countries. The sale and support of our products and subscriptions also entails the risk of product liability claims. Although we may be indemnified by our third-party manufacturers for product liability claims arising out of manufacturing defects, because we control the design of our products and subscriptions, we may not be indemnified for product liability claims arising out of design defects. We maintain insurance to protect against certain claims associated with the use of our products and subscriptions, but our insurance coverage may not adequately cover any claim asserted against us. In addition, even claims that ultimately are unsuccessful could result in our expenditure of funds in litigation, divert management's time and other resources, and harm our reputation.

False detection of applications, viruses, spyware, vulnerability exploits, data patterns, or URL categories could adversely affect our business.

Our classifications of application type, virus, spyware, vulnerability exploits, data, or uniform resource locator ("URL") categories may falsely detect, report and act on applications, content, or threats that do not actually exist. This risk is heightened by the inclusion of a "heuristics" feature in our products and subscriptions, which attempts to identify applications and other threats not based on any known signatures but based on characteristics or anomalies which indicate that a particular item may be a threat. These false positives may impair the perceived reliability of our products and subscriptions and may therefore adversely impact market acceptance of our products and subscriptions. If our products and subscriptions restrict important files or applications based on falsely identifying them as malware or some other item that should be restricted, this could adversely affect end-customers' systems and cause material system failures. Any such false identification of important files or applications could result in damage to our reputation, negative publicity, loss of channel partners, end-customers and sales, increased costs to remedy any problem, and costly litigation.

We rely on our channel partners to sell substantially all of our products, including subscriptions and support, and if these channel partners fail to perform, our ability to sell and distribute our products and subscriptions will be limited, and our operating results will be harmed.

Substantially all of our revenue is generated by sales through our channel partners, including distributors and resellers. We provide our channel partners with specific training and programs to assist them in selling our products, including subscriptions and support offerings, but there can be no assurance that these steps will be utilized or effective. In addition, our channel partners may be unsuccessful in marketing, selling, and supporting our products and subscriptions. We may not be able to incentivize these channel partners to sell our products and subscriptions to end-customers and, in particular, to large enterprises. These channel partners may also have incentives to promote our competitors' products and may devote more resources to the marketing, sales, and support of competitive products. Our agreements with our channel partners may generally be terminated for any reason by either party with advance notice prior to each annual renewal date. We cannot be certain that we will retain these channel partners or that we will be able to secure additional or replacement channel partners. In addition, any new channel partner requires extensive training and may take several months or more to achieve productivity. Our channel partner sales structure could subject us to lawsuits, potential liability, and reputational harm if, for example, any of our channel partners misrepresent the functionality of our products or subscriptions to end-customers or violate laws or our corporate policies. If we fail to effectively manage our sales channels or channel partners, our ability to sell our products and subscriptions and operating results will be harmed.

If we do not accurately predict, prepare for, and respond promptly to rapidly evolving technological and market developments and successfully manage product and subscription introductions and transitions to meet changing end-customer needs in the enterprise security market, our competitive position and prospects will be harmed.

The enterprise security market has grown quickly and is expected to continue to evolve rapidly. Moreover, many of our end-customers operate in markets characterized by rapidly changing technologies and business plans, which require them to add numerous network access points and adapt increasingly complex enterprise networks, incorporating a variety of hardware, software applications, operating systems, and networking protocols. We must continually change our products and expand our business strategy in response to changes in network infrastructure requirements, including the expanding use of cloud computing. For example, organizations are moving portions of their data to be managed by third parties, primarily infrastructure, platform and application service providers, and may rely on such providers' internal security measures. In 2019, we announced our new cloud security offerings, for securing access to the cloud (Prisma), and our security offerings for securing the future of security operations (Cortex). While we have historically been successful in developing, acquiring, and marketing new products and product enhancements that respond to technological change and evolving industry standards, we may not be able to continue to do so and there can be no assurance that our new or future offerings will be successful or will achieve widespread market acceptance. If we fail to accurately predict end-customers' changing needs and emerging technological trends in the enterprise security industry, including in the areas of mobility, virtualization, cloud computing, and software defined networks ("SDN"), our business could be harmed.

The technology in our platforms is especially complex because it needs to effectively identify and respond to new and increasingly sophisticated methods of attack, while minimizing the impact on network performance. Additionally, some of our new platform features and related platform enhancements may require us to develop new hardware architectures that involve complex, expensive, and time-consuming research and development processes. The development of our platforms is difficult and the timetable for commercial release and availability is uncertain as there can be long time periods between releases and availability of new platform features. If we experience unanticipated delays in the availability of new products, platform features, and subscriptions, and fail to meet customer expectations for such availability, our competitive position and business prospects will be harmed.

Additionally, we must commit significant resources to developing new platform features and new cloud security, AI/analytics and other offerings before knowing whether our investments will result in products, subscriptions, and platform features the market will accept. The success of new platform features depends on several factors, including appropriate new product definition, differentiation of new products, subscriptions, and platform features from those of our competitors, and market acceptance of these products, services and platform features. Moreover, successful new product introduction and transition depends on a number of factors including, our ability to manage the risks associated with new product production ramp-up issues, the availability of application software for new products, the effective management of purchase commitments and inventory, the availability of products in appropriate quantities and costs to meet anticipated demand, and the risk that new products may have quality or other defects or deficiencies, especially in the early stages of introduction. There can be no assurance that we will successfully identify opportunities for new products and subscriptions, develop and bring new products and subscriptions to market in a timely manner, or achieve market acceptance of our products and subscriptions, or that products, subscriptions, and technologies developed by others will not render our products, subscriptions, or technologies obsolete or noncompetitive.

Our current research and development efforts may not produce successful products, subscriptions, or platform features that result in significant revenue, cost savings or other benefits in the near future, if at all.

Developing our products, subscriptions, platform features, and related enhancements is expensive. Our investments in research and development may not result in significant design improvements, marketable products, subscriptions, or platform features, or may result in products, subscriptions, or platform features that are more expensive than anticipated. Additionally, we may not achieve the cost savings or the anticipated performance improvements we expect, and we may take longer to generate revenue, or generate less revenue, than we anticipate. Our future plans include significant investments in research and development and related product and subscription opportunities. We believe that we must continue to dedicate a significant amount of resources to our research and development efforts to maintain our competitive position. However, we may not receive significant revenue from these investments in the near future, if at all, or these investments may not yield the expected benefits, either of which could adversely affect our business and operating results.

We may acquire other businesses, which could require significant management attention, disrupt our business, dilute stockholder value, and adversely affect our operating results.

As part of our business strategy, we may acquire or make investments in complementary companies, products, or technologies. For example, in February 2017, we acquired LightCyber Ltd. ("LightCyber"), in March 2018, we acquired Evident.io, Inc., in April 2018, we acquired Cyber Secdo Ltd. ("Secdo"), in October 2018, we acquired RedLock Inc., in March 2019, we acquired Demisto, Inc., in June 2019, we acquired PureSec Ltd. ("PureSec"), in July 2019, we acquired Twistlock Ltd. ("Twistlock"), in September 2019, we acquired Zingbox, and in December 2019 we acquired Aporeto. The identification of suitable acquisition candidates is difficult, and we may not be able to complete such acquisitions on favorable terms, if at all. If we do complete future acquisitions, we may not ultimately strengthen our competitive position or achieve our goals and business strategy; we may be subject

to claims or liabilities assumed from an acquired company, product, or technology; acquisitions we complete could be viewed negatively by our end-customers, investors, and securities analysts; and we may incur costs and expenses necessary to address an acquired company's failure to comply with laws and governmental rules and regulations. Additionally, we may be subject to litigation or other claims in connection with the acquired company, including claims from terminated employees, customers, former stockholders or other third parties, which may differ from or be more significant than the risks our business faces. If we are unsuccessful at integrating past or future acquisitions in a timely manner, or the technologies and operations associated with such acquisitions, into our company, the revenue and operating results of the combined company could be adversely affected. Any integration process may require significant time and resources, which may disrupt our ongoing business and divert management's attention, and we may not be able to manage the integration process successfully or in a timely manner. We may not successfully evaluate or utilize the acquired technology or personnel, realize anticipated synergies from the acquisition, or accurately forecast the financial impact of an acquisition transaction and integration of such acquisition, including accounting charges and any potential impairment of goodwill and intangible assets recognized in connection with such acquisitions. We may have to pay cash, incur debt, or issue equity or equity-linked securities to pay for any future acquisitions, each of which could adversely affect our financial condition or the market price of our common stock. Furthermore, the sale of equity or issuance of equity-linked debt to finance any future acquisitions could result in dilution to our stockholders. See the risk factors entitled "Our failure to raise additional capital or generate the significant capital necessary to expand our operations and invest in new products and subscriptions could reduce our ability to compete and could harm our business" and "The issuance of additional stock in connection with financings, acquisitions, investments, our stock incentive plans, the conversion of our 2023 Notes or exercise of the related Warrants to our Notes, or otherwise will dilute all other stockholders." The occurrence of any of these risks could harm our business, operating results, and financial condition.

Because we depend on manufacturing partners to build and ship our products, we are susceptible to manufacturing and logistics delays and pricing fluctuations that could prevent us from shipping customer orders on time, if at all, or on a cost-effective basis, which may result in the loss of sales and end-customers.

We depend on manufacturing partners, primarily Flextronics International, Ltd. ("Flex"), our electronics manufacturing service provider ("EMS provider"), as our sole source manufacturers for our product lines. Our reliance on these manufacturing partners reduces our control over the manufacturing process and exposes us to risks, including reduced control over quality assurance, product costs, product supply, timing and transportation risk. Our products are manufactured by our manufacturing partners at facilities located in the United States. Some of the components in our products are sourced either through Flex or directly by us from component suppliers outside the United States. The portion of our products that are sourced outside the United States may subject us to additional logistical risks or risks associated with complying with local rules and regulations in foreign countries. Significant changes to existing international trade agreements could lead to sourcing or logistics disruption resulting from import delays or the imposition of increased tariffs on our sourcing partners. For example, the United States and Chinese governments have each enacted, and discussed additional, import tariffs. These tariffs, depending on their ultimate scope and how they are implemented, could negatively impact our business by increasing our costs. For example, some components that we import for final manufacturing in the United States have been impacted by these recent tariffs. As a result, our costs have increased and we have raised, and may be required to further raise, prices on our hardware products. Each of these factors could severely impair our ability to fulfill orders.

In addition, we are subject to requirements under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the "Dodd-Frank Act") to diligence, disclose, and report whether or not our products contain minerals originating from the Democratic Republic of the Congo and adjoining countries, or conflict minerals. Although the SEC has provided guidance with respect to a portion of the conflict minerals filing requirements that may somewhat reduce our reporting practices, we have incurred and expect to incur additional costs to comply with these disclosure requirements, including costs related to determining the source of any of the relevant minerals and metals used in our products. These requirements could adversely affect the sourcing, availability, and pricing of minerals used in the manufacture of semiconductor devices or other components used in our products. We may also encounter end-customers who require that all of the components of our products be certified as conflict free. If we are not able to meet this requirement, such end-customers may choose not to purchase our products.

Our manufacturing partners typically fulfill our supply requirements on the basis of individual purchase orders. We do not have long-term contracts with these manufacturers that guarantee capacity, the continuation of particular pricing terms, or the extension of credit limits. Accordingly, they are not obligated to continue to fulfill our supply requirements and the prices we pay for manufacturing services could be increased on short notice. Our contract with Flex permits them to terminate the agreement for their convenience, subject to prior notice requirements. If we are required to change manufacturing partners, our ability to meet our scheduled product deliveries to our end-customers could be adversely affected, which could cause the loss of sales to existing or potential end-customers, delayed revenue or an increase in our costs which could adversely affect our gross margins. Any production interruptions for any reason, such as a natural disaster, epidemic, capacity shortages, or quality problems, at one of our manufacturing partners would negatively affect sales of our product lines manufactured by that manufacturing partner and adversely affect our business and operating results.

Managing the supply of our products and product components is complex. Insufficient supply and inventory may result in lost sales opportunities or delayed revenue, while excess inventory may harm our gross margins.

Our manufacturing partners procure components and build our products based on our forecasts, and we generally do not hold inventory for a prolonged period of time. These forecasts are based on estimates of future demand for our products, which are in turn based on historical trends and analyses from our sales and product management organizations, adjusted for overall market conditions. In order to reduce manufacturing lead times and plan for adequate component supply, from time to time we may issue forecasts for components and products that are non-cancelable and non-returnable.

Our inventory management systems and related supply chain visibility tools may be inadequate to enable us to forecast accurately and effectively manage supply of our products and product components. If we ultimately determine that we have excess supply, we may have to reduce our prices and write-down inventory, which in turn could result in lower gross margins. If our actual component usage and product demand are lower than the forecast we provide to our manufacturing partners, we accrue for losses on manufacturing commitments in excess of forecasted demand. Alternatively, insufficient supply levels may lead to shortages that result in delayed product revenue or loss of sales opportunities altogether as potential end-customers turn to competitors' products that are readily available. If we are unable to effectively manage our supply and inventory, our operating results could be adversely affected.

Because some of the key components in our products come from limited sources of supply, we are susceptible to supply shortages or supply changes, which could disrupt or delay our scheduled product deliveries to our end-customers and may result in the loss of sales and end-customers.

Our products rely on key components, including integrated circuit components, which our manufacturing partners purchase on our behalf from a limited number of component suppliers, including sole source providers. The manufacturing operations of some of our component suppliers are geographically concentrated in Asia and elsewhere, which makes our supply chain vulnerable to regional disruptions, such as natural disasters, fire, political instability, civil unrest, a power outage, or a localized health risk, such as the coronavirus, and as a result could impair the volume of components that we are able to obtain.

Further, we do not have volume purchase contracts with any of our component suppliers, and they could cease selling to us at any time. If we are unable to obtain a sufficient quantity of these components in a timely manner for any reason, sales of our products could be delayed or halted or we could be forced to expedite shipment of such components or our products at dramatically increased costs. Our component suppliers also change their selling prices frequently in response to market trends, including industry-wide increases in demand, and because we do not have volume purchase contracts with these component suppliers, we are susceptible to price fluctuations related to raw materials and components and may not be able to adjust our prices accordingly. Additionally, poor quality in any of the sole-sourced components in our products could result in lost sales or sales opportunities.

If we are unable to obtain a sufficient volume of the necessary components for our products on commercially reasonable terms or the quality of the components do not meet our requirements, we could also be forced to redesign our products and qualify new components from alternate component suppliers. The resulting stoppage or delay in selling our products and the expense of redesigning our products could result in lost sales opportunities and damage to customer relationships, which would adversely affect our business and operating results.

The sales prices of our products and subscriptions may decrease, which may reduce our gross profits and adversely impact our financial results.

The sales prices for our products and subscriptions may decline for a variety of reasons, including competitive pricing pressures, discounts, a change in our mix of products and subscriptions, anticipation of the introduction of new products or subscriptions, or promotional programs. Competition continues to increase in the market segments in which we participate, and we expect competition to further increase in the future, thereby leading to increased pricing pressures. Larger competitors with more diverse product and service offerings may reduce the price of products or subscriptions that compete with ours or may bundle them with other products and subscriptions. Additionally, although we price our products and subscriptions worldwide in U.S. dollars, currency fluctuations in certain countries and regions may negatively impact actual prices that channel partners and end-customers are willing to pay in those countries and regions. Furthermore, we anticipate that the sales prices and gross profits for our products will decrease over product life cycles. We cannot guarantee that we will be successful in developing and introducing new offerings with enhanced functionality on a timely basis, or that our product and subscription offerings, if introduced, will enable us to maintain our prices and gross profits at levels that will allow us to achieve and maintain profitability.

We generate a significant amount of revenue from sales to distributors, resellers, and end-customers outside of the United States, and we are therefore subject to a number of risks associated with international sales and operations.

We have a limited history of marketing, selling, and supporting our products and subscriptions internationally. We may experience difficulties in recruiting, training, managing, and retaining an international staff, and specifically staff related to sales management and sales personnel. We also may not be able to maintain successful strategic distributor relationships internationally or recruit additional companies to enter into strategic distributor relationships. Business practices in the international markets that we

serve may differ from those in the United States and may require us in the future to include terms other than our standard terms related to payment, warranties, or performance obligations in end-customer contracts.

Additionally, our international sales and operations are subject to a number of risks, including the following:

- political, economic and social uncertainty around the world, macroeconomic challenges in Europe, terrorist activities, and continued hostilities in the Middle East;
- greater difficulty in enforcing contracts and accounts receivable collection and longer collection periods;
- the uncertainty of protection for intellectual property rights in some countries;
- greater risk of unexpected changes in foreign and domestic regulatory practices, tariffs, and tax laws and treaties, including regulatory and trade policy changes adopted by the current administration or foreign countries in response to regulatory changes adopted by the current administration;
- risks associated with trade restrictions and foreign legal requirements, including the importation, certification, and localization of our products required in foreign countries;
- greater risk of a failure of foreign employees, channel partners, distributors, and resellers to comply with both U.S. and foreign laws, including antitrust regulations, the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act, U.S. or foreign sanctions regimes and export or import control laws, and any trade regulations ensuring fair trade practices, which non-compliance could include increased costs;
- heightened risk of unfair or corrupt business practices in certain geographies and of improper or fraudulent sales arrangements;
- increased expenses incurred in establishing and maintaining office space and equipment for our international operations;
- management communication and integration problems resulting from cultural and geographic dispersion; and
- fluctuations in exchange rates between the U.S. dollar and foreign currencies in markets where we do business and related impact on sales cycles.

These and other factors could harm our future international revenues and, consequently, materially impact our business, operating results, and financial condition. The expansion of our existing international operations and entry into additional international markets will require significant management attention and financial resources. Our failure to successfully manage our international operations and the associated risks effectively could limit the future growth of our business.

Further, we are subject to risks associated with changes in economic and political conditions in countries in which we operate or sell our products and subscriptions. For instance, Brexit creates an uncertain political and economic environment in the U.K. and across E.U. member states for the foreseeable future, including during the transition period connected to Brexit. Any agreements arising out of negotiations which the U.K. government makes to retain access to E.U. markets may lead to greater restrictions on the free movement of goods, services, people and capital between the U.K. and the remaining E.U. member states. Our financial condition and operating results in the U.K. and the E.U. may be impacted by such uncertainty with potential disruptions to our relationships with existing and future customers, suppliers and employees all possibly having a material adverse impact on our business, prospects, financial condition and/or operating results.

We are exposed to fluctuations in currency exchange rates, which could negatively affect our financial condition and operating results.

Our sales contracts are primarily denominated in U.S. dollars, and therefore, substantially all of our revenue is not subject to foreign currency risk. However, including as a result of concerns regarding the impact of Brexit, there has been, and may continue to be, significant volatility in global stock markets and foreign currency exchange rates that result in the strengthening of the U.S. dollar against foreign currencies in which we conduct business. The strengthening of the U.S. dollar increases the real cost of our platforms to our end-customers outside of the United States and may lead to delays in the purchase of our products, subscriptions, and support, and the lengthening of our sales cycle. If the U.S. dollar continues to strengthen, this could adversely affect our financial condition and operating results. In addition, increased international sales in the future, including through our channel partners and other partnerships, may result in greater foreign currency denominated sales, increasing our foreign currency risk.

Our operating expenses incurred outside the United States and denominated in foreign currencies are increasing and are subject to fluctuations due to changes in foreign currency exchange rates. If we are not able to successfully hedge against the risks associated with foreign currency fluctuations, our financial condition and operating results could be adversely affected. We have entered into forward contracts in an effort to reduce our foreign currency exchange exposure related to our foreign currency denominated expenditures. As of January 31, 2020, the total notional amount of our outstanding foreign currency forward contracts was \$186.1 million. For more information on our hedging transactions, refer to Note 5. Derivative Instruments in Part I, Item 1 of this Quarterly Report on Form 10-Q. The effectiveness of our existing hedging transactions and the availability and effectiveness of any

hedging transactions we may decide to enter into in the future may be limited and we may not be able to successfully hedge our exposure, which could adversely affect our financial condition and operating results.

A small number of channel partners represent a large percentage of our revenue and gross accounts receivable. We are exposed to the credit and liquidity risk of some of our channel partners and to credit exposure in weakened markets, which could result in material losses.

For the six months ended January 31, 2020, four distributors represented 77% of our total revenue, and as of January 31, 2020, four distributors represented 61% of our gross accounts receivable. Most of our sales to our channel partners are made on an open credit basis. Although we have programs in place that are designed to monitor and mitigate these risks, we cannot guarantee these programs will be effective in reducing our credit risks, especially as we expand our business internationally. If we are unable to adequately control these risks, our business, operating results, and financial condition could be harmed.

A portion of our revenue is generated by sales to government entities, which are subject to a number of challenges and risks.

Sales to government entities are subject to a number of risks. Selling to government entities can be highly competitive, expensive, and time-consuming, often requiring significant upfront time and expense without any assurance that these efforts will generate a sale. The substantial majority of our sales to date to government entities have been made indirectly through our channel partners. Government certification requirements for products and subscriptions like ours may change, thereby restricting our ability to sell into the federal government sector until we have attained the revised certification. If our products and subscriptions are late in achieving or fail to achieve compliance with these certifications and standards, or our competitors achieve compliance with these certifications and standards, we may be disqualified from selling our products and subscriptions to such governmental entity, or be at a competitive disadvantage, which would harm our business, operating results, and financial condition. Government demand and payment for our products and subscriptions may be impacted by government shutdowns, public sector budgetary cycles, contracting requirements, and funding authorizations, with funding reductions or delays adversely affecting public sector demand for our products and subscriptions. Government entities may have statutory, contractual, or other legal rights to terminate contracts with our distributors and resellers for convenience or due to a default, and any such termination may adversely impact our future operating results. Governments routinely investigate and audit government contractors' administrative processes, and any unfavorable audit could result in the government refusing to continue buying our products and subscriptions, a reduction of revenue, or fines or civil or criminal liability if the audit uncovers improper or illegal activities, which could adversely impact our operating results in a material way. Additionally, the U.S. government may require certain of the products that it purchases to be manufactured in the United States and other relatively high cost manufacturing locations, and we may not manufacture all products in locations that meet such requirements, affecting our ability to sell these products and subscriptions to the U.S. government.

Our ability to sell our products and subscriptions is dependent on the quality of our technical support services and those of our channel partners, and the failure to offer high-quality technical support services could have a material adverse effect on our end-customers' satisfaction with our products and subscriptions, our sales, and our operating results.

After our products and subscriptions are deployed within our end-customers' networks, our end-customers depend on our technical support services, as well as the support of our channel partners, to resolve any issues relating to our products. Our channel partners often provide similar technical support for third parties' products and may therefore have fewer resources to dedicate to the support of our products and subscriptions. If we or our channel partners do not effectively assist our end-customers in deploying our products and subscriptions, succeed in helping our end-customers quickly resolve post-deployment issues, or provide effective ongoing support, our ability to sell additional products and subscriptions to existing end-customers would be adversely affected and our reputation with potential end-customers could be damaged. Many larger enterprise, service provider, and government entity end-customers have more complex networks and require higher levels of support than smaller end-customers. If we or our channel partners fail to meet the requirements of these larger end-customers, it may be more difficult to execute on our strategy to increase our coverage with larger end-customers. Additionally, if our channel partners do not effectively provide support to the satisfaction of our end-customers, we may be required to provide direct support to such end-customers, which would require us to hire additional personnel and to invest in additional resources. It can take several months to recruit, hire, and train qualified technical support employees. We may not be able to hire such resources fast enough to keep up with unexpected demand, particularly if the sales of our products exceed our internal forecasts. As a result, our ability, and the ability of our channel partners to provide adequate and timely support to our end-customers will be negatively impacted, and our end-customers' satisfaction with our products and subscriptions will be adversely affected. Additionally, to the extent that we may need to rely on our sales engineers to provide post-sales support while we are ramping our support resources, our sales productivity will be negatively impacted, which would harm our revenues. Our failure or our channel partners' failure to provide and maintain high-quality support services could have a material adverse effect on our business, financial condition, and operating results.

Claims by others that we infringe their proprietary technology or other rights could harm our business.

Companies in the enterprise security industry own large numbers of patents, copyrights, trademarks, domain names, and trade secrets and frequently enter into litigation based on allegations of infringement, misappropriation, or other violations of intellectual

property or other rights. Third parties have asserted and may in the future assert claims of infringement of intellectual property rights against us. For example, in December 2011, Juniper, one of our competitors, filed a lawsuit against us alleging patent infringement. In September 2013, we filed a lawsuit against Juniper alleging patent infringement. In May 2014, we entered into a Settlement, Release and Cross-License Agreement with Juniper to resolve all pending disputes between Juniper and us, including dismissal of all pending litigation.

Third parties may also assert such claims against our end-customers or channel partners, whom our standard license and other agreements obligate us to indemnify against claims that our products and subscriptions infringe the intellectual property rights of third parties. In addition, to the extent we hire personnel from competitors, we may be subject to allegations that they have been improperly solicited, that they have divulged proprietary or other confidential information, or that their former employers own their inventions or other work product. Furthermore, we may be unaware of the intellectual property rights of others that may cover some or all of our technology or products and subscriptions. As the number of products and competitors in our market increases and overlaps occur, infringement claims may increase. While we intend to increase the size of our patent portfolio, our competitors and others may now and in the future have significantly larger and more mature patent portfolios than we have. In addition, litigation may involve patent holding companies or other adverse patent owners who have no relevant product revenue and against whom our own patents may therefore provide little or no deterrence or protection. In addition, we have not registered our trademarks in all of our geographic markets and failure to secure those registrations could adversely affect our ability to enforce and defend our trademark rights. Any claim of infringement by a third party, even those without merit, could cause us to incur substantial costs defending against the claim, could distract our management from our business, and could require us to cease use of such intellectual property. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. A successful claimant could secure a judgment or we may agree to a settlement that prevents us from distributing certain products or performing certain services or that requires us to pay substantial damages, royalties, or other fees. Any of these events could seriously harm our business, financial condition, and operating results.

Our proprietary rights may be difficult to enforce or protect, which could enable others to copy or use aspects of our products or subscriptions without compensating us.

We rely and expect to continue to rely on a combination of confidentiality and license agreements with our employees, consultants, and third parties with whom we have relationships, as well as trademark, copyright, patent, and trade secret protection laws, to protect our proprietary rights. We have filed various applications for certain aspects of our intellectual property. Valid patents may not issue from our pending applications, and the claims eventually allowed on any patents may not be sufficiently broad to protect our technology or products and subscriptions. We cannot be certain that we were the first to make the inventions claimed in our pending patent applications or that we were the first to file for patent protection, which could prevent our patent applications from issuing as patents or invalidate our patents following issuance. Additionally, the process of obtaining patent protection is expensive and time-consuming, and we may not be able to prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. Any issued patents may be challenged, invalidated or circumvented, and any rights granted under these patents may not actually provide adequate defensive protection or competitive advantages to us. Additional uncertainty may result from changes to patent-related laws and court rulings in the United States and other jurisdictions. As a result, we may not be able to obtain adequate patent protection or effectively enforce any issued patents.

Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy aspects of our products or subscriptions or obtain and use information that we regard as proprietary. We generally enter into confidentiality or license agreements with our employees, consultants, vendors, and end-customers, and generally limit access to and distribution of our proprietary information. However, we cannot be certain that we have entered into such agreements with all parties who may have or have had access to our confidential information or that the agreements we have entered into will not be breached. We cannot guarantee that any of the measures we have taken will prevent misappropriation of our technology. Because we may be an attractive target for computer hackers, we may have a greater risk of unauthorized access to, and misappropriation of, our proprietary information. In addition, the laws of some foreign countries do not protect our proprietary rights to as great an extent as the laws of the United States, and many foreign countries do not enforce these laws as diligently as government agencies and private parties in the United States. From time to time, we may need to take legal action to enforce our patents and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could negatively affect our business, operating results, and financial condition. Attempts to enforce our rights against third parties could also provoke these third parties to assert their own intellectual property or other rights against us, or result in a holding that invalidates or narrows the scope of our rights, in whole or in part. If we are unable to protect our proprietary rights (including aspects of our software and products protected other than by patent rights), we may find ourselves at a competitive disadvantage to others who need not incur the additional expense, time, and effort required to create the innovative products that have enabled us to be successful to date. Any of these events would have a material adverse effect on our business, financial condition, and operating results.

Our use of open source software in our products and subscriptions could negatively affect our ability to sell our products and subscriptions and subject us to possible litigation.

Our products and subscriptions contain software modules licensed to us by third-party authors under “open source” licenses. Some open source licenses contain requirements that we make available applicable source code for modifications or derivative works we create based upon the type of open source software we use. If we combine our proprietary software with open source software in a certain manner, we could, under certain open source licenses, be required to release the source code of our proprietary software to the public. This would allow our competitors to create similar products or subscriptions with lower development effort and time and ultimately could result in a loss of product sales for us.

Although we monitor our use of open source software to avoid subjecting our products and subscriptions to conditions we do not intend, the terms of many open source licenses have not been interpreted by United States courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our products and subscriptions. From time to time, there have been claims against companies that distribute or use open source software in their products and subscriptions, asserting that open source software infringes the claimants’ intellectual property rights. We could be subject to suits by parties claiming infringement of intellectual property rights in what we believe to be licensed open source software. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue offering our products and subscriptions on terms that are not economically feasible, to reengineer our products and subscriptions, to discontinue the sale of our products and subscriptions if reengineering could not be accomplished on a timely basis, or to make generally available, in source code form, our proprietary code, any of which could adversely affect our business, operating results, and financial condition.

In addition to risks related to license requirements, usage of open source software can lead to greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or assurance of title or controls on origin of the software. In addition, many of the risks associated with usage of open source software, such as the lack of warranties or assurances of title, cannot be eliminated, and could, if not properly addressed, negatively affect our business. We have established processes to help alleviate these risks, including a review process for screening requests from our development organizations for the use of open source software, but we cannot be sure that our processes for controlling our use of open source software in our products and subscriptions will be effective.

We license technology from third parties, and our inability to maintain those licenses could harm our business.

We incorporate technology that we license from third parties, including software, into our products and subscriptions. We cannot be certain that our licensors are not infringing the intellectual property rights of third parties or that our licensors have sufficient rights to the licensed intellectual property in all jurisdictions in which we may sell our products and subscriptions. In addition, some licenses may be non-exclusive, and therefore our competitors may have access to the same technology licensed to us. Some of our agreements with our licensors may be terminated for convenience by them. We may also be subject to additional fees or be required to obtain new licenses if any of our licensors allege that we have not properly paid for such licenses or that we have improperly used the technologies under such licenses, and such licenses may not be available on terms acceptable to us or at all. If we are unable to continue to license any of this technology because of intellectual property infringement claims brought by third parties against our licensors or against us, or claims against us by our licensors, or if we are unable to continue our license agreements or enter into new licenses on commercially reasonable terms, our ability to develop and sell products and subscriptions containing such technology would be severely limited, and our business could be harmed. Additionally, if we are unable to license necessary technology from third parties, we may be forced to acquire or develop alternative technology, which we may be unable to do in a commercially feasible manner or at all, and we may be required to use alternative technology of lower quality or performance standards. This would limit and delay our ability to offer new or competitive products and subscriptions and increase our costs of production. As a result, our margins, market share, and operating results could be significantly harmed.

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

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

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

Our failure to adequately protect personal information could have a material adverse effect on our business.

A wide variety of provincial, state, national, and international laws and regulations apply to the collection, use, retention, protection, disclosure, transfer, and other processing of personal data. These data protection and privacy-related laws and regulations are evolving and being tested in courts and may result in ever-increasing regulatory and public scrutiny as well as escalating levels of enforcement and sanctions. Further, the interpretation and application of foreign laws and regulations in many cases is uncertain, and our legal and regulatory obligations in foreign jurisdictions are subject to frequent and unexpected changes, including the potential for various regulatory or other governmental bodies to enact new or additional laws or regulations, to issue rulings that invalidate prior laws or regulations, or to increase penalties significantly.

For example, the E.U. General Data Protection Regulation (“GDPR”), which became effective in May 2018, imposes more stringent data protection requirements, and provides for greater penalties for noncompliance, than E.U. laws that previously applied. The GDPR requires, among other things, that personal data only be transferred outside of the E.U. to certain jurisdictions, including the United States, if steps are taken to legitimize those data transfers. We rely on the E.U.-U.S. and Swiss-U.S. Privacy Shield programs, and the use of model contractual clauses approved by the E.U. Commission, to legitimize these transfers. Both the E.U.-U.S. Privacy Shield and these model contractual clauses have been subject to legal challenge, however, and it is unclear what effect these challenges will have and whether the means we presently use will continue as appropriate means for us to legitimize personal data transfers from the E.U. or Switzerland.

In the U.K., a Data Protection Act that substantially implements the GDPR also became law in May 2018. It remains unclear, however, how U.K. data protection laws or regulations will develop in the medium to longer term and how data transfers to and from the United Kingdom will be regulated after Brexit. Additionally, the California Consumer Privacy Act (“CCPA”) recently went into effect on January 1, 2020 and requires, among other things, covered companies to provide new disclosures to California consumers, and afford such consumers new abilities to opt-out of certain sales of personal information, and also affords a private right of action to individuals affected by a data breach, if the breach was caused by a lack of reasonable security. In addition, regulations by the California Attorney General are currently in draft proposal. It remains unclear what, if any, additional modifications will be made to this legislation or how it will be interpreted. The effects of the CCPA potentially are significant, however, and may require us to modify our data processing practices and policies and to incur substantial costs and expenses for compliance. We may also from time to time be subject to, or face assertions that we are subject to, additional obligations relating to personal data by contract or due to assertions that self-regulatory obligations or industry standards apply to our practices. Other states have also expanded their data protection laws. Additionally, the Federal Trade Commission and many state attorneys general are interpreting federal and state consumer protection laws to impose standards for the online collection, use, dissemination, and security of data. Further, we may be or become subject to data localization laws mandating that data collected in a foreign country be processed and stored within that country. Each of these privacy, security, and data protection laws and regulations, and any other such changes or new laws or regulations, could impose significant limitations, or require changes to our business model or practices or growth strategy, which may increase our compliance expenses and make our business more costly or less efficient to conduct.

Our actual or perceived failure to comply with applicable laws and regulations or other obligations to which we are now or which we may be subject relating to personal data, or to protect personal data from unauthorized acquisition, use or other processing, could result in consequences such as enforcement actions and regulatory investigations against us, fines, public censure, claims for damages by end-customers and other affected individuals, damage to our reputation and loss of goodwill (both in relation to existing end-customers and prospective end-customers), any of which could have a material adverse effect on our operations, financial performance, and business. Evolving and changing definitions of personal data and personal information, within the E.U., the United States, and elsewhere, especially relating to classification of Internet Protocol (“IP”) addresses, machine identification, location data, and other information, may limit or inhibit our ability to operate or expand our business, including limiting strategic partnerships that may involve the sharing or uses of data, and may require significant expenditures and efforts in order to comply. Even the perception of privacy, data protection or information security concerns, whether or not valid, may harm our reputation and inhibit adoption of our products and subscriptions by current and future end-customers.

We are subject to governmental export and import controls that could subject us to liability or impair our ability to compete in international markets.

Because we incorporate encryption technology into our products, certain of our products are subject to U.S. export controls and may be exported outside the United States only with the required export license or through an export license exception. If we were to fail to comply with U.S. export licensing requirements, U.S. customs regulations, U.S. economic sanctions, or other laws, we could be subject to substantial civil and criminal penalties, including fines, incarceration for responsible employees and managers, and the possible loss of export or import privileges. Obtaining the necessary export license for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities. Furthermore, U.S. export control laws and economic sanctions prohibit the shipment of certain products to U.S. embargoed or sanctioned countries, governments, and persons. Even though we take precautions to ensure that our channel partners comply with all relevant regulations, any failure by our channel partners to comply with such regulations could have negative consequences for us, including reputational harm, government investigations, and penalties.

In addition, various countries regulate the import of certain encryption technology, including through import permit and license requirements, and have enacted laws that could limit our ability to distribute our products or could limit our end-customers' ability to implement our products in those countries. Changes in our products or changes in export and import regulations may create delays in the introduction of our products into international markets, prevent our end-customers with international operations from deploying our products globally or, in some cases, prevent or delay the export or import of our products to certain countries, governments, or persons altogether. Any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations, or change in the countries, governments, persons, or technologies targeted by such regulations, could result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential end-customers with international operations. Any decreased use of our products or limitation on our ability to export to or sell our products in international markets would likely adversely affect our business, financial condition, and operating results.

Our failure to raise additional capital or generate the significant capital necessary to expand our operations and invest in new products and subscriptions could reduce our ability to compete and could harm our business.

We intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including the need to develop new features to enhance our platforms, improve our operating infrastructure, or acquire complementary businesses and technologies. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional equity or equity-linked financing, our stockholders may experience significant dilution of their ownership interests and the market price of our common stock could decline. For example, in June 2014, we issued our 2019 Notes and in July 2018, we issued our 2023 Notes. None of our 2019 Notes remained outstanding as of July 31, 2019. However, any conversion of the outstanding 2023 Notes into common stock will dilute the ownership interests of existing stockholders to the extent we deliver shares upon conversion of such 2023 Notes. See the risk factor entitled "The issuance of additional stock in connection with financings, acquisitions, investments, our stock incentive plans, the conversion of our 2023 Notes or exercise of the related Warrants to our Notes, or otherwise will dilute all other stockholders." The holders of our 2023 Notes have priority over holders of our common stock, and if we engage in future debt financings, the holders of such additional debt would also have priority over the holders of our common stock. Current and future indebtedness may also contain terms that, among other things, restrict our ability to incur additional indebtedness. We may also be required to take other actions that would otherwise be in the interests of the debt holders and would require us to maintain specified liquidity or other ratios, any of which could harm our business, operating results, and financial condition. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be adversely affected.

We have a corporate structure aligned with the international nature of our business activities, and if we do not achieve increased tax benefits as a result of our corporate structure, our financial condition and operating results could be adversely affected.

We have reorganized our corporate structure and intercompany relationships to more closely align with the international nature of our business activities. This corporate structure may allow us to reduce our overall effective tax rate through changes in how we use our intellectual property, international procurement, and sales operations. This corporate structure may also allow us to obtain financial and operational efficiencies. These efforts require us to incur expenses in the near term for which we may not realize related benefits. If the structure is not accepted by the applicable tax authorities, if there are any changes in, or interpretations of, domestic and international tax laws that negatively impact the structure, or if we do not operate our business consistent with the structure and applicable tax provisions, we may fail to achieve the reduction in our overall effective tax rate and the other financial and operational efficiencies that we anticipate as a result of the structure and our future financial condition and operating results may be negatively impacted. In addition, we continue to evaluate our corporate structure in light of current and pending tax legislation, and any changes to our corporate structure may require us to incur additional expenses and may impact our overall effective tax rate.

We may have exposure to greater than anticipated tax liabilities.

Our income tax obligations are based in part on our corporate structure and intercompany arrangements, including the manner in which we develop, value, and use our intellectual property and the valuations of our intercompany transactions. The tax laws applicable to our business, including the laws of the United States and other jurisdictions, are subject to interpretation and certain jurisdictions may aggressively interpret their laws in an effort to raise additional tax revenue. The tax authorities of the jurisdictions in which we operate may challenge our methodologies for valuing developed technology or intercompany arrangements, which could increase our worldwide effective tax rate and harm our financial position and operating results. It is possible that tax authorities may disagree with certain positions we have taken and any adverse outcome of such a review or audit could have a negative effect on our financial position and operating results. Further, the determination of our worldwide provision for income taxes and other tax liabilities requires significant judgment by management, and there are transactions where the ultimate tax determination is uncertain. Although we believe that our estimates are reasonable, the ultimate tax outcome may differ from the amounts recorded in our condensed consolidated financial statements and may materially affect our financial results in the period or periods for which such determination is made.

In addition, our future income tax obligations could be adversely affected by changes in, or interpretations of, tax laws in the United States or in other jurisdictions in which we operate. In the United States, the Tax Cuts and Jobs Act contains many significant changes to the U.S. federal income tax laws, the consequences of which, to us, could have a material impact on the value of our deferred tax assets and could increase our future U.S. income tax expense. Furthermore, changes to the taxation of undistributed foreign earnings, if any, could change our future intentions regarding reinvestment of such earnings. The foregoing items could have a material adverse effect on our business, cash flows, operating results, or financial condition.

If our estimates or judgments relating to our critical accounting policies are based on assumptions that change or prove to be incorrect, our operating results could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in our condensed consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue, and expenses that are not readily apparent from other sources. For more information, refer to the section entitled “Critical Accounting Estimates” in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Part I, Item 2 of this Quarterly Report on Form 10-Q. In general, if our estimates, judgments or assumptions relating to our critical accounting policies change or if actual circumstances differ from our estimates, judgments or assumptions, our operating results may be adversely affected and could fall below our publicly announced guidance or the expectations of securities analysts and investors, resulting in a decline in the market price of our common stock.

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

Our business is subject to regulation by various federal, state, local, and foreign governmental agencies, including agencies responsible for monitoring and enforcing employment and labor laws, workplace safety, product safety, environmental laws, consumer protection laws, privacy and data-protection laws, anti-bribery laws (including the U.S. Foreign Corrupt Practices Act and the U.K. Anti-Bribery Act), import/export controls, federal securities laws, and tax laws and regulations. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States. Noncompliance with applicable regulations or requirements could subject us to investigations, sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties, or injunctions. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation resulting from any alleged noncompliance, our business, operating results, and financial condition could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management’s attention and resources and an increase in professional fees. Enforcement actions, litigation, and sanctions could harm our business, operating results, and financial condition.

If we fail to comply with environmental requirements, our business, financial condition, operating results, and reputation could be adversely affected.

We are subject to various environmental laws and regulations including laws governing the hazardous material content of our products and laws relating to the collection of and recycling of electrical and electronic equipment. Examples of these laws and regulations include the E.U. Restriction on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive (“RoHS”) and the E.U. Waste Electrical and Electronic Equipment Directive (“WEEE Directive”), as well as the implementing legislation of the E.U. member states. Similar laws and regulations have been passed or are pending in China, South Korea, Norway, and Japan and may be enacted in other regions, including in the United States, and we are, or may in the future be, subject to these laws and regulations.

The E.U. RoHS and the similar laws of other jurisdictions limit the content of certain hazardous materials such as lead, mercury, and cadmium in the manufacture of electrical equipment, including our products. Our current products comply with the E.U. RoHS requirements. However, if there are changes to this or other laws (or their interpretation) or if new similar laws are passed in other jurisdictions, we may be required to reengineer our products to use components compatible with these regulations. This reengineering and component substitution could result in additional costs to us or disrupt our operations or logistics.

The WEEE Directive requires electronic goods producers to be responsible for the collection, recycling, and treatment of such products. Changes in interpretation of the directive may cause us to incur costs or have additional regulatory requirements to meet in the future in order to comply with this directive, or with any similar laws adopted in other jurisdictions.

We are also subject to environmental laws and regulations governing the management of hazardous materials, which we use in small quantities in our engineering labs. Our failure to comply with past, present, and future similar laws could result in reduced sales of our products, substantial product inventory write-offs, reputational damage, penalties, and other sanctions, any of which could harm our business and financial condition. We also expect that our products will be affected by new environmental laws and regulations on an ongoing basis. To date, our expenditures for environmental compliance have not had a material impact on our operating results or cash flows, and although we cannot predict the future impact of such laws or regulations, they will likely result in additional costs and

may increase penalties associated with violations or require us to change the content of our products or how they are manufactured, which could have a material adverse effect on our business, operating results, and financial condition.

Our business is subject to the risks of earthquakes, fire, power outages, floods, and other catastrophic events, and to interruption by man-made problems such as terrorism.

Both our corporate headquarters and the location where our products are manufactured are located in the San Francisco Bay Area, a region known for seismic activity. In addition, other natural disasters, such as fire or floods, a significant power outage, telecommunications failure, terrorism, an armed conflict, cyberattacks, or other geo-political unrest could affect our supply chain, manufacturers, logistics providers, channel partners, or end-customers or the economy as a whole and such disruption could impact our shipments and sales. These risks may be further increased if the disaster recovery plans for us and our suppliers prove to be inadequate. To the extent that any of the above should result in delays or cancellations of customer orders, the loss of customers, or the delay in the manufacture, deployment, or shipment of our products, our business, financial condition, and operating results would be adversely affected.

Risks Related to Our 2023 Notes

We may not have the ability to raise the funds necessary to settle conversions of our 2023 Notes, repurchase our 2023 Notes upon a fundamental change or repay our 2023 Notes in cash at their maturity, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of our 2023 Notes.

Holders of our 2023 Notes will have the right under the indenture governing our 2023 Notes to require us to repurchase all or a portion of their 2023 Notes upon the occurrence of a fundamental change before the maturity date at a repurchase price equal to 100% of the principal amount of our 2023 Notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. In addition, upon conversion of our 2023 Notes, we will be required to make cash payments for each \$1,000 in principal amount of our 2023 Notes converted of at least the lesser of \$1,000 and the sum of the daily conversion values for such 2023 Notes. Moreover, we will be required to repay our 2023 Notes in cash at their maturity, unless earlier converted or repurchased. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of our 2023 Notes surrendered or pay cash with respect to our 2023 Notes being converted.

In addition, our ability to repurchase or to pay cash upon conversion of our 2023 Notes may be limited by law, regulatory authority or agreements governing our future indebtedness. Our failure to repurchase our 2023 Notes at a time when the repurchase is required by the indenture governing our 2023 Notes or to pay cash upon conversion of our 2023 Notes as required by the indenture would constitute a default under the indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the payment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase our 2023 Notes or to pay cash upon conversion of our 2023 Notes.

We may still incur substantially more debt or take other actions that would diminish our ability to make payments on our 2023 Notes when due.

We and our subsidiaries may be able to incur substantial additional debt in the future, subject to the restrictions contained in our debt instruments, some of which may be secured debt. We are not restricted under the terms of the indenture governing our 2023 Notes from incurring additional debt, securing existing or future debt, recapitalizing our debt or taking a number of other actions that are not limited by the terms of such indenture governing our 2023 Notes that could have the effect of diminishing our ability to make payments on our 2023 Notes when due. While the terms of any future indebtedness we may incur could restrict our ability to incur additional indebtedness, any such restrictions will indirectly benefit holders of our 2023 Notes only to the extent any such indebtedness or credit facility is not repaid or does not mature while our 2023 Notes are outstanding.

Risks Related to Our Common Stock

Our actual operating results may differ significantly from our guidance.

From time to time, we have released, and may continue to release, guidance in our quarterly earnings releases, quarterly earnings conference calls, or otherwise, regarding our future performance that represents our management's estimates as of the date of release. This guidance, which includes forward-looking statements, has been and will be based on projections prepared by our management. These projections are not prepared with a view toward compliance with published guidelines of the American Institute of Certified Public Accountants, and neither our registered public accountants nor any other independent expert or outside party compiles or examines the projections. Accordingly, no such person expresses any opinion or any other form of assurance with respect to the projections.

Projections are based upon a number of assumptions and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our

control and are based upon specific assumptions with respect to future business decisions, some of which will change. The rapidly evolving market in which we operate may make it difficult to evaluate our current business and our future prospects, including our ability to plan for and model future growth. We intend to state possible outcomes as high and low ranges which are intended to provide a sensitivity analysis as variables are changed. However, actual results will vary from our guidance and the variations may be material. The principal reason that we release guidance is to provide a basis for our management to discuss our business outlook as of the date of release with analysts and investors. We do not accept any responsibility for any projections or reports published by any such persons. Investors are urged not to rely upon our guidance in making an investment decision regarding our common stock.

Any failure to successfully implement our operating strategy or the occurrence of any of the events or circumstances set forth in this “Risk Factors” section in this Quarterly Report on Form 10-Q could result in our actual operating results being different from our guidance, and the differences may be adverse and material.

The market price of our common stock historically has been volatile and the value of your investment could decline.

The market price of our common stock has been volatile since our initial public offering (“IPO”) in July 2012. The reported high and low sales prices of our common stock during the last 12 months have ranged from \$192.17 to \$260.63, as measured through February 14, 2020. The market price of our common stock may fluctuate widely in response to various factors, some of which are beyond our control. These factors include:

- announcements of new products, subscriptions or technologies, commercial relationships, strategic partnerships, acquisitions or other events by us or our competitors;
- price and volume fluctuations in the overall stock market from time to time;
- news announcements that affect investor perception of our industry, including reports related to the discovery of significant cyberattacks;
- significant volatility in the market price and trading volume of technology companies in general and of companies in our industry;
- fluctuations in the trading volume of our shares or the size of our public float;
- actual or anticipated changes in our operating results or fluctuations in our operating results;
- whether our operating results meet the expectations of securities analysts or investors;
- actual or anticipated changes in the expectations of securities analysts or investors, whether as a result of our forward- looking statements, our failure to meet such expectations or otherwise;
- inaccurate or unfavorable research reports about our business and industry published by securities analysts or reduced coverage of our company by securities analysts;
- litigation involving us, our industry, or both;
- actions instituted by activist shareholders or others;
- regulatory developments in the United States, foreign countries or both;
- major catastrophic events;
- sales or repurchases of large blocks of our common stock or substantial future sales by our directors, executive officers, employees and significant stockholders;
- sales of our common stock by investors who view our 2023 Notes as a more attractive means of equity participation in us;
- hedging or arbitrage trading activity involving our common stock as a result of the existence of our 2023 Notes;
- departures of key personnel; or
- economic uncertainty around the world, in particular, macroeconomic challenges in Europe.

The market price of our common stock could decline for reasons unrelated to our business, operating results, or financial condition and as a result of events that do not directly affect us. In the past, following periods of volatility in the market price of a company’s securities, securities class action litigation has often been brought against that company. Securities litigation could result in substantial costs and divert our management’s attention and resources from our business. This could have a material adverse effect on our business, operating results, and financial condition.

The convertible note hedge and warrant transactions may affect the value of our common stock.

In connection with the sale of both our 2019 Notes and 2023 Notes (together the “Notes”), we entered into convertible note hedge transactions (the “Note Hedges”) with certain counterparties. In connection with each such sale of the Notes, we also entered

into warrant transactions with the counterparties pursuant to which we sold warrants (the “Warrants”) for the purchase of our common stock. The Note Hedges for our 2019 Notes have expired. The Note Hedges for our 2023 Notes are expected generally to reduce the potential dilution to our common stock upon any conversion of our 2023 Notes and/or offset any cash payments we are required to make in excess of the principal amount of any such converted 2023 Notes. The Warrants could separately have a dilutive effect to the extent that the market price per share of our common stock exceeds the applicable strike price of the Warrants unless, subject to certain conditions, we elect to cash settle such Warrants.

The applicable counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the outstanding 2023 Notes (and are likely to do so during any applicable observation period related to a conversion of our 2023 Notes). This activity could also cause or avoid an increase or a decrease in the market price of our common stock or our 2023 Notes, which could affect a note holder’s ability to convert its 2023 Notes and, to the extent the activity occurs during any observation period related to a conversion of our 2023 Notes, it could affect the amount and value of the consideration that the note holder will receive upon conversion of our 2023 Notes.

We do not make any representation or prediction as to the direction or magnitude of any potential effect that the transactions described above may have on the price of our 2023 Notes or our common stock. In addition, we do not make any representation that the counterparties or their respective affiliates will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

The issuance of additional stock in connection with financings, acquisitions, investments, our stock incentive plans, the conversion of our 2023 Notes or exercise of the related Warrants to our Notes, or otherwise will dilute all other stockholders.

Our amended and restated certificate of incorporation authorizes us to issue up to 1.0 billion shares of common stock and up to 100.0 million shares of preferred stock with such rights and preferences as may be determined by our board of directors. Subject to compliance with applicable rules and regulations, we may issue shares of common stock or securities convertible into shares of our common stock from time to time in connection with a financing, acquisition, investment, our stock incentive plans, the conversion of our 2023 Notes, the settlement of our Warrants related to each such series of Notes, or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and cause the market price of our common stock to decline.

We cannot guarantee that our share repurchase program or our recently announced accelerated share repurchase transaction will be fully consummated or that they will enhance shareholder value, and share repurchases could affect the price of our common stock.

In February 2019, our board of directors authorized a \$1.0 billion share repurchase program which will be funded from available working capital. The repurchase authorization will expire on December 31, 2020. In February 2020, our board of directors approved the repurchase of \$1.0 billion of our common stock through an accelerated share repurchase (“ASR”) transaction, which we expect to enter into during our fiscal quarter ending April 30, 2020, subject to market conditions. This ASR transaction is in addition to our share repurchase program. Although our board of directors has authorized a share repurchase program and an ASR transaction, they do not obligate us to repurchase any specific dollar amount or to acquire any specific number of shares. The share repurchase program and the ASR transaction could affect the price of our common stock, increase volatility and diminish our cash reserves. In addition, the program may be suspended or terminated at any time, and the ASR transaction may not be consummated, which may result in a decrease in the price of our common stock.

We are subject to risks associated with our strategic investments. Impairments in the value of our investments could negatively impact our financial results.

In July 2017, we formed the \$20.0 million Palo Alto Networks Venture Fund. The fund is aimed at seed-, early-, and growth-stage security companies with a cloud-based application approach. We may not realize a return on our capital investments. Many such private companies generate net losses and the market for their products, services or technologies may be slow to develop, and, therefore, are dependent on the availability of later rounds of financing from banks or investors on favorable terms to continue their operations. The financial success of our investment in any company is typically dependent on a liquidity event, such as a public offering, acquisition or other favorable market event reflecting appreciation in the cost of our initial investment. The capital markets for public offerings and acquisitions are dynamic and the likelihood of liquidity events for the companies we have invested in, and intend to invest in, could significantly change. Further, valuations of privately-held companies are inherently complex due to the lack of readily available market data and as such, the basis for these valuations is subject to the timing and accuracy of the data received from these companies. If we determine that any of our investments in such companies have experienced a decline in value, we may be required to record an impairment, which could be material and negatively impact our financial results. All of our investments are subject to a risk of a partial or total loss of investment capital.

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

We have never declared or paid any dividends on our common stock. We intend to retain any earnings to finance the operation and expansion of our business, and we do not anticipate paying any cash dividends in the future. As a result, you may only receive a return on your investment in our common stock if the market price of our common stock increases.

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

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, the Dodd-Frank Act, the listing requirements of the New York Stock Exchange ("NYSE"), and other applicable securities rules and regulations. Compliance with these rules and regulations have increased our legal and financial compliance costs, made some activities more difficult, time-consuming or costly, and increased demand on our systems and resources. Among other things, the Exchange Act requires that we file annual, quarterly, and current reports with respect to our business and operating results. In addition, the Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to meet the requirements of this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could harm our business and operating results. Although we have already hired additional employees to comply with these requirements, we may need to hire even more employees in the future, which will increase our costs and expenses.

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

We are obligated to maintain proper and effective internal control over financial reporting. We may not complete our analysis of our internal control over financial reporting in a timely manner, or this internal control may not be determined to be effective, which may adversely affect investor confidence in our company and, as a result, the value of our common stock.

While we were able to determine in our management's report for fiscal 2019 that our internal control over financial reporting is effective, as well as provide an unqualified attestation report from our independent registered public accounting firm to that effect, we may not be able to complete our evaluation, testing, and any required remediation in a timely fashion, may be unable to assert that our internal controls are effective, or our independent registered public accounting firm may not be able to formally attest to the effectiveness of our internal control over financial reporting in the future. In the event that our chief executive officer, chief financial officer, or independent registered public accounting firm determines in the future that our internal control over financial reporting is not effective as defined under Section 404, we could be subject to one or more investigations or enforcement actions by state or federal regulatory agencies, stockholder lawsuits or other adverse actions requiring us to incur defense costs, pay fines, settlements or judgments and causing investor perceptions to be adversely affected and potentially resulting in a decline in the market price of our stock.

Our charter documents and Delaware law, as well as certain provisions contained in the indentures governing our 2023 Notes, could discourage takeover attempts and lead to management entrenchment, which could also reduce the market price of our common stock.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change in control of our company or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with three-year staggered terms;
- authorize our board of directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval;
- provide our board of directors with the exclusive right to elect a director to fill a vacancy created by the expansion of our board of directors or the resignation, death or removal of a director;
- prohibit our stockholders from taking action by written consent;

- specify that special meetings of our stockholders may be called only by the chairman of our board of directors, our president, our secretary, or a majority vote of our board of directors;
- require the affirmative vote of holders of at least 66 2/3% of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our amended and restated certificate of incorporation relating to the issuance of preferred stock and management of our business or our amended and restated bylaws;
- authorize our board of directors to amend our bylaws by majority vote; and
- establish advance notice procedures with which our stockholders must comply to nominate candidates to our board of directors or to propose matters to be acted upon at a stockholders' meeting.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for our stockholders to replace members of our board of directors, which is responsible for appointing the members of management. In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time. Additionally, certain provisions contained in the indenture governing our 2023 Notes could make it more difficult or more expensive for a third party to acquire us. The application of Section 203 or certain provisions contained in the indenture governing our 2023 Notes also could have the effect of delaying or preventing a change in control of us. Any of these provisions could, under certain circumstances, depress the market price of our common stock.

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

Unregistered Sales of Equity Securities

During the three months ended January 31, 2020, we issued 1.3 million shares of our common stock to certain financial counterparties that were holders of warrants that we issued in connection with the issuance of our 2019 Notes. The shares of common stock issued upon exercise of these warrants were issued in reliance on an exemption from registration provided by Section 3(a)(9) of the Securities Act of 1933, as amended.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

The following table summarizes stock repurchases during the three months ended January 31, 2020 (in millions, except per share amounts):

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ⁽¹⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ⁽¹⁾
November 1, 2019 to November 30, 2019 ⁽²⁾⁽³⁾	0.0	\$ 233.45	0.0	\$ 801.9
December 1, 2019 to December 31, 2019 ⁽²⁾	0.0	\$ 227.45	0.0	\$ 801.9
January 1, 2020 to January 31, 2020 ⁽²⁾	0.0	\$ 241.76	0.0	\$ 801.9
Total	0.0	\$ 235.26	0.0	

- (1) On February 26, 2019, we announced that our board of directors authorized a \$1.0 billion share repurchase program which will be funded from available working capital. Repurchases may be made at management's discretion from time to time on the open market, through privately negotiated transactions, transactions structured through investment banking institutions, block purchase techniques, 10b5-1 trading plans, or a combination of the foregoing. The repurchase authorization will expire on December 31, 2020, and may be suspended or discontinued at any time.
- (2) Includes shares of restricted common stock delivered by certain employees upon vesting of equity awards to satisfy tax withholding requirements. The number of shares delivered by these employees to satisfy tax withholding requirements during the period was not significant.
- (3) Includes repurchases under our share repurchase program, for which the average price paid per share excludes costs associated with the repurchases.

On February 21, 2020, our board of directors approved the repurchase of \$1.0 billion of our common stock through an accelerated share repurchase ("ASR") transaction, which we expect to enter into during our fiscal quarter ending April 30, 2020, subject to market conditions. The ASR transaction is in addition to our \$1.0 billion share repurchase program that our board of directors authorized in February 2019.

ITEM 5. OTHER INFORMATION

On February 21, 2020, our board of directors amended and restated our bylaws (as amended and restated, the “Bylaws”), effective immediately, to, among other things, clarify certain procedures and make certain other enhancements and technical changes. The changes to the Bylaws include, without limitation, the following:

- specifying powers of the chairman of a stockholder meeting to establish rules of conduct and the order of business at the meeting;
- clarifying provisions related to the adjournment and postponement and other procedural aspects of stockholder meetings; and
- updating procedural mechanics and disclosure requirements in connection with stockholder nominations of directors and submission of stockholder proposals at stockholder meetings.

The foregoing summary is qualified in its entirety by reference to the full text of the Bylaws, which is attached as Exhibit [3.2](#), and is incorporated herein by reference.

ITEM 6. EXHIBITS

Exhibit Number	Exhibit Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
3.2	Amended and Restated Bylaws of the Registrant				
10.1 *	Aporeto, Inc., Amended and Restated 2015 Stock Option and Grant Plan	S-8	333-235854	99.1	January 8, 2020
10.2	Lease Termination Agreement (4301 Great America Parkway, Santa Clara, California)	8-K	001-35594	10.1	December 19, 2019
10.3	Lease Termination Agreement (4401 Great America Parkway, Santa Clara, California)	8-K	001-35594	10.2	December 19, 2019
31.1	Certification of the Chief Executive Officer pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002.				
31.2	Certification of the Chief Financial Officer pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002.				
32.1 †	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
32.2 †	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101	The following financial information from Palo Alto Networks, Inc.'s Quarterly Report on Form 10-Q for the quarter ended January 31, 2020 formatted in Inline XBRL includes: (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Operations, (iii) Condensed Consolidated Statements of Comprehensive Loss, (iv) Condensed Consolidated Statements of Stockholders' Equity, (v) Condensed Consolidated Statements of Cash Flows, and (vi) Notes to the Condensed Consolidated Financial Statements.				
104	Cover Page Interactive Data File—(formatted as Inline XBRL and contained in Exhibit 101).				

* Indicates a management contract or compensatory plan or arrangement.

† The certifications attached as Exhibit 32.1 and 32.2 that accompany this Quarterly Report on Form 10-Q are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Palo Alto Networks, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing.

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.

Date: February 24, 2020

PALO ALTO NETWORKS, INC.

By: /s/ KATHLEEN BONANNO

Kathleen Bonanno

Chief Financial Officer

(Duly Authorized Officer and Principal Financial Officer)

Date: February 24, 2020

PALO ALTO NETWORKS, INC.

By: /s/ JEAN COMPEAU

Jean Compeau

Chief Accounting Officer

(Duly Authorized Officer and Principal Accounting Officer)

AMENDED AND RESTATED BYLAWS OF

PALO ALTO NETWORKS, INC.

(initially adopted on March 2, 2005)

(as amended and restated on February 21, 2020)

TABLE OF CONTENTS

	Page
ARTICLE I - CORPORATE OFFICES	1
1.1 REGISTERED OFFICE	1
1.2 OTHER OFFICES	1
ARTICLE II - MEETINGS OF STOCKHOLDERS	1
2.1 PLACE OF MEETINGS	1
2.2 ANNUAL MEETING	1
2.3 SPECIAL MEETING	1
2.4 ADVANCE NOTICE PROCEDURES	2
2.5 NOTICE OF STOCKHOLDERS' MEETINGS	12
2.6 QUORUM	12
2.7 ADJOURNMENTS AND POSTPONEMENTS; NOTICE	12
2.8 CONDUCT OF BUSINESS	13
2.9 VOTING	13
2.10 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING	14
2.11 RECORD DATES	14
2.12 PROXIES	15
2.13 LIST OF STOCKHOLDERS ENTITLED TO VOTE	15
2.14 INSPECTORS OF ELECTION	15
2.15 PROXY ACCESS FOR DIRECTOR NOMINATIONS	16
ARTICLE III - DIRECTORS	23
3.1 POWERS	23
3.2 NUMBER OF DIRECTORS	23
3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS	23
3.4 RESIGNATION AND VACANCIES	23
3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE	24
3.6 REGULAR MEETINGS	24
3.7 SPECIAL MEETINGS; NOTICE	24
3.8 QUORUM; VOTING	25
3.9 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING	25
3.10 FEES AND COMPENSATION OF DIRECTORS	26
3.11 REMOVAL OF DIRECTORS	26
ARTICLE IV - COMMITTEES	26
4.1 COMMITTEES OF DIRECTORS	26
4.2 COMMITTEE MINUTES	26
4.3 MEETINGS AND ACTION OF COMMITTEES	26
4.4 SUBCOMMITTEES	27
ARTICLE V - OFFICERS	27
5.1 OFFICERS	27

5.2	APPOINTMENT OF OFFICERS	27
5.3	SUBORDINATE OFFICERS	28
5.4	REMOVAL AND RESIGNATION OF OFFICERS	28
5.5	VACANCIES IN OFFICES	28
5.6	REPRESENTATION OF SHARES OF OTHER CORPORATIONS	28
5.7	AUTHORITY AND DUTIES OF OFFICERS	28
5.8	THE CHAIRPERSON OF THE BOARD OF DIRECTORS	29
5.9	THE VICE CHAIRPERSON OF THE BOARD OF DIRECTORS	29
5.1	THE CHIEF EXECUTIVE OFFICER	29
5.11	THE PRESIDENT	29
5.12	THE VICE PRESIDENTS AND ASSISTANT VICE PRESIDENTS	29
5.13	THE SECRETARY AND ASSISTANT SECRETARIES	29
5.14	THE CHIEF FINANCIAL OFFICER AND ASSISTANT TREASURERS	30
ARTICLE VI - STOCK		30
6.1	STOCK CERTIFICATES; PARTLY PAID SHARES	30
6.2	SPECIAL DESIGNATION ON CERTIFICATES	31
6.3	LOST, STOLEN OR DESTROYED CERTIFICATES	31
6.4	DIVIDENDS	32
6.5	TRANSFER OF STOCK	32
6.6	STOCK TRANSFER AGREEMENTS	32
6.7	REGISTERED STOCKHOLDERS	32
ARTICLE VII - MANNER OF GIVING NOTICE AND WAIVER		32
7.1	NOTICE OF STOCKHOLDERS' MEETINGS	32
7.2	NOTICE BY ELECTRONIC TRANSMISSION	33
7.3	NOTICE TO STOCKHOLDERS SHARING AN ADDRESS	33
7.4	NOTICE TO PERSON WITH WHOM COMMUNICATION IS UNLAWFUL	34
7.5	WAIVER OF NOTICE	34
ARTICLE VIII - INDEMNIFICATION		34
8.1	INDEMNIFICATION OF DIRECTORS AND OFFICERS IN THIRD PARTY PROCEEDINGS	34
8.2	INDEMNIFICATION OF DIRECTORS AND OFFICERS IN ACTIONS BY OR IN THE RIGHT OF THE CORPORATION	35
8.3	SUCCESSFUL DEFENSE	35
8.4	INDEMNIFICATION OF OTHERS	35
8.5	ADVANCED PAYMENT OF EXPENSES	36
8.6	LIMITATION ON INDEMNIFICATION	36
8.7	DETERMINATION; CLAIM	37
8.8	NON-EXCLUSIVITY OF RIGHTS	37
8.9	INSURANCE	37
8.10	SURVIVAL	37
8.11	EFFECT OF REPEAL OR MODIFICATION	38
8.12	CERTAIN DEFINITIONS	38

ARTICLE IX - GENERAL MATTERS	38
9.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS	38
9.2 FISCAL YEAR	38
9.3 SEAL	38
9.4 CONSTRUCTION; DEFINITIONS	39
ARTICLE X - AMENDMENTS	39

AMENDED AND RESTATED BYLAWS OF PALO ALTO NETWORKS, INC.

ARTICLE I - CORPORATE OFFICES

1.1 REGISTERED OFFICE

The registered office of Palo Alto Networks, Inc. shall be fixed in the corporation's certificate of incorporation. References in these bylaws to the certificate of incorporation shall mean the certificate of incorporation of the corporation, as amended from time to time, including the terms of any certificate of designations of any series of preferred stock of the corporation ("**Preferred Stock**").

1.2 OTHER OFFICES

The corporation's board of directors may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II - MEETINGS OF STOCKHOLDERS

2.1 PLACE OF MEETINGS

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the board of directors. The board of directors may, in its sole discretion, determine that a meeting of stockholders shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the General Corporation Law of the State of Delaware (the "**DGCL**"). In the absence of any such designation or determination, stockholders' meetings shall be held at the corporation's principal executive office.

2.2 ANNUAL MEETING

The annual meeting of stockholders shall be held on such date, at such time, and at such place (if any) within or without the State of Delaware as shall be designated from time to time by the board of directors and stated in the corporation's notice of the meeting. At the annual meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING

(i) A special meeting of the stockholders, other than those required by statute, may be called at any time only by (A) the board of directors, (B) the chairperson of the board of directors, (C) the chief executive officer or (D) the president (in the absence of a chief executive officer). A special meeting of the stockholders may not be called by any other person or persons. The board of directors may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders.

(ii) The notice of a special meeting shall include the purpose for which the meeting is called. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting by or at the direction of the board of directors, the chairperson of the board of directors, the chief executive officer or the president (in the absence of a chief

executive officer). Nothing contained in this Section 2.3(ii) shall be construed as limiting, fixing or affecting the time when a meeting of stockholders called by action of the board of directors may be held.

2.4 ADVANCE NOTICE PROCEDURES

(i) *Advance Notice of Stockholder Business.* At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be brought: (A) pursuant to the corporation's proxy materials (and any supplements thereto) with respect to such meeting, (B) by or at the direction of the board of directors, or (C) by a stockholder of the corporation who (1) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(i), on the record date for the determination of stockholders entitled to vote at the annual meeting and at the time of the annual meeting (including any postponement or adjournment thereof) and (2) has timely complied in proper written form with the notice procedures set forth in this Section 2.4(i) and Section 2.4(iii). In addition, for business to be properly brought before an annual meeting by a stockholder, such business must be a proper matter for stockholder action pursuant to these bylaws and applicable law. Except for proposals properly made in accordance with Rule 14a-8 under the Securities Exchange Act of 1934, as amended, or any successor thereto (the "**1934 Act**"), and the rules and regulations thereunder (as so amended and inclusive of such rules and regulations), and included in the notice of meeting given by or at the direction of the board of directors, for the avoidance of doubt, clause (C) above shall be the exclusive means for a stockholder to bring business before an annual meeting of stockholders.

(a) To comply with clause (C) of Section 2.4(i) above, a stockholder's notice must set forth all information required under this Section 2.4(i) and Section 2.4(iii) and must be timely received by the secretary of the corporation. To be timely, a stockholder's notice must be received by the secretary during business hours at the principal executive offices of the corporation not later than 5:00 p.m. Pacific Time on the 90th day nor earlier than 5:00 p.m. Pacific Time on the 120th day before the one-year anniversary of the date of the preceding year's annual meeting. In the event that no annual meeting was held in the previous year or if the date of the annual meeting is advanced by more than 30 days prior to or delayed by more than 60 days after the one-year anniversary of the date of the previous year's annual meeting, then, for notice by the stockholder to be timely, it must be so received by the secretary during business hours not earlier than 5:00 p.m. Pacific Time on the 120th day prior to such annual meeting and not later than 5:00 p.m. Pacific Time on the later of (i) the 90th day prior to such annual meeting or (ii) the tenth day following the day on which Public Announcement (as defined below) of the date of such annual meeting is first made by the corporation. In no event shall any adjournment or postponement of an annual meeting or the announcement thereof commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(i)(a). "**Public Announcement**" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or a comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act.

(b) To be in proper written form, a stockholder's notice to the secretary must set forth as to each matter of business the stockholder intends to bring before the annual meeting:

- (1) a brief description of the business intended to be brought before the annual meeting and the reasons for conducting such business at the annual meeting;
- (2) the text of the proposal or business (including the text of any resolutions proposed for consideration and in the event that such business includes a proposal to amend the certificate of incorporation or the bylaws, the language of the proposed amendment)
- (3) the name and address, as they appear on the corporation's books, of the stockholder proposing the business or making the nomination and any Stockholder Associated Person (as defined below);
- (4) the class and number of shares or other securities of the corporation or any affiliate thereof (collectively, the "**Company Securities**") that are held of record or are beneficially owned by such stockholder or any Stockholder Associated Person and any derivative positions held or beneficially held by the stockholder or any Stockholder Associated Person, the date on which each such Company Security was acquired, the investment intent of such acquisition and evidence of such beneficial or record ownership;
- (5) the nominee holder for, and number of, any Company Securities owned beneficially but not of record by such stockholder or Stockholder Associated Person;
- (6) a complete and accurate description of any material interest in such business of the stockholder or a Stockholder Associated Person individually or in the aggregate, including any anticipated benefit to the stockholder or any Stockholder Associated Person therefrom;
- (7) all other information that would be required to be disclosed in solicitations of proxies in support of such proposed business by such stockholder or any Stockholder Associated Person, or is otherwise required, in each case pursuant to and in accordance with Section 14(a) of the 1934 Act, and the rules and regulations promulgated thereunder; and
- (8) a statement whether either such stockholder or any Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of at least the percentage of the corporation's voting shares required under applicable law to carry the proposal (such information provided and statements made as required by

clauses (1) through (7), a “**Business Solicitation Statement**”). In addition, to be in proper written form, a stockholder’s notice to the secretary must be supplemented not later than 10 days following the record date for notice of the meeting to disclose the information contained in clauses (3) and (4) above as of the record date for notice of the meeting. For purposes of this Section 2.4, a “**Stockholder Associated Person**” of any stockholder shall mean (i) any person controlling, directly or indirectly, or acting in concert with, such stockholder, (ii) any beneficial owner of shares of stock of the corporation owned of record or beneficially by such stockholder and on whose behalf the proposal or nomination, as the case may be, is being made, or (iii) any person controlling, controlled by or under common control with such person referred to in the preceding clauses (i) and (ii).

(c) Without exception, no business shall be conducted at any annual meeting except in accordance with the provisions set forth in this Section 2.4(i) and, if applicable, Section 2.4(ii). In addition, business proposed to be brought by a stockholder may not be brought before the annual meeting if such stockholder or a Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Business Solicitation Statement applicable to such business or if the Business Solicitation Statement applicable to such business contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that business was not properly brought before the annual meeting and in accordance with the provisions of this Section 2.4(i), and, if the chairperson should so determine, he or she shall so declare at the annual meeting that any such business not properly brought before the annual meeting shall not be conducted.

(ii) *Advance Notice of Director Nominations at Annual Meetings.* Notwithstanding anything in these bylaws to the contrary, only persons who are nominated in accordance with the procedures set forth in this Section 2.4(ii) or in Section 2.15 shall be eligible for election or re-election as directors at an annual meeting of stockholders. Nominations of persons for election or re-election to the board of directors of the corporation shall be made at an annual meeting of stockholders only (A) by or at the direction of the board of directors, (B) by a stockholder of the corporation who (1) was a stockholder of record at the time of the giving of the notice required by this Section 2.4(ii), on the record date for the determination of stockholders entitled to vote at the annual meeting and at the time of the annual meeting (including any postponement or adjournment thereof) and (2) has complied with the notice procedures set forth in this Section 2.4(ii) and Section 2.4(iii) or (C) in compliance with Section 2.15. In addition to any other applicable requirements, for a nomination to be made by a stockholder, the stockholder must have given timely notice thereof in proper written form to the secretary of the corporation.

(a) To comply with clause (B) of Section 2.4(ii) above, a notice to be made by a stockholder must set forth all information required under this Section 2.4(ii) and Section 2.4(iii) and shall be delivered to the secretary of the corporation during business

hours at the principal executive offices of the corporation in accordance with Section 2.4(i)(a).

(b) Such stockholder's notice shall set forth as to each person (each, a "**nominee**") whom the stockholder proposes to nominate for election or re-election as a director:

- (1) the name, age, business address and residence address of the nominee;
- (2) the principal occupation or employment of the nominee;
- (3) the Company Securities that are held of record or are beneficially owned by such nominee and any derivative positions held or beneficially held by the nominee, the date on which each such Company Security was acquired, the investment intent of such acquisition and evidence of such beneficial or record ownership;
- (4) a written questionnaire with respect to the background and qualifications of such nominee completed by the nominee in the form required by the corporation (which form the stockholder shall request in writing from the secretary and which the secretary shall provide to such stockholder within 10 days of receiving such request);
- (5) the nominee's written representation and agreement in the form required by the corporation (which form the stockholder shall request in writing from the secretary and which the secretary shall provide to such stockholder within 10 days of receiving such request) that: (A) such nominee is not, and will not become party to, any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how such person, if elected as a director of the corporation, will act or vote on any issue or question (a "**Voting Commitment**") that has not been disclosed to the corporation or any Voting Commitment that could limit or interfere with such person's ability to comply, if elected as a director of the corporation, with such person's fiduciary duties under applicable law; (B) such nominee is not, and will not become, a party to any agreement, arrangement or understanding with any person or entity other than the corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director that has not been disclosed to the corporation; (C) such nominee would, if elected as a director, comply with applicable law of the exchange upon which the corporation's shares of common stock trade, all of the corporation's corporate governance, ethics, conflict of interest, confidentiality and stock ownership and trading policies

and guidelines applicable generally to the corporation's directors as well as applicable fiduciary duties under state law; (D) if elected as a director of the corporation, such nominee would, at the time of such election, be in compliance with any such policies and guidelines of the corporation that have been publicly disclosed or are publicly available; (E) such nominee intends to serve a full term if elected as a director of the corporation; and (F) such nominee will provide facts, statements and other information in all communications with the corporation and its stockholders that are or will be true and correct in all material respects, and that do not and will not omit to state a material fact necessary in order to make the statements made, in light of the circumstances under which they are made, not misleading;

- (6) a description of all material monetary agreements, arrangements or understandings, and any other material relationships, between or among the stockholders or any Stockholder Associated Person, on the one hand, and such nominee, his or her respective affiliates or associates, and any other person or persons (including their names) acting in concert therewith, on the other hand, including all information that would be required to be disclosed pursuant to Item 404 promulgated under Regulation S-K of the 1934 Act, as if the stockholder making the nomination and any beneficial owner on whose behalf the nomination is made, if any, or any affiliate or associate thereof or person acting in concert therewith, were the "registrant" for purposes of such regulation and the nominee were a director or executive officer of such registrant;
 - (7) any other information that would be required to be disclosed if proxies were being solicited for the election or re-election of the nominee as a director, or that is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including, without limitation, disclosures required in connection with a contested election of directors, and the nominee's written consent to being named in the proxy statement, if any, as a nominee); and
- (c) Such stockholder's notice shall set forth as to the stockholder giving notice:
- (1) the information required to be provided pursuant to clauses (3) through (7) of Section 2.4(i)(b); and
 - (2) a statement whether either such stockholder or a Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of a number of the corporation's voting shares reasonably believed by such stockholder or Stockholder Associated Person to be necessary to elect or re-elect such nominee(s) (such information

provided and statements made as required by this Section 2.4(ii)(c), a “**Nominee Solicitation Statement**”).

(d) At the request of the board of directors, any person nominated by a stockholder for election or re-election as a director must furnish to the secretary of the corporation (1) that information required to be set forth in the stockholder’s notice of nomination of such person as a director as of a date subsequent to the date on which the notice of such person’s nomination was given, (2) such other information as may reasonably be required by the corporation to determine the eligibility of such proposed nominee to serve as an independent director or audit committee financial expert of the corporation under applicable law, securities exchange rule or regulation, or any publicly-disclosed corporate governance guideline or committee charter of the corporation and (3) that could be material to a reasonable stockholder’s understanding of the independence, or lack thereof, of such nominee; in the absence of the furnishing of such information if requested, such stockholder’s nomination shall not be considered in proper form pursuant to this Section 2.4(ii).

(e) Without exception, no person shall be eligible for election or re-election as a director of the corporation at an annual meeting of stockholders unless nominated in accordance with the provisions set forth in this Section 2.4(ii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that a nomination was not made in accordance with the provisions prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the annual meeting, and the defective nomination shall be disregarded.

(iii) *Additional Disclosure Requirements.* For any business or nomination to be properly brought before an annual meeting by a stockholder under Section 2.4(i) and Section 2.4(ii), such stockholder must provide (A) a representation that such stockholder is a holder of record of stock of the corporation and intends to appear in person or by proxy at the meeting to propose such business or nomination; (B) an acknowledgement that if such stockholder does not appear to present such business or nomination, as applicable, at such meeting, the corporation need not present such business or nominee for a vote at such meeting, notwithstanding that proxies in respect of such vote may have been received by the corporation; and (C) as to such stockholder and any Stockholder Associated Person, all other information that would be required to be disclosed in solicitations of proxies in support of such business or nomination or is otherwise required, in each case, pursuant to and in accordance with Section 14(a) of the 1934 Act, and the rules and regulations promulgated thereunder. In addition, the following information must also be provided as to any stockholder giving notice under Section 2.4(i) and Section 2.4(ii), any nominee under Section 2.4(ii) and any Stockholder Associated Person under Section 2.4(i) or Section 2.4(ii):

(a) a complete and accurate description of any agreement, arrangement or understanding, written or oral and formal or informal, between or among (1) the stockholder giving the notice, any nominee and any of the Stockholder Associated Persons or (2) the stockholder giving the notice, any nominee or any of the Stockholder Associated Persons and any other person or entity (naming each such person or entity) with respect to the nomination or proposal, including (x) any proxy, contract, arrangement, understanding or relationship pursuant to which the stockholder giving the notice or the Stockholder Associated Person has the right to vote any shares of any security of the corporation, (y) any understanding, formal or informal, written or oral, that the stockholder giving the notice, any nominee or any of the Stockholder Associated Persons may have reached with any stockholder of the corporation (including their names) with respect to how such stockholder will vote its shares in the corporation at any meeting of the corporation's stockholders or take other action in support of or related to any business proposed or any nominee, or other action to be taken, by the stockholder giving the notice or any of the Stockholder Associated Persons, and (z) any other agreements that would be required to be disclosed by the stockholder giving the notice, nominee or any Stockholder Associated Person or any other person or entity pursuant to Item 5 or Item 6 of a Schedule 13D that would be filed pursuant to the 1934 Act and the rules and regulations promulgated thereunder (regardless of whether the requirement to file a Schedule 13D is applicable to the stockholder giving the notice, nominee or any Stockholder Associated Person or other person or entity);

(b) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of such stockholder, nominee or any Stockholder Associated Person with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit from share price changes for, or to increase or decrease the voting power of, such stockholder, nominee or any Stockholder Associated Person with respect to any securities of the corporation (any of the foregoing, a "**Short Interest**");

(c) any option, warrant, convertible security, stock appreciation right or similar right with an exercise or conversion privilege or a settlement payment or mechanism at a price related to any class or series of the shares of the corporation or with a value derived in whole or in part from the value of any class or series of the shares of the corporation, or any derivative or synthetic arrangement having the characteristics of a long position in any class or series of the shares of the corporation, or any contract, derivative swap or other transaction or series of transactions designed to produce economic benefits and risks that correspond substantially to the ownership of any class or series of the shares of the corporation, including due to the fact that the value of such contract, derivative, swap or other transaction or series of transactions is determined by reference to the price, value or volatility of any class or series of the shares of the corporation, whether or not such instrument, contract or right shall be subject to settlement in the underlying class or series of the shares of the corporation, through the delivery of cash or other property, or otherwise, and without regard to whether such stockholder, nominee or Stockholder Associated Person may have entered into transactions that hedge or mitigate the economic effect of

such instrument, contract or right, or any other direct or indirect opportunity to profit or share in any profit derived from any increase or decrease in the value of shares of the corporation (any of the foregoing, a “**Derivative Instrument**”) that is directly or indirectly owned beneficially by such stockholder, nominee or Stockholder Associated Person and any other direct or indirect opportunity to profit or share in any profit derived from any increase or decrease in the value of shares of the corporation;

(d) any rights to dividends on the shares of the corporation owned beneficially by such stockholder, nominee or Stockholder Associated Person;

(e) any proportionate interest in shares of capital stock of the corporation or Derivative Instruments held, directly or indirectly, by a general or limited partnership or similar entity in which such stockholder, nominee or Stockholder Associated Person (1) is a general partner, or directly or indirectly, beneficially owns an interest in a general partner or (2) is the manager, managing member or directly or indirectly beneficially owns an interest in the manager or managing member of a limited liability company or similar entity;

(f) any significant equity interests or any Derivative Instruments or Short Interests in any entity that provides products or services that compete with or are alternatives to the principal products produced or services provided by the corporation or any affiliate thereof held by such stockholder, nominee or Stockholder Associated Person (collectively, a “**Competitor**”);

(g) any direct or indirect interest of such stockholder, nominee or Stockholder Associated Person in any contract with the corporation or any affiliate thereof, or any Competitor (including, in any such case, any employment agreement, collective bargaining agreement or consulting agreement);

(h) any substantial interest, direct or indirect (including any existing or prospective commercial, business or contractual relationship with the corporation), by security holdings or otherwise, of such stockholder, nominee or Stockholder Associated Person, in the corporation or any affiliate thereof, other than an interest arising from the ownership of Company Securities where such stockholder, nominee or Stockholder Associated Person receives no extra or special benefit not shared on a *pro rata* basis with all other holders of the same class or series;

(i) a complete and accurate description of any performance-related fees (other than an asset-based fee) to which such stockholder, nominee or Stockholder Associated Person may be entitled as a result of any increase or decrease in the value of shares of the corporation or any Derivative Instruments; and

(j) the investment strategy or objective, if any of such stockholder, nominee and each such Stockholder Associated Person who is not an individual.

(iv) *Advance Notice of Director Nominations for Special Meetings.*

(a) Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting pursuant to the corporation's notice of meeting. For a special meeting of stockholders at which directors are to be elected or re-elected, nominations of persons for election or re-election to the board of directors shall be made only (1) by or at the direction of the board of directors or (2) provided that the board of directors has determined that directors shall be elected at such meeting, by any stockholder of the corporation who (A) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(iv) and on the record date for the determination of stockholders entitled to vote at the special meeting and (B) delivers a timely written notice of the nomination to the secretary of the corporation that includes the information set forth in Sections 2.4(ii) and 2.4(iii). To be timely, such notice must be received by the secretary during business hours at the principal executive offices of the corporation not later than 5:00 p.m. Pacific Time on the later of the 90th day prior to such special meeting or the tenth day following the day on which Public Announcement is first made of the date of the special meeting and of the nominees proposed by the board of directors to be elected or re-elected at such meeting. A person shall not be eligible for election or re-election as a director at a special meeting unless the person is nominated (x) by or at the direction of the board of directors or (y) by a stockholder in accordance with the notice procedures set forth in this Section 2.4(iv). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading.

(b) The chairperson of the special meeting shall, if the facts warrant, determine and declare at the meeting that a nomination or business was not made in accordance with the procedures prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the meeting, and the defective nomination or business shall be disregarded.

(v) *General.*

(a) Except as otherwise expressly provided in any applicable rule or regulation promulgated under the 1934 Act, only such persons who are nominated in accordance with the procedures set forth in this Section 2.4 shall be eligible to be elected at an annual or special meeting of stockholders of the corporation to serve as directors and only such business shall be conducted at a meeting of stockholders as shall have been brought before the meeting in accordance with the applicable procedures set forth in this Section 2.4. Except as otherwise provided by law, the chairperson of the meeting shall have the power and duty (1) to determine whether a nomination or any business proposed to be brought before the meeting was made or proposed, as the case may be, in accordance with the procedures set forth in this Section 2.4 (including whether the stockholder or Stockholder Associated Person solicited (or is part of a group that solicited) or did not so solicit, as the case may be, proxies or votes in support of such stockholder's nominee or proposal in compliance with such stockholder's representation as required by Section 2.4(iii)) and (2) if any proposed nomination or business was not made or proposed in compliance with this

Section 2.4, to declare that such nomination shall be disregarded or that such proposed business shall not be transacted. Notwithstanding the foregoing provisions of this Section 2.4, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual or special meeting of stockholders of the corporation to present a nomination or proposed business, such nomination shall be disregarded and such proposed business shall not be transacted, notwithstanding that proxies in respect of such vote may have been received by the corporation. For purposes of this Section 2.4(v), to be considered a qualified representative of the stockholder, a person must be a duly authorized officer, manager or partner of such stockholder or must be authorized by a writing executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such writing or electronic transmission, or a reliable reproduction of the writing or electronic transmission, at the meeting of stockholders.

(b) A stockholder providing notice under this Section 2.4 shall update such notice, if necessary, so that the information provided or required to be provided in such notice shall continue to be true and correct (1) as of the record date for the meeting and (2) as of the date that is 10 business days prior to the meeting (or any postponement or adjournment thereof), and such update shall be delivered to, or mailed and received by, the secretary at the principal executive office of the corporation not later than five business days after the record date for the meeting (in the case of an update required to be made as of the record date) and not later than seven business days prior to the date for the meeting (in the case of an update required to be made as of 10 business days prior to the meeting or any adjournment or postponement thereof).

(c) If information submitted pursuant to this Section 2.4 by any stockholder proposing a nominee for election as a director or any proposal for other business at a meeting of stockholders shall be inaccurate in any respect, such information may be deemed not to have been properly provided in accordance with this Section 2.4. Any such stockholder shall notify the corporation of any inaccuracy or change in any such information within two business days of becoming aware of such inaccuracy or change. Upon written request by the secretary or the board or directors, any such stockholder shall provide, within five business days of delivery of such request (or such other period as may be specified in such request), (1) written verification, reasonably satisfactory to the board of directors or any authorized officer, to demonstrate the accuracy of any information submitted by the stockholder pursuant to this Section 2.4, and (2) a written update of any information (including, if requested by the corporation, written confirmation by such stockholder that such stockholder continues to intend to bring such nomination or other business proposal before the meeting) submitted by the stockholder pursuant to this Section 2.4 as of an earlier date. If a stockholder fails to provide such written verification or written update within such period, the information as to which written verification or a written update was requested shall be deemed not to have been provided in accordance with this Section 2.4.

(vi) *Other Requirements and Rights.* In addition to the foregoing provisions of this Section 2.4, a stockholder must also comply with all applicable requirements of state law and of

the 1934 Act and the rules and regulations thereunder with respect to the matters set forth in this Section 2.4. Nothing in this Section 2.4 shall be deemed to affect any rights of:

(a) a stockholder to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act; or

(b) the corporation to omit a proposal from the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act.

2.5 NOTICE OF STOCKHOLDERS' MEETINGS

Whenever stockholders are required or permitted to take any action at a meeting, a written notice of the meeting shall be given which shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Except as otherwise provided in the DGCL, the certificate of incorporation or these bylaws, the written notice of any meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

2.6 QUORUM

The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders. Where a separate vote by a class or series or classes or series is required, a majority of the outstanding shares of such class or series or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on that matter, except as otherwise provided by law, the certificate of incorporation or these bylaws.

If a quorum is not present or represented at any meeting of the stockholders, then either (i) the chairperson of the meeting, or (ii) the stockholders entitled to vote at the meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

2.7 ADJOURNMENTS AND POSTPONEMENTS; NOTICE

Any meeting of stockholders may be adjourned by the chairperson of the meeting or by the board of directors from time to time for any reason, even if a quorum is present, to reconvene at any other time and any place at which a meeting of stockholders may be held under these bylaws. When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment

is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If a quorum was present at the original meeting, it shall also be deemed present at an adjourned session of such meeting, unless a new record date is, or is required to be, set for the adjourned meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the board of directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 213(a) of the DGCL and Section 2.11 of these bylaws, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting. The board of directors may, at any time prior to the holding of a meeting of stockholders and for any reasonable reason, postpone or cancel such meeting.

2.8 CONDUCT OF BUSINESS

The chairperson of any meeting of stockholders shall prescribe rules, regulations and procedures for stockholder meetings and take all such acts as, in the judgement of such chairperson of the meeting, are appropriate for the proper conduct of the meeting. Such rules, regulations and procedures may include, without limitation, (a) an agenda for the meeting, (b) rules and procedures for maintaining order at the meeting, (c) limitations on attendance at or participation in such meeting to stockholders entitled to vote at the meeting, their duly authorized and constituted proxies and such other persons as the chairperson of the meeting shall permit, (d) restrictions on entry to the meeting after the time fixed for the commencement thereof, (e) limitations on the time allotted to questions or comments by participants, (f) determination of when the polls should remain open and when they should close, (g) removal of any individual who refuses to comply with procedures, rules and guidelines established by the chairperson of the meeting and (h) restrictions on the use of audio/video recording devices, cell phones and other electronic devices. Unless and to the extent determined by the board of directors or the chairperson of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure. The chairperson of any meeting of stockholders shall be designated by the board of directors; in the absence of such designation, the chairperson of the board of directors, the chief executive officer (in the absence of the chairperson of the board of directors), or the president (in the absence of the chief executive officer) shall serve as the chairperson of the stockholder meeting.

2.9 VOTING

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.11 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the DGCL.

Except as may be otherwise provided in the certificate of incorporation or these bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

Except as otherwise required by law, the certificate of incorporation or these bylaws, in all matters other than the election of directors, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the subject

matter shall be the act of the stockholders. Except as otherwise required by law, the certificate of incorporation or these bylaws, directors shall be elected by a plurality of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. Where a separate vote by a class or series or classes or series is required, in all matters other than the election of directors, the affirmative vote of the majority of shares of such class or series or classes or series present in person or represented by proxy at the meeting shall be the act of such class or series or classes or series, except as otherwise provided by law, the certificate of incorporation or these bylaws.

2.10 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Subject to the rights of the holders of the shares of any series of Preferred Stock or any other class of stock or series thereof that have been expressly granted the right to take action by written consent, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of stockholders of the corporation and may not be effected by any consent in writing by such stockholders.

2.11 RECORD DATES

In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the board of directors and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the board of directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the board of directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination.

If no record date is fixed by the board of directors, the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the board of directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance with the provisions of Section 213 of the DGCL and this Section 2.11 at the adjourned meeting.

In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for

determining stockholders for any such purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

2.12 PROXIES

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL. A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the person.

2.13 LIST OF STOCKHOLDERS ENTITLED TO VOTE

The officer who has charge of the stock ledger of the corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; *provided, however*, if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date. The stockholder list shall be arranged in alphabetical order and shall show the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of at least 10 days prior to the meeting (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation's principal place of business. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

2.14 INSPECTORS OF ELECTION

Before any meeting of stockholders, the board of directors shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting may, and upon the request of any stockholder or a stockholder's proxy shall, appoint a person to fill that vacancy.

Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath to execute faithfully the duties of inspector with strict impartiality and according to the best of his or her ability. The inspector or inspectors so appointed and designated shall (i) ascertain the number of shares of capital stock of the corporation outstanding and the voting power of each share, (ii) determine the shares of capital stock of the corporation represented at the meeting and the validity of proxies and ballots, (iii) count all votes and ballots, (iv) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors, (v) certify their determination of the number of shares of capital stock of the corporation represented at the meeting and such inspector or inspectors' count of all votes and ballots, (vi) determine when the polls shall close, (vii) determine the result and (viii) do any other acts that may be proper to conduct the election or vote with fairness to all stockholders.

In determining the validity and counting of proxies and ballots cast at any meeting of stockholders of the corporation, the inspector or inspectors may consider such information as is permitted by applicable law. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all. Any report or certificate made by the inspectors of election is prima facie evidence of the facts stated therein.

2.15 PROXY ACCESS FOR DIRECTOR NOMINATIONS

Subject to the terms of this Section 2.15, the corporation shall include in its proxy statement and form of proxy card (together, "**Proxy Materials**") the name, together with the Required Information (as defined below), of any person nominated for election (a "**Stockholder Nominee**") to the board of directors by a stockholder, or by a group of no more than 20 stockholders, that satisfies the requirements of this Section 2.15 (such stockholder or group of stockholders, including each member thereof to the extent the context so requires, an "**Eligible Stockholder**"), and that expressly elects at the time of providing the notice required by this Section 2.15 (the "**Nomination Notice**") to have its nominee included in the Proxy Materials pursuant to this Section 2.15. In the event that an Eligible Stockholder consists of a group of stockholders, any and all requirements and obligations for an individual Eligible Stockholder that are set forth in these bylaws shall apply to each member of such group, except that the Required Shares (as defined below) shall apply to the ownership of the group in the aggregate. No stockholder or person may be a member of more than one group of persons constituting an Eligible Stockholder under this Section 2.15, and each Eligible Stockholder may only contribute to the Required Shares pursuant to one Nomination Notice each fiscal year. So long as they provide to the secretary of the corporation documentation reasonably satisfactory to the board of directors that demonstrates that the funds satisfy the requirements of this sentence, a group of funds that are (1) under common management and investment control, (2) under common management and funded primarily by the same employer or (3) a "group of investment companies," as such term is defined in Section 12(d)(1)(G)(ii) of the Investment Company Act of 1940, as amended, shall be treated as one stockholder for purposes of determining an Eligible Stockholder and the Required Shares. A record holder acting on behalf of one or more beneficial owners will not be counted separately as a stockholder with respect to the shares owned by beneficial owners on whose behalf such record holder has been directed in writing to act, but each such beneficial owner will be counted separately, subject to the other provisions of this Section 2.15, for purposes of determining the number of stockholders whose holdings may be considered as part of an Eligible Stockholder's holdings.

To be timely, a Nomination Notice must be delivered to or mailed and received by the secretary of the corporation at the principal executive offices of the corporation not less than 120 days nor more than 150 days prior to the first anniversary of the date that the corporation issued its proxy statement to stockholders in connection with the preceding year's annual meeting; *provided, however*, that in the event that no annual meeting was held in the previous year or if the date of the annual meeting is advanced by more than 30 days prior to or delayed by more than 60 days after the one-year anniversary of the date of the previous year's annual meeting, then, for notice by the stockholder to be timely, it must be so received by the secretary not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of (i) the 90th day prior to such annual meeting or (ii) the tenth day following the day on which public announcement of the date of such annual meeting is first made.

For purposes of this Section 2.15, the “**Required Information**” that the corporation will include in its proxy statement is (i) the information provided to the corporation concerning the Stockholder Nominee and the Eligible Stockholder that is required to be disclosed in the corporation's proxy statement by the regulations promulgated under the 1934 Act; and (ii) if the Eligible Stockholder so elects, a Statement (as defined below).

The number of Stockholder Nominees appearing in the Proxy Materials with respect to an annual meeting of stockholders shall not exceed the greater of (a) two or (b) 20% of the number of directors in office as of the last day on which a Nomination Notice may be delivered pursuant to this Section 2.15, or if the number of directors calculated in this sentence is not a whole number, the closest whole number (rounding down) below 20%. The following persons shall be considered Stockholder Nominees for purposes of determining when the maximum number of Stockholder Nominees provided for in this Section 2.15 for an annual meeting of stockholders has been reached: (i) any person elected to the board of directors who was a Stockholder Nominee at a preceding annual meeting and whose remaining term extends beyond the upcoming annual meeting of stockholders; (ii) any Stockholder Nominee whom the corporation decides to nominate as a nominee of the board of directors after a valid Nomination Notice has been submitted by an Eligible Stockholder; (iii) any person nominated in accordance with Section 2.4(ii) (whether or not such nomination is subsequently withdrawn); (iv) any person serving as a director or as a director nominee who, in either case, was elected or appointed to the board of directors or will be included in the Proxy Materials as an unopposed (by the corporation) nominee pursuant to an agreement, arrangement or other understanding with a stockholder or group of stockholders (other than any such agreement, arrangement or understanding entered into in connection with an acquisition of shares of common stock of the corporation by such stockholder or group of stockholders from the corporation), other than any director whose term of office will expire at such annual meeting of stockholders and who is not seeking (or agreeing) to be nominated at such annual meeting of stockholders for another term of office; and (v) any Stockholder Nominee who is subsequently withdrawn. Notwithstanding the previous sentence, in no event will the number of Stockholder Nominees in the Proxy Materials be below one if a Nomination Notice is properly delivered pursuant to this Section 2.15. In no circumstance shall the number of Stockholder Nominees exceed the number of directors to be elected at the annual meeting of stockholders as noticed by the corporation. In the event that the board of directors resolves to reduce the size of the board of directors effective on or prior to the date of the annual meeting of stockholders, the number of Stockholder Nominees shall be calculated based on the number of directors in office as so reduced.

An Eligible Stockholder submitting more than one Stockholder Nominee pursuant to this Section 2.15 shall rank each such Stockholder Nominee based on the order that such Eligible Stockholder desires that such Stockholder Nominees be selected for inclusion in the Proxy Materials. Such ranking must be included in the Nomination Notice. In the event that the number of Stockholder Nominees submitted by Eligible Stockholders pursuant to this Section 2.15 exceeds the maximum number of Stockholder Nominees that the corporation must include in the Proxy Materials, then the highest-ranking qualifying Stockholder Nominee from each Eligible Stockholder will be selected by the corporation for inclusion in the Proxy Materials until the maximum number is reached, going in order of the amount (largest to smallest) of shares of the common stock of the corporation that each Eligible Stockholder disclosed as owned in its respective Nomination Notice. If the maximum number of Stockholder Nominees is not reached after the highest ranking Stockholder Nominee from each Eligible Stockholder has been selected, then this selection process will continue as many times as necessary, following the same order each time, until the maximum number of Stockholder Nominees is reached. Following such determination, if any Stockholder Nominee who satisfies the eligibility requirements in this Section 2.15 thereafter (i) withdraws from the election (or his or her nomination is withdrawn by the applicable Eligible Stockholder) or (ii) is not submitted for director election for any reason (including because of the Eligible Stockholder's or Stockholder Nominee's failure to comply with this Section 2.15), then no other nominee or nominees shall be included in the Proxy Materials or otherwise submitted for director election pursuant to this Section 2.15.

For purposes of this Section 2.15, an Eligible Stockholder shall be deemed to "own" only those outstanding shares of common stock of the corporation as to which the stockholder possesses both (i) the full voting and investment rights pertaining to the shares and (ii) the full economic interest in (including the opportunity for profit and risk of loss on) such shares. The number of shares calculated in accordance with clauses (i) and (ii) of the previous sentence shall not include (and to the extent any of the following arrangements have been entered into by affiliates (as defined below) of the Eligible Stockholder, shall be reduced by) any shares (a) sold by such stockholder or any of its affiliates in any transaction that has not been settled or closed, including any short sale; (b) borrowed by such stockholder or any of its affiliates for any purpose or purchased by such stockholder or any of its affiliates pursuant to an agreement to resell; or (c) subject to any option, warrant, forward contract, swap, contract of sale, or other derivative or similar agreement entered into by such stockholder or any of its affiliates, whether any such instrument or agreement is to be settled with shares or with cash based on the notional amount or value of shares of outstanding common stock of the corporation, in any such case which instrument or agreement has, or is intended to have, the purpose or effect of either or both of (1) reducing in any manner, to any extent or at any time in the future, such stockholder's or its affiliates' full right to vote or direct the voting of any such shares; or (2) hedging, offsetting or altering to any degree gain or loss arising from the full economic ownership of such shares by such stockholder or affiliate. A stockholder shall "own" shares held in the name of a nominee or other intermediary so long as the stockholder retains the right to instruct how the shares are voted with respect to the election of directors and possesses the full economic interest in the shares. A person's ownership of shares of common stock of the corporation shall be deemed to continue during any period in which the person has (A) loaned such shares but only so long as the person (i) has the power to recall such loaned shares on no more than five business days' notice, (ii) recalls such loaned shares back to its own possession not more than five business days after being notified that its Stockholder Nominee will be included in the Proxy Materials and (iii) holds the recalled shares through the

date of the annual meeting of stockholders or any adjournment or postponement thereof; or (B) delegated any voting power by means of a proxy, power of attorney, or other instrument or arrangement that is revocable at any time by the person. The terms “owned,” “owning” and other variations of the word “own” shall have correlative meanings. For purposes of this Section 2.15, “affiliate” shall have the meaning given in Rule 405 under the Securities Act of 1933.

In order to validly submit a Nomination Notice, an Eligible Stockholder must (i) have owned continuously throughout the three-year period preceding and including the date that the Nomination Notice is received at the principal executive offices of the corporation in accordance with this Section 2.15 that number of shares of common stock of the corporation equal to 3% or more of the outstanding common stock of the corporation (the “**Required Shares**”) as of the most recent date for which such outstanding number is disclosed in any filing by the corporation with the Securities and Exchange Commission prior to the date that the Nomination Notice is received at the principal executive offices of the corporation; and (ii) continue to own the Required Shares through the date of the annual meeting of stockholders for which the Nomination Notice was submitted.

With the Nomination Notice, an Eligible Stockholder must provide the following information in writing to the secretary of the corporation:

(i) the Eligible Stockholder’s name and address, and the number of Required Shares owned by such Eligible Stockholder;

(ii) one or more written statements from the record holder of the shares (and from each intermediary through which the shares are or have been held during the requisite three-year holding period) verifying that, within seven days prior to the date that the Nomination Notice is delivered to the corporation, the Eligible Stockholder (including each member of any group of stockholders that together is an Eligible Stockholder) owns, and has owned continuously for the preceding three years, the Required Shares;

(iii) a written statement regarding the Eligible Stockholder’s intent with respect to continued ownership of the Required Shares after the date of the annual meeting of stockholders (it being understood that this statement will not be deemed to impose any obligation on the Eligible Stockholder to hold any of the Required Shares after the date of the annual meeting of stockholders);

(iv) the Eligible Stockholder’s agreement to provide, within five days after (A) the record date for the annual meeting of stockholders (if, prior to such record date, the corporation (1) has made a Public Announcement of such record date or (2) delivered a written notice of such record date (including by electronic mail) to the Eligible Stockholder) or (B) the date on which the corporation delivered to the Eligible Stockholder written notice (including by electronic mail) of such record date (if such notice is provided after such record date), written statements from the record holder and any intermediaries verifying the continuous ownership by such Eligible Stockholder (including each member of any group of stockholders that together is an Eligible Stockholder) of the Required Shares through such record date;

(v) the Eligible Stockholder's agreement to provide prompt notice if it ceases to own any of the Required Shares prior to the date of the annual meeting of stockholders;

(vi) the information (including with respect to the Stockholder Nominees of such Eligible Stockholder) that would be required to be set forth in a stockholder's notice of a nomination pursuant to Section 2.4(i);

(vii) a copy of the Schedule 14N that has been or concurrently is filed with the Securities and Exchange Commission as required by Rule 14a-18 under the 1934 Act, as such rule may be amended;

(viii) for each group, the name, address, phone number and email address of an individual who will act as a representative for the group and is authorized to act on behalf of all such members with respect to the nomination and matters related thereto, including any withdrawal of the nomination;

(ix) a representation that the Eligible Stockholder (including each member of any group of stockholders that together is an Eligible Stockholder) (A) acquired the Required Shares in the ordinary course of business and not with the intent to change or influence control at the corporation, and does not presently have such intent; (B) has not nominated and will not nominate for election to the board of directors at the annual meeting of stockholders any person other than the Stockholder Nominee(s) being nominated pursuant to this Section 2.15; (C) has not engaged and will not engage in, and has not and will not be a "participant" in another person's, "solicitation" within the meaning of Rule 14a-1(l) under the 1934 Act in support of the election of any individual as a director at the annual meeting of stockholders other than its Stockholder Nominee or a nominee of the board of directors; (D) will not distribute to any stockholder any form of proxy for the annual meeting other than the form distributed by the corporation; and (E) intends to own the Required Shares through the date of the annual meeting of stockholders; and

(x) an undertaking that the Eligible Stockholder (including each member of any group of stockholders that together is an Eligible Stockholder) agrees to (A) assume all liability stemming from any legal or regulatory violation arising out of the Eligible Stockholder's communications with the stockholders of the corporation or out of the information that the Eligible Stockholder provided to the corporation; (B) comply with all other laws and regulations applicable to any solicitation in connection with the annual meeting of stockholders; and (C) promptly provide to the corporation prior to the annual meeting of stockholders such additional information as necessary with respect thereto.

For avoidance of doubt, a stockholder may withdraw from a group of stockholders at any time prior to the annual meeting of stockholders. If, as a result of such withdrawal, the Eligible Stockholder no longer owns the Required Shares, then all nominations by such Eligible Stockholder shall be disregarded.

For each of its Stockholder Nominees, an Eligible Stockholder may provide to the secretary of the corporation a single written statement (or, in the case of a group, a single written statement of the group), not to exceed 500 words, for inclusion in the Proxy Materials in support of the candidacy of such Stockholder Nominee (each, a "**Statement**"). Any Statement must be provided at the same

time as, and in connection with, the Nomination Notice in respect of such Stockholder Nominee. Notwithstanding anything to the contrary contained in this [Section 2.15](#), the corporation may omit from the Proxy Materials any information or Statement (or portion thereof) that it, in good faith, believes would violate any applicable law or regulation. Nothing in this [Section 2.15](#) shall limit the corporation's ability to solicit against and include in its Proxy Materials its own statements relating to any Eligible Stockholder or Stockholder Nominee.

With the applicable Nomination Notice, a Stockholder Nominee must deliver to the secretary of the corporation a signed agreement reasonably acceptable to the corporation (a form of which is available from the corporation and will be provided promptly upon the written request of a stockholder) that the Stockholder Nominee (i) consents to being named in the Proxy Materials as a nominee and to serving as a director if elected and will not, with respect to the corporation, agree to be named in any other person's proxy statement or form of proxy card at the applicable annual meeting of stockholders; (ii) is not and will not become a party to any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how such Stockholder Nominee, if elected as a director of the corporation, will act or vote on any issue or question that has not been disclosed to the corporation; (iii) is not, and will not become, a party to any agreement, arrangement or understanding with any person or entity other than the corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director that has not been disclosed to the corporation; and (iv) if elected as a director, will comply with all of the corporation's corporate governance, conflict of interest, confidentiality and stock ownership and trading policies, procedures and guidelines, and any other corporation policies, procedures and guidelines applicable to directors, as well as any applicable law, rule or regulation or listing requirement.

At the request of the corporation, the Stockholder Nominee must promptly, but in any event within five business days after such request, submit all completed and signed questionnaires required of the corporation's directors and officers. The corporation may request such additional information as is reasonably necessary to permit the board of directors to determine if each Stockholder Nominee (i) is independent under the listing standards of the principal U.S. exchange upon which the corporation's common stock is listed, any applicable rules of the Securities and Exchange Commission and any publicly disclosed standards used by the board of directors in determining and disclosing the independence of the corporation's directors (the "**Applicable Independence Standards**"); (ii) has any direct or indirect relationship with the corporation other than those relationships that have been deemed categorically immaterial pursuant to the corporation's corporate governance policy; (iii) would, by serving on the board of directors, violate or cause the corporation to be in violation of these bylaws, the certificate of incorporation, the rules and listing standards of the principal U.S. exchange upon which the corporation's common stock is listed or any applicable law, rule or regulation; or (iv) is or has been subject to any event specified in Item 401(f) of Regulation S-K (or successor rule) of the Securities and Exchange Commission.

If any information or communications provided by the Eligible Stockholder or the Stockholder Nominee to the corporation or its stockholders ceases to be true and correct in all material respects or omits a material fact necessary to make the statements made, in light of the circumstances under which they were made, not misleading, then each Eligible Stockholder or Stockholder Nominee, as the case may be, shall promptly notify the secretary of the corporation of any defect in such previously provided information and of the information that is required to correct any such defect,

it being understood that providing any such notification shall not be deemed to cure any such defect or limit the corporation's right to omit a Stockholder Nominee from the Proxy Materials pursuant to this Section 2.15.

The corporation shall not be required to include any Stockholder Nominees in the Proxy Materials for any annual meeting of stockholders (or, if the Proxy Materials have been filed with the Securities and Exchange Commission, to allow the nomination of (or vote with respect to) a Stockholder Nominee (and may declare such nomination ineligible), notwithstanding that proxies in respect of such annual meeting of stockholders may have been received by the corporation) (i) if the Eligible Stockholder who has nominated such Stockholder Nominee has engaged in or is currently engaged in a, or has been or is a "participant" in another person's, "solicitation" within the meaning of Rule 14a-1(I) under the 1934 Act in support of the election of any individual as a director at the annual meeting of stockholders other than its Stockholder Nominee(s) or a nominee of the board of directors; (ii) who is not independent under the Applicable Independence Standards, as determined in good faith by the board of directors; (iii) whose election as a member of the board of directors would cause the corporation to be in violation of these bylaws, the certificate of incorporation, the listing standards of the principal exchange upon which the corporation's common stock is traded, or any applicable law, rule or regulation; (iv) who is or has been, within the past three years, an officer or director of a competitor, as defined in Section 8 of the Clayton Antitrust Act of 1914, or is presently a nominee for director (or comparable position) at a competitor; (v) who is a named subject of a pending criminal proceeding (excluding traffic violations and other minor offenses) or has been convicted in such a criminal proceeding within the past 10 years; (vi) who is subject to any order of the type specified in Rule 506(d) of Regulation D promulgated under the Securities Act of 1933, as amended; (vii) if such Stockholder Nominee or the Eligible Stockholder shall have provided information to the corporation in respect to such nomination that was untrue in any material respect or omitted to state a material fact necessary in order to make the statement made, in light of the circumstances under which it was made, not misleading; (viii) if the Eligible Stockholder or Stockholder Nominee otherwise contravenes any of the agreements or representations made by such Eligible Stockholder or Stockholder Nominee or fails to comply with its obligations pursuant to this Section 2.15; or (ix) if the Stockholder Nominee dies, become disabled or otherwise becomes ineligible or otherwise unavailable for election at the annual meeting of stockholders. With respect to any Stockholder Nominee who becomes ineligible, the corporation shall not be required to include in the Proxy Materials any successor or replacement nominee proposed by the applicable Eligible Stockholder or any other Eligible Stockholder.

Notwithstanding anything to the contrary set forth in this Section 2.15, the board of directors or the chairperson presiding at the annual meeting of stockholders shall declare a nomination by an Eligible Stockholder to be invalid, and such nomination shall be disregarded notwithstanding that proxies in respect of such annual meeting of stockholders may have been received by the corporation, if the Stockholder Nominee(s), the applicable Eligible Stockholder or both shall have breached its or their obligations, agreements or representations under this Section 2.15.

The Eligible Stockholder (including any person who owns shares of common stock of the corporation that constitute part of the Eligible Stockholder's ownership for purposes of satisfying the requirements of this Section 2.15) shall file with the Securities and Exchange Commission any solicitation of the corporation's stockholders relating to the meeting at which the Stockholder

Nominee will be nominated, regardless of whether any such filing is required under Regulation 14A of the 1934 Act or whether any exemption from filing is available for such solicitation under Regulation 14A of the 1934 Act.

For the avoidance of doubt, this Section 2.15 shall not prevent any stockholder from nominating any person to the board of directors pursuant to and in accordance with Section 2.4(ii).

This Section 2.15 is the exclusive method for stockholders to include nominees for director in the Proxy Materials.

ARTICLE III - DIRECTORS

3.1 POWERS

The business and affairs of the corporation shall be managed by or under the direction of the board of directors, except as may be otherwise provided in the DGCL or the certificate of incorporation.

3.2 NUMBER OF DIRECTORS

The board of directors shall consist of one or more members, each of whom shall be a natural person. Unless the certificate of incorporation fixes the number of directors, the number of directors shall be determined from time to time solely by resolution of the board of directors. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS

Except as provided in Section 3.4 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director's successor is elected and qualified or until such director's earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of incorporation or these bylaws may prescribe other qualifications for directors. If so provided in the certificate of incorporation, the directors of the corporation shall be divided into three classes.

3.4 RESIGNATION AND VACANCIES

Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation; *provided, however*, that if such notice is given by electronic transmission, such electronic transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the director. A resignation is effective when the resignation is delivered unless the resignation specifies a later effective date or an effective date determined upon the happening of an event or events. Acceptance of such resignation shall not be necessary to make it effective. A resignation which is conditioned upon the director failing to receive a specified vote for reelection as a director may provide that it is irrevocable. Unless otherwise provided in the certificate of incorporation or these bylaws, when one or more directors resign from the board of directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such

vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class shall be filled only by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. If the directors are divided into classes, a person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole board of directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the voting stock at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE

The board of directors may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 REGULAR MEETINGS

Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board of directors.

3.7 SPECIAL MEETINGS; NOTICE

Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairperson of the board of directors, the chief executive officer, the president, the secretary or a majority of the authorized number of directors, at such times and places as he or she or they shall designate.

Notice of the time and place of special meetings shall be:

- (i) delivered personally by hand, by courier or by telephone;

- (ii) sent by United States first-class mail, postage prepaid;
- (iii) sent by facsimile; or
- (iv) sent by electronic mail,

directed to each director at that director's address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the corporation's records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least 24 hours before the time of the holding of the meeting; *provided, however*, that if the chairperson of the board of directors or the chief executive officer determines that it is otherwise necessary to hold the meeting sooner, the chairperson of the board of directors or the chief executive officer, as the case may be, may prescribe a shorter notice to be given in person or by telephone, facsimile, electronic mail or any other similar means of communication. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation's principal executive office) nor the purpose of the meeting.

3.8 QUORUM; VOTING

At all meetings of the board of directors, a majority of the total authorized number of directors shall constitute a quorum for the transaction of business. If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present. A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the board of directors, except as may be otherwise specifically provided by statute, the certificate of incorporation or these bylaws.

If the certificate of incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in these bylaws to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of the directors.

3.9 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the board of directors, or of any committee thereof, may be taken without a meeting if all members of the board of directors or committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the board of directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

3.10 FEES AND COMPENSATION OF DIRECTORS

Unless otherwise restricted by the certificate of incorporation or these bylaws, the board of directors shall have the authority to fix the compensation of directors.

3.11 REMOVAL OF DIRECTORS

A director may be removed from office by the stockholders of the corporation only for cause.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director's term of office.

ARTICLE IV - COMMITTEES

4.1 COMMITTEES OF DIRECTORS

The board of directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board of directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in these bylaws, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 COMMITTEE MINUTES

Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

4.3 MEETINGS AND ACTION OF COMMITTEES

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of:

- (i) Section 3.5 (place of meetings and meetings by telephone);
- (ii) Section 3.6 (regular meetings);
- (iii) Section 3.7 (special meetings; notice);

- (iv) Section 3.8 (quorum; voting);
- (v) Section 3.9 (action without a meeting); and
- (vi) Section 7.5 (waiver of notice

with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the board of directors and its members. *However:*

- (i) the time of regular meetings of committees may be determined by resolution of the committee;
- (ii) special meetings of committees may also be called by resolution of the committee; and

(iii) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The board of directors may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

Any provision in the certificate of incorporation providing that one or more directors shall have more or less than one vote per director on any matter shall apply to voting in any committee or subcommittee, unless otherwise provided in the certificate of incorporation or these bylaws.

4.4 SUBCOMMITTEES

Unless otherwise provided in the certificate of incorporation, these bylaws or the resolutions of the board of directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

ARTICLE V - OFFICERS

5.1 OFFICERS

The officers of the corporation shall be a president and a secretary. The corporation may also have, at the discretion of the board of directors, a chairperson of the board of directors, a vice chairperson of the board of directors, a chief executive officer, a chief financial officer or treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS

The board of directors shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Section 5.3 of these bylaws, subject to the rights, if any, of an officer under any contract of employment. A vacancy in any office because of death,

resignation, removal, disqualification or any other cause shall be filled in the manner prescribed in this Section 5.2 for the regular election to such office.

5.3 SUBORDINATE OFFICERS

The board of directors may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the board of directors may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board of directors or, except in the case of an officer chosen by the board of directors, by any officer upon whom such power of removal may be conferred by the board of directors.

Any officer may resign at any time by giving written or electronic notice to the corporation; *provided, however*, that if such notice is given by electronic transmission, such electronic transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the officer. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES

Any vacancy occurring in any office of the corporation shall be filled by the board of directors or as provided in Section 5.3.

5.6 REPRESENTATION OF SHARES OF OTHER CORPORATIONS

The chairperson of the board of directors, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the board of directors or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 AUTHORITY AND DUTIES OF OFFICERS

All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the

board of directors and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the board of directors.

5.8 THE CHAIRPERSON OF THE BOARD OF DIRECTORS

The chairperson of the board of directors shall have the powers and duties customarily and usually associated with the office of the chairperson of the board of directors. The chairperson of the board of directors shall preside at meetings of the board of directors.

5.9 THE VICE CHAIRPERSON OF THE BOARD OF DIRECTORS

The vice chairperson of the board of directors shall have the powers and duties customarily and usually associated with the office of the vice chairperson of the board of directors. In the case of absence or disability of the chairperson of the board of directors, the vice chairperson of the board of directors shall perform the duties and exercise the powers of the chairperson of the board of directors.

5.10 THE CHIEF EXECUTIVE OFFICER

The chief executive officer shall have, subject to the supervision, direction and control of the board of directors, ultimate authority for decisions relating to the supervision, direction and management of the affairs and the business of the corporation customarily and usually associated with the position of chief executive officer, including, without limitation, all powers necessary to direct and control the organizational and reporting relationships within the corporation. If at any time the office of the chairperson and vice chairperson of the board of directors shall not be filled, or in the event of the temporary absence or disability of the chairperson of the board of directors and the vice chairperson of the board of directors, the chief executive officer shall perform the duties and exercise the powers of the chairperson of the board of directors unless otherwise determined by the board of directors.

5.11 THE PRESIDENT

The president shall have, subject to the supervision, direction and control of the board of directors, the general powers and duties of supervision, direction and management of the affairs and business of the corporation customarily and usually associated with the position of president. The president shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board of directors or the chief executive officer. In the event of the absence or disability of the chief executive officer, the president shall perform the duties and exercise the powers of the chief executive officer unless otherwise determined by the board of directors.

5.12 THE VICE PRESIDENTS AND ASSISTANT VICE PRESIDENTS

Each vice president and assistant vice president shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board of directors, the chief executive officer or the president.

5.13 THE SECRETARY AND ASSISTANT SECRETARIES

(i) The secretary shall attend meetings of the board of directors and meetings of the stockholders and record all votes and minutes of all such proceedings in a book or books kept for such purpose. The secretary shall have all such further powers and duties as are customarily and usually associated with the position of secretary or as may from time to time be assigned to him or her by the board of directors, the chairperson of the board of directors, the chief executive officer or the president.

(ii) Each assistant secretary shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board of directors, the chief executive officer, the president or the secretary. In the event of the absence, inability or refusal to act of the secretary, the assistant secretary (or if there shall be more than one, the assistant secretaries in the order determined by the board of directors) shall perform the duties and exercise the powers of the secretary.

5.14 THE CHIEF FINANCIAL OFFICER AND ASSISTANT TREASURERS

(i) The chief financial officer shall be the treasurer of the corporation. The chief financial officer shall have custody of the corporation's funds and securities, shall be responsible for maintaining the corporation's accounting records and statements, shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation, and shall deposit or cause to be deposited moneys or other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the board of directors. The chief financial officer shall also maintain adequate records of all assets, liabilities and transactions of the corporation and shall assure that adequate audits thereof are currently and regularly made. The chief financial officer shall have all such further powers and duties as are customarily and usually associated with the position of chief financial officer, or as may from time to time be assigned to him or her by the board of directors, the chairperson, the chief executive officer or the president.

(ii) Each assistant treasurer shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chief executive officer, the president or the chief financial officer. In the event of the absence, inability or refusal to act of the chief financial officer, the assistant treasurer (or if there shall be more than one, the assistant treasurers in the order determined by the board of directors) shall perform the duties and exercise the powers of the chief financial officer.

ARTICLE VI

- STOCK

6.1 STOCK CERTIFICATES; PARTLY PAID SHARES

The shares of the corporation shall be represented by certificates, provided that the board of directors may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock represented by certificates shall be entitled to have a certificate signed by, or in the name of the corporation by the chairperson of the board of directors or vice-chairperson of the board of directors, or the president or a vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of the corporation representing the number of shares registered

in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent or registrar at the date of issue. The corporation shall not have power to issue a certificate in bearer form.

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly-paid shares, or upon the books and records of the corporation in the case of uncertificated partly-paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully-paid shares, the corporation shall declare a dividend upon partly-paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

6.2 SPECIAL DESIGNATION ON CERTIFICATES

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; *provided, however*, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Within a reasonable time after the issuance or transfer of uncertificated stock, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to this Section 6.2 or Sections 156, 202(a) or 218(a) of the DGCL or with respect to this Section 6.2 a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Except as otherwise expressly provided by law, the rights and obligations of the holders of uncertificated stock and the rights and obligations of the holders of certificates representing stock of the same class and series shall be identical.

6.3 LOST, STOLEN OR DESTROYED CERTIFICATES

Except as provided in this Section 6.3, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that

may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

6.4 DIVIDENDS

The board of directors, subject to any restrictions contained in the certificate of incorporation or applicable law, may declare and pay dividends upon the shares of the corporation's capital stock. Dividends may be paid in cash, in property, or in shares of the corporation's capital stock, subject to the provisions of the certificate of incorporation.

The board of directors may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

6.5 TRANSFER OF STOCK

Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by an attorney duly authorized, and, if such stock is certificated, upon the surrender of a certificate or certificates for a like number of shares, properly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer; *provided, however,* that such succession, assignment or authority to transfer is not prohibited by the certificate of incorporation, these bylaws, applicable law or contract.

6.6 STOCK TRANSFER AGREEMENTS

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

6.7 REGISTERED STOCKHOLDERS

The corporation:

- (i) shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner;
- (ii) shall be entitled to hold liable for calls and assessments the person registered on its books as the owner of shares; and
- (iii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII

- MANNER OF GIVING NOTICE AND WAIVER

7.1 NOTICE OF STOCKHOLDERS' MEETINGS

Notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the corporation's records. An affidavit of the secretary or an assistant secretary of the corporation or of the transfer agent or other agent of the corporation that the notice has been given shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

7.2 NOTICE BY ELECTRONIC TRANSMISSION

Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

- (i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and
- (ii) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice.

However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

- (i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;
- (ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;
- (iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and
- (iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

An “**electronic transmission**” means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

7.3 NOTICE TO STOCKHOLDERS SHARING AN ADDRESS

Except as otherwise prohibited under the DGCL, without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the corporation under the provisions of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any stockholder who fails to object in writing to the corporation, within 60 days of having been given written notice by the corporation of its intention to send the single notice, shall be deemed to have consented to receiving such single written notice.

7.4 NOTICE TO PERSON WITH WHOM COMMUNICATION IS UNLAWFUL

Whenever notice is required to be given under the DGCL, the certificate of incorporation or these bylaws, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

7.5 WAIVER OF NOTICE

Whenever notice is required to be given to stockholders, directors or other persons under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders or the board of directors, as the case may be, need be specified in any written waiver of notice or any waiver by electronic transmission unless so required by the certificate of incorporation or these bylaws.

ARTICLE VIII - INDEMNIFICATION

8.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN THIRD PARTY PROCEEDINGS

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a “**Proceeding**”) (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director of the corporation

or an officer of the corporation, or while a director of the corporation or officer of the corporation is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or Proceeding, had reasonable cause to believe that such person's conduct was unlawful.

8.2 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN ACTIONS BY OR IN THE RIGHT OF THE CORPORATION

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person is or was a director or officer of the corporation, or while a director or officer of the corporation is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation; except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

8.3 SUCCESSFUL DEFENSE

To the extent that a present or former director or officer of the corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding described in Section 8.1 or Section 8.2, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

8.4 INDEMNIFICATION OF OTHERS

Subject to the other provisions of this Article VIII, the corporation shall have power to indemnify its employees and its agents to the extent not prohibited by the DGCL or other applicable law. The board of directors shall have the power to delegate the determination of whether employees or agents shall be indemnified to such person or persons as the board of directors so determines.

8.5 ADVANCED PAYMENT OF EXPENSES

Expenses (including attorneys' fees) incurred by an officer or director of the corporation in defending any Proceeding shall be paid by the corporation in advance of the final disposition of such Proceeding upon receipt of a written request therefor (together with documentation reasonably evidencing such expenses) and an undertaking by or on behalf of the person to repay such amounts if it shall ultimately be determined that the person is not entitled to be indemnified under this Article VIII or the DGCL. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents may be so paid upon such terms and conditions, if any, as the corporation deems reasonably appropriate and shall be subject to the corporation's expense guidelines. The right to advancement of expenses shall not apply to any claim for which indemnity is excluded pursuant to these bylaws, but shall apply to any Proceeding referenced in Section 8.6(ii) or 8.6(iii) prior to a determination that the person is not entitled to be indemnified by the corporation.

8.6 LIMITATION ON INDEMNIFICATION

Subject to the requirements in Section 8.3 and the DGCL, the corporation shall not be obligated to indemnify any person pursuant to this Article VIII in connection with any Proceeding (or any part of any Proceeding):

- (i) for which payment has actually been made to or on behalf of such person under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;
- (ii) for an accounting or disgorgement of profits pursuant to Section 16(b) of the 1934 Act, or similar provisions of federal, state or local statutory law or common law, if such person is held liable therefor (including pursuant to any settlement arrangements);
- (iii) for any reimbursement of the corporation by such person of any bonus or other incentive-based or equity-based compensation or of any profits realized by such person from the sale of securities of the corporation, as required in each case under the 1934 Act (including any such reimbursements that arise from an accounting restatement of the corporation pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "**Sarbanes-Oxley Act**"), or the payment to the corporation of profits arising from the purchase and sale by such person of securities in violation of Section 306 of the Sarbanes-Oxley Act), if such person is held liable therefor (including pursuant to any settlement arrangements);
- (iv) initiated by such person against the corporation or its directors, officers, employees, agents or other indemnitees, unless (a) the board of directors authorized the Proceeding (or the relevant part of the Proceeding) prior to its initiation, (b) the corporation provides the indemnification, in its sole discretion, pursuant to the powers vested in the corporation under applicable law, (c) otherwise required to be made under Section 8.7 or (d) otherwise required by applicable law; or
- (v) if prohibited by applicable law; *provided, however*, that if any provision or provisions of this Article VIII shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (1) the validity, legality and enforceability of the remaining provisions of this

Article VIII (including, without limitation, each portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable, that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (2) to the fullest extent possible, the provisions of this Article VIII (including, without limitation, each such portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

8.7 DETERMINATION; CLAIM

If a claim for indemnification or advancement of expenses under this Article VIII is not paid in full within 90 days after receipt by the corporation of the written request therefor, the claimant shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of expenses. The corporation shall indemnify such person against any and all expenses that are incurred by such person in connection with any action for indemnification or advancement of expenses from the corporation under this Article VIII, to the extent such person is successful in such action, and to the extent not prohibited by law. In any such suit, the corporation shall, to the fullest extent not prohibited by law, have the burden of proving that the claimant is not entitled to the requested indemnification or advancement of expenses.

8.8 NON-EXCLUSIVITY OF RIGHTS

The indemnification and advancement of expenses provided by, or granted pursuant to, this Article VIII shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under the certificate of incorporation or any statute, bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advancement of expenses, to the fullest extent not prohibited by the DGCL or other applicable law.

8.9 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of the DGCL.

8.10 SURVIVAL

The rights to indemnification and advancement of expenses conferred by this Article VIII shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

8.11 EFFECT OF REPEAL OR MODIFICATION

Any amendment, alteration or repeal of this Article VIII shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to such amendment, alteration or repeal.

8.12 CERTAIN DEFINITIONS

For purposes of this Article VIII, references to the “**corporation**” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Article VIII with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued. For purposes of this Article VIII, references to “**other enterprises**” shall include employee benefit plans; references to “**finances**” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “**servicing at the request of the corporation**” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “**not opposed to the best interests of the corporation**” as referred to in this Article VIII.

ARTICLE IX

- GENERAL MATTERS

9.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS

Except as otherwise provided by law, the certificate of incorporation or these bylaws, the board of directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute any document or instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

9.2 FISCAL YEAR

The fiscal year of the corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

9.3 SEAL

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the board of directors. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

9.4 CONSTRUCTION; DEFINITIONS

Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term “**person**” includes both an entity and a natural person.

ARTICLE X - AMENDMENTS

These bylaws may be adopted, amended or repealed by the stockholders entitled to vote; *provided, however*, that the affirmative vote of the holders of at least 66 2/3% of the total voting power of outstanding voting securities, voting together as a single class, shall be required for the stockholders of the corporation to alter, amend or repeal, or adopt any bylaw inconsistent with, the following provisions of these bylaws: Article II, Sections 3.1, 3.2, 3.4 and 3.11 of Article III, Article VIII and this Article X (including, without limitation, any such Article or Section as renumbered as a result of any amendment, alteration, change, repeal, or adoption of any other bylaw). The board of directors shall also have the power to adopt, amend or repeal bylaws; *provided, however*, that a bylaw amendment adopted by stockholders which specifies the votes that shall be necessary for the election of directors shall not be further amended or repealed by the board of directors.

PALO ALTO NETWORKS, INC.

CERTIFICATE OF AMENDMENT OF BYLAWS

The undersigned hereby certifies that he is the duly elected, qualified, and acting Executive Vice President, General Counsel and Secretary of PALO ALTO NETWORKS, INC., a Delaware corporation, and that the foregoing bylaws, comprising 39 pages, were amended and restated on February 21, 2020 by the corporation's board of directors.

IN WITNESS WHEREOF, the undersigned has hereunto set his or her hand this 21st day of February, 2020.

/s/ Jeffrey C. True

Jeffrey C. True

Executive Vice President, General Counsel and
Secretary

**CERTIFICATION PURSUANT TO SECTION 302(a)
OF THE SARBANES-OXLEY ACT OF 2002**

I, Nikesh Arora, certify that:

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

/s/ NIKESH ARORA

Nikesh Arora

Chief Executive Officer and Director

Date: February 24, 2020

**CERTIFICATION PURSUANT TO SECTION 302(a)
OF THE SARBANES-OXLEY ACT OF 2002**

I, Kathleen Bonanno, certify that:

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

/s/ KATHLEEN BONANNO

Kathleen Bonanno
Chief Financial Officer

Date: February 24, 2020

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Nikesh Arora, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Quarterly Report on Form 10-Q of Palo Alto Networks, Inc. for the quarterly period ended January 31, 2020, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that information contained in such Quarterly Report on Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of Palo Alto Networks, Inc.

/s/ NIKESH ARORA

Nikesh Arora

Chief Executive Officer and Director

Date: February 24, 2020

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Kathleen Bonanno, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Quarterly Report on Form 10-Q of Palo Alto Networks, Inc. for the quarterly period ended January 31, 2020, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that information contained in such Quarterly Report on Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of Palo Alto Networks, Inc.

/s/ KATHLEEN BONANNO

Kathleen Bonanno

Chief Financial Officer

Date: February 24, 2020