

Software Market Perspectives

Technology, Media & Telecom Investment Banking

May 2020

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Executive Summary



Public Market Recap

- Public market performance in Q1'2020 was dominated by the emergence of the COVID-19 pandemic
- The year began with a continuation of the momentum from 2019, with major indices reaching all-time highs in February
- However, with the spread of the pandemic impacting economies across the world, Q1 saw the end of an 11-year bull market run. Major U.S. indices dropped 30%+ between market peak on February 19 and the trough on March 23
 - Market volatility also spiked in this period, hitting a peak of 85.5 in March (2019 average was 15.4). YTD VIX average is 33.7
- A combination of government responses (an unprecedented \$7.5tn+ QE monetary stimulus and \$5.5tn+ fiscal stimulus) and a slowdown in infection rates across the world have led to a recovery from the trough, with major U.S. indices up 25%+ from the March 23 nadir
- While not as hard hit as some sectors, the software universe has been impacted by the pandemic, with companies trading an average of ~14% off their February peaks. YTD performance is ~(3%)
- Uncertainty around global economic recovery has led >80% of software companies who have reported earnings in the last month to withdraw or lower their FY2020 guidance

M&A Market Update

- Market volatility stemming from COVID-19 as well as regulatory delays and trade tensions have increased concerns around deal certainty
- Global Technology transaction volumes declined ~45% YoY (as of April 30, 2020)
- Notable software deals announced in Q1 2020:
 - Intuit / Credit Karma (\$7.1bn)
 - Cornerstone / Saba Software (\$1.4bn)
 - BMC / Compuware (\$1.5bn)
 - Salesforce / Vlocity (\$1.3bn)

IPO Overview

- After a very robust 2019 which saw ECM issuance activity at its most robust since 2000, IPO activity ground to a halt in Q1 2020
- However, the pipeline of IPOs continues to be robust, with many marquee companies anticipated to come to market later in 2020 as volatility / uncertainty subsides

COVID-19 Has Significantly Impacted the Markets



The current backdrop has evolved from a public health crisis, developing into broad economic uncertainty as the implications of COVID-19 emerge

Public Health Crisis

~3.8mm worldwide infections to date and growing

Supply/Demand Impact

Economy faced with short term supply constraints and long term demand concerns

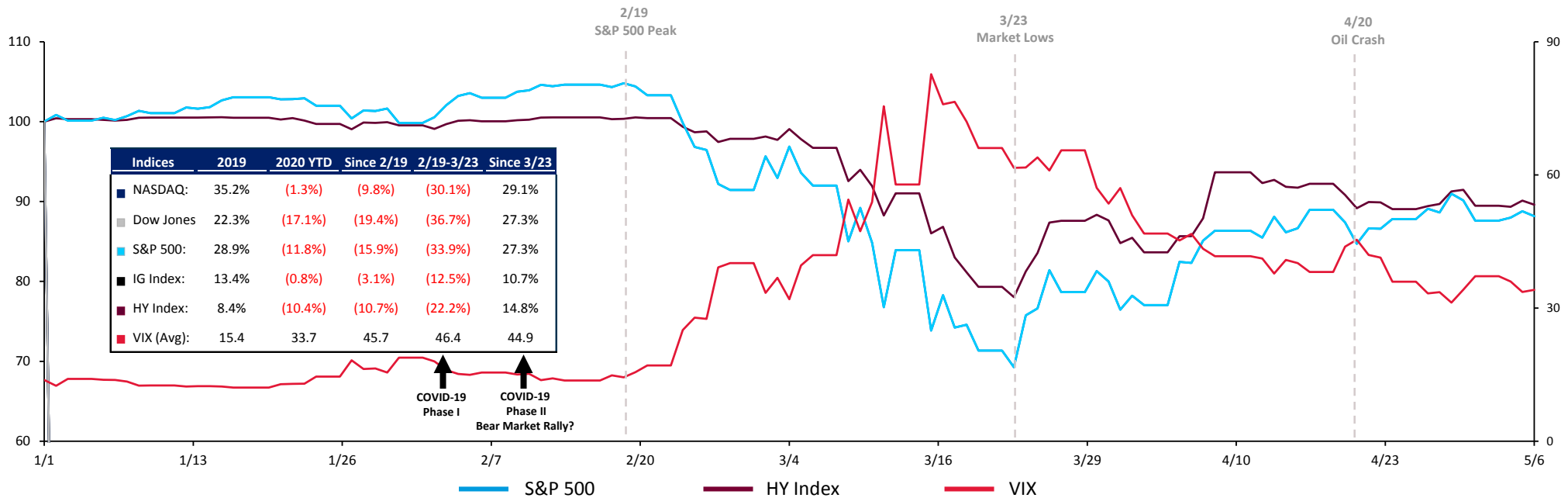
Financial Markets Impact

11 year bull market ended, VIX spiking to all time highs, multiples contracting to recession levels

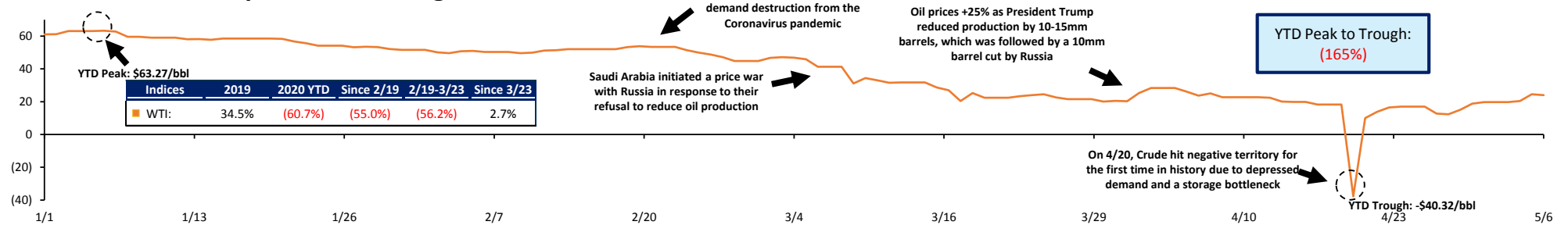
Economic Impact

Full impact of yet to be determined; macro revisions made with focus on corporate revisions to come

Equity and Credit Markets Have Recovered Significantly from Trough

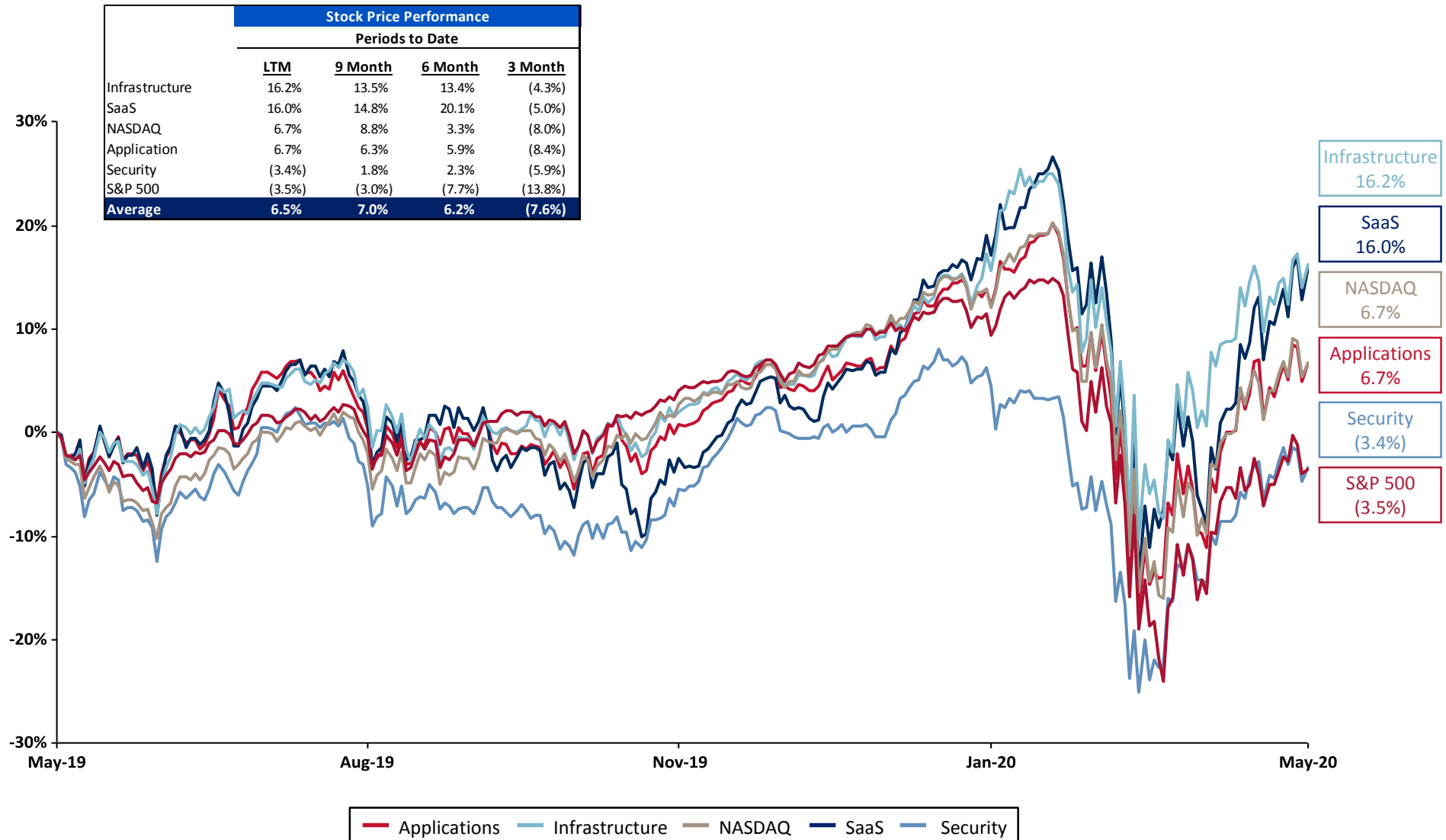


WTI Crude had a Spectacular Plunge Below \$0 a Barrel



Source: Bloomberg as of May 6, 2020.

Technology Stock Price Performance



Source: FactSet as of May 4, 2020.

Note: SaaS includes: (69 Companies): ADBE, ALRM, APPF, BCOV, BL, BNFT, BOX, CDAY, CDNS, COUP, CRM, CRWD, CSLT, CSOD, DDOG, DOMO, ST, ECOM, EGHT, ENV, ESTC, EVBG, FSLY, GWRE, HSTM, HUBS, INST, KXS, LOGM, LPSN, MDB, MDLA, MIME, NET, NEWR, NOW, PAYC, PCTY, PCYG, PD, PFPT, PING, PLAN, PS, QLYS, QTWO, RNG, RP, RPD, SHOP, SNPS, SPRT, SPSC, SREV, TEAM, TEMB, TLND, TMV-DE, TUFN, UPLD, VEEV, VERI, VRNS, WKDAY, WK, XRO, ZEN, ZM and ZUO.

Application Software includes: (85 Companies): ADBE, ADSK, AMSWA, ANSS, APPF, AVL, AVV, BAS1V, BILL, BLKB, CDAY, CDNS, CGM, COUP, CRM, CRNC, CSLT, CSLD, CSU, DOCU, DOMO, DSG, DSY, EBIX, EGHT, EGOV, ENGH, ENV, ESTC, FICO, FIVN, GWRE, HSTM, HUBS, INOV, INST, INTU, IRE, KXS, LPSN, MANH, MDLA, MDSO, MODN, MRIN, NCR, NEM, NICE, OPRA, ORCL, PAYC, PCTY, PCYG, PD, PDFS, PLAN, PRO, PS, PTC, QADA, QTWO, RNG, RP, RST, SAP, SCOR, SGE, SHOP, SIM-DK, SNPS, SPT, SREV, SNMK, TEMN, TNE, TOTS3, TYL, VEEV, VRNT, WDAY, YEXT, ZEM, ZM, ZUO.

Infrastructure includes: (59 Companies): ABT, ADBE, APPN, AXW, AYX, BB, BOX, CLDR, CRWD, CSCO, CTXS, CVLT, DBX, DDOG, DOMO, DT, FSC1V, FSLY, HPE, IBM, JCOM, LOGM, MCRO, MDB, MGIC, MIME, MOBL, MSFT, MSTR, NET, NEWR, NLOK, NOW, NTAP, NTCT, NTNX, NUAN, ORCL, OSPN, OTEX, PEGA, PING, PRGS, SDL, SMAR, SOW, SPLK, SPRT, TDC, TEAM, TLND, TUFN, TWLO, UPLD, VERI, VMW, VRNS, WK, and ZM.

Security Software include: (25 Companies): 4704-JP, ABT-CA, CHKP-US, CVLT-US, CRWD-US, CYBR-US, FEYE-US, FSCT-US, FTNT-US, NET-US, NTAP-US, OKTA-US, OSPN-US, PFPT-US, PING-US, QLYS-US, QTM-US, RPD-US, SAIL-US, SCWX-US, SOPH-GB, SYMC-US, TENB-US, VRSN-US, ZIXI-US.

2019 Tech IPO Class Only Modestly Impacted by Market Volatility



Deal by Deal Statistics of IPOs >\$100mm

Pricing Date	Issuer	Base Deal Value (\$mm)	Diluted Mkt. Value (\$mm)	Deal % of Mkt. Val.	Pricing vs. Range	Revenue		LTM EBITDA Margin	Primary Metric	Valuation			Performance		
						IPO Year + 1 (\$mm)	Growth			Year	At Launch	At Pricing	Offer / 1 Day	Offer / 1 Week	Offer / Current
12/12/19	sproutsocial	150	882	17.0%	Midpoint	131	29%	(20.9%)	Revenue	2020	5.6x	5.6x	(2.4%)	(5.8%)	5.9%
12/11/19	bill.com	216	1,729	12.5%	Above	156	25%	(9.5%)	Revenue	2020	6.5x	8.8x	61.4%	72.9%	199.5%
09/25/19	PELOTON	1,160	9,561	12.1%	Top End	1,851	93%	(19.7%)	Revenue	2020	4.2x	4.4x	(11.2%)	(22.1%)	31.1%
09/24/19	TeamViewer ⁽¹⁾	2,166	5,776	37.5%	Top End	487	14%	46.7%	EBITDA	2020	22.1x	22.6x	(3.6%)	(2.9%)	62.7%
09/18/19	one.com	188	1,227	15.3%	Midpoint	259	15%	18.2%	Revenue	2020	4.7x	4.7x	34.1%	20.0%	75.2%
09/18/19	DATADOG	648	8,707	7.4%	Above	468	67%	(6.3%)	Revenue	2020	13.0x	17.2x	39.1%	30.6%	72.4%
09/12/19	CLOUDFLARE	525	4,796	10.9%	Above	364	42%	(28.4%)	Revenue	2020	8.3x	11.5x	20.0%	25.0%	66.3%
07/31/19	dynatrace	570	4,467	12.8%	Above	607	19%	(1.0%)	Revenue	2020	6.5x	8.1x	49.1%	63.4%	86.3%
07/18/19	Medallia	326	3,591	9.1%	Above	460	24%	(12.8%)	Revenue	2020	5.4x	6.9x	76.4%	97.6%	2.2%
06/27/19	TheRealReal	300	1,819	16.5%	Above	400	42%	(31.8%)	Revenue	2020	4.1x	4.6x	44.5%	27.5%	(40.9%)
06/13/19	chewy	1,023	9,314	11.0%	Above	5,773	35%	(0.7%)	Revenue	2020	1.3x	1.6x	59.1%	55.6%	83.5%
06/12/19	fiverr	111	706	15.7%	Above	126	31%	(30.9%)	Revenue	2020	4.1x	4.6x	90.0%	36.5%	114.3%
06/11/19	CROWDSTRIKE	612	7,696	8.0%	Above	575	69%	(48.6%)	Revenue	2020	7.2x	12.1x	70.6%	125.0%	113.1%
06/06/19	REVOLVE	212	1,292	16.4%	Top End	744	21%	8.4%	EBITDA	2020	14.8x	15.6x	88.9%	124.4%	(43.9%)
05/16/19	fastly	180	1,619	11.1%	Top End	251	33%	(9.0%)	Revenue	2020	5.4x	5.8x	49.9%	40.6%	44.1%
05/09/19	Uber	8,100	82,020	9.9%	Midpoint	18,281	23%	(24.7%)	Revenue	2020	3.7x	3.5x	(7.6%)	(4.4%)	(38.2%)
05/02/19	SciPlay	352	2,020	17.4%	Top End	576	19%	21.6%	EBITDA	2020	10.4x	11.1x	(4.7%)	(3.1%)	(28.6%)
04/17/19	Pinterest	1,425	12,663	11.3%	Above	1,446	42%	(7.2%)	Revenue	2020	6.3x	7.7x	28.4%	41.1%	(6.7%)
04/17/19	zoom	751	10,459	7.2%	Above	734	63%	10.3%	Revenue	2020	11.1x	13.4x	72.2%	75.6%	315.5%
04/10/19	tufin	108	537	20.1%	Top End	132	24%	(3.5%)	Revenue	2020	3.0x	3.2x	36.4%	60.7%	(32.3%)
04/10/19	pagerduty	218	2,076	10.5%	Above	198	34%	(30.7%)	Revenue	2020	7.2x	8.9x	59.4%	66.7%	(8.0%)
03/28/19	lyft	2,340	23,332	10.0%	Above	4,266	52%	(44.7%)	Revenue	2020	4.3x	4.8x	8.7%	0.0%	(63.7%)
03/07/19	lightspeed ⁽¹⁾	205	997	20.6%	Above	141	29%	(15.4%)	Revenue	2020	8.2x	9.4x	13.1%	42.5%	65.0%
Average (22)		\$951	\$8,578	13.9%		\$1,671	37%	(10.4%)			6.0x ⁽²⁾	9.1x ⁽²⁾	37.9%	42.1%	46.7%
Median (22)		\$352	\$3,591	12.1%		\$468	31%	(9.5%)			6.3x ⁽²⁾	7.7x ⁽²⁾	39.1%	40.6%	44.1%

Excluding ZM outperformance in 2020, 2019 Tech IPOs have bounced back, up 3.2% year-to-date

⁴ Source: Dealogic, Factset as of May 1, 2020. Includes SEC registered Technology IPOs with a base deal value greater than or equal to \$100mm. Excludes ADRs.

(1) Marquee European (TeamViewer) and Canadian (Lightspeed) software IPOs included for completeness.

(2) EV / Revenue only.

Technology M&A Overview



Key Themes

- 2019 Technology M&A volume finished **18% higher than 2018**, driven by record number of mega deals
- Market volatility stemming from COVID-19 as well as regulatory delays and trade tensions have increased concerns around deal certainty
- Strong tailwinds and fundamentals continue to support Technology M&A volumes:

1 Focus on growth leading to strategics pursuing scarce assets growing at scale



2 Large private equity entries/exits, especially in software

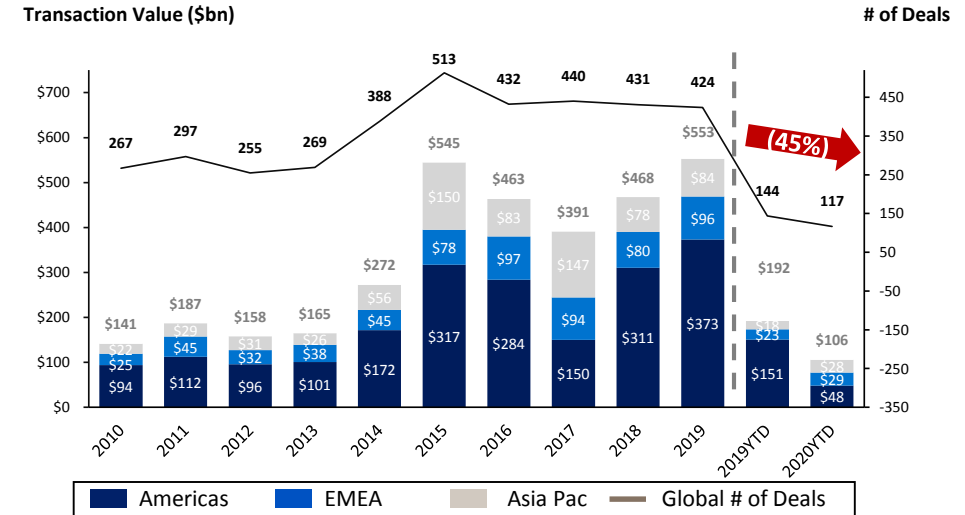


3 Non-tech acquirers aggressively pursuing technology investments



4 High levels of dry powder / strategic cash balances

Global Tech M&A Volume⁽¹⁾⁽²⁾



Significant Tech Transactions

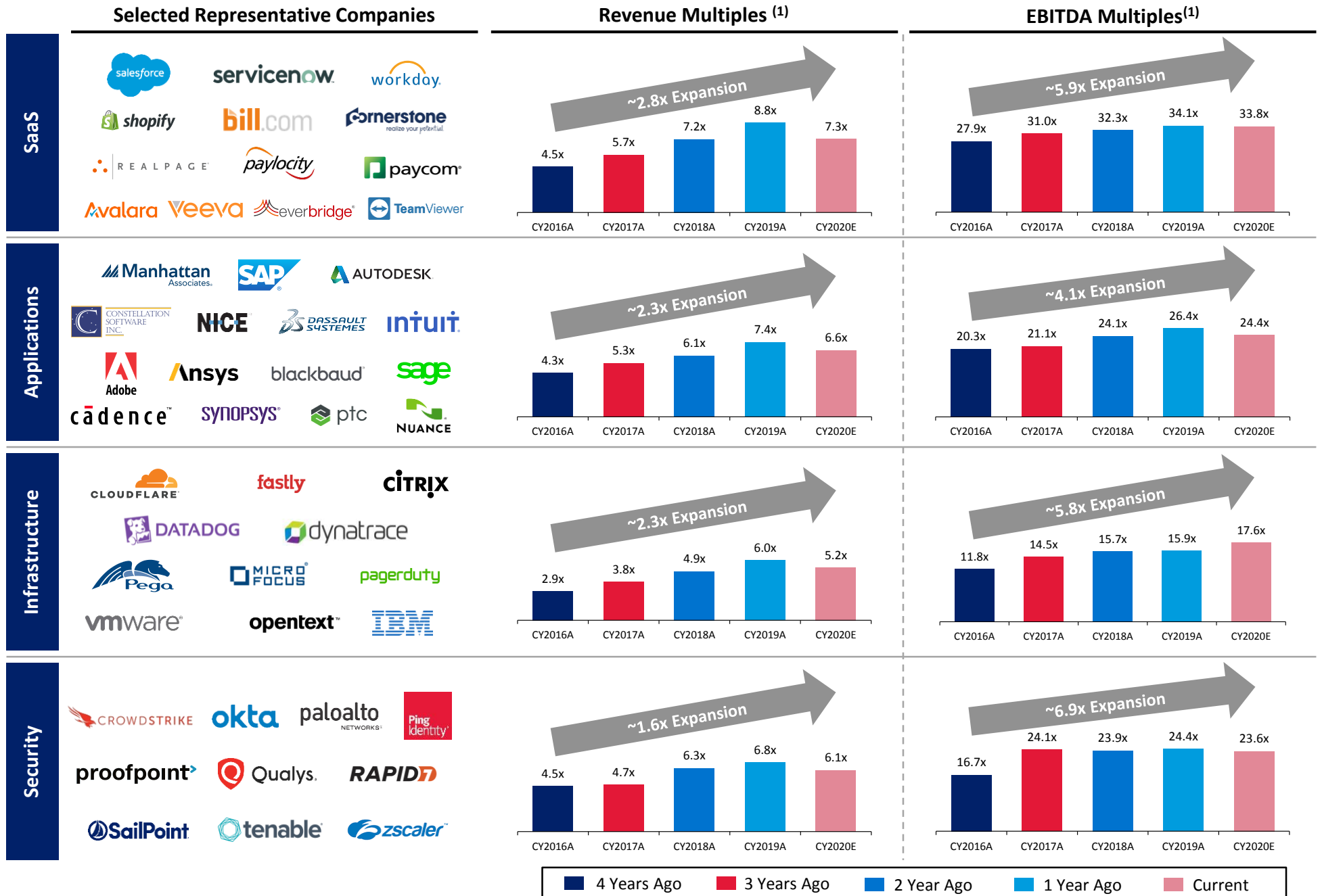
	Date Closed	Acquiror	Target	Value (\$mn)
🐉	Pending	Facebook	Jio	\$5,700
🐉	Pending	Intuit	Credit Karma	7,100
🐉	Pending	FP / Evergreen Coast Capital	LogMeIn	4,400
🐉	Pending	Apollo	TechData	5,977
🐉	4/27/2020	NVIDIA	Mellanox	6,788
🐉	3/2/2020	THOMABRAVO	SOPHOS	3,844
🐉	3/2/2020	INSIGHT PARTNERS	VEEAM	5,000
🐉	1/6/2020	PayPal	Honey	4,000
🐉	11/04/19	BROADCOM	Symantec Enterprise Business	10,700
🐉	09/17/19	globalpayments	TSYS	25,287
🐉	08/01/19	Salesforce	Tableau	15,700
🐉	07/31/19	FIS	Worldpay	43,418
🐉	07/31/19	fiserv	First Data	42,772
🐉	07/09/19	IBM	redhat	33,897
🐉	11/05/18	BROADCOM	ca	18,394

Note: Statistics as of April 30, 2020.

(1) Source: Dealogic Analytics, CB Insights and Thomson Reuters.

(2) M&A volume for each year. Excludes carve-outs, spinoffs, splitoffs, recaps, repurchases and withdrawn deals. Represents announced technology M&A transactions with deal values over \$100mm and acquisition stakes greater than or equal to 50%. Excludes carve-outs, spinoffs, splitoffs, recaps, repurchases and withdrawn deals.

Public Company Valuations Still Markedly Higher Than a Few Years Ago



6 Source: FactSet.
 Note: Market data as of May 4, 2020. Multiples represent CY estimates as of May for each respective time period.
 (1) Revenue and EBITDA multiples represent mean of companies.

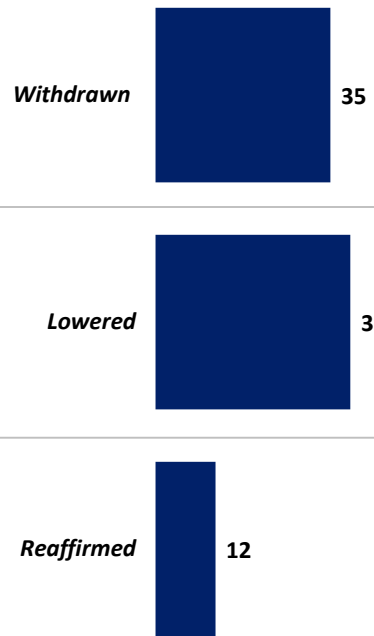
Companies Have Updated Guidance Given Uncertainty

Software Guidance Announcements Since March 2020



COVID-19 Disclosure

■ # of companies

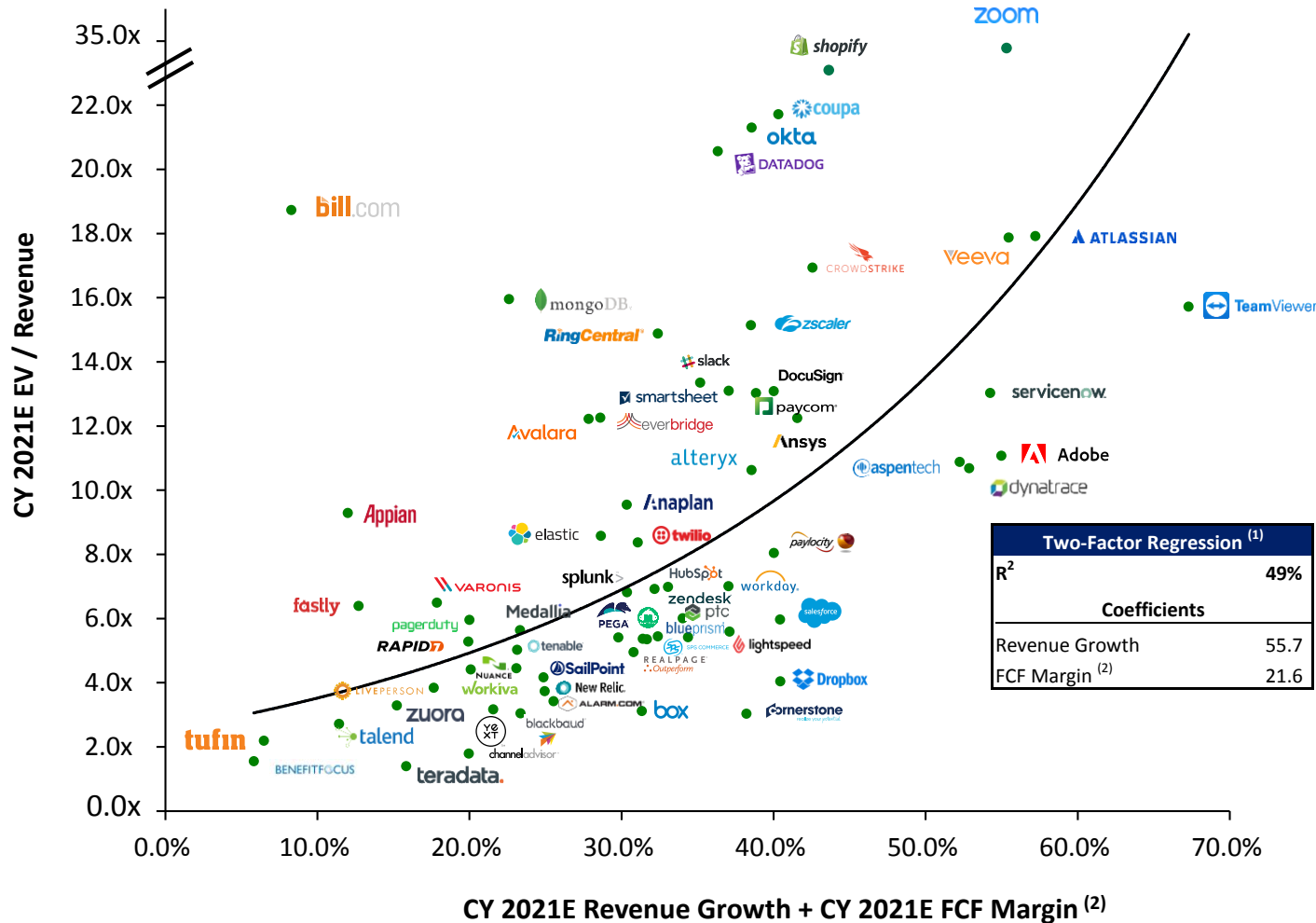


Additional Observations

- Apple and Microsoft were the “earliest canaries in the coal mine” and set the tone for the coming months by pre-announcing revised guidance in February
 - Microsoft announced it did not expect to meet its Personal Computing segment guidance only
- Earnings season commenced in earnest the week of 4/19 and since then, 59 of 69 software companies that provided fiscal year outlooks as of 5/7 have withdrawn or lowered their revenue guidance
 - On 4/8, SAP pre-announced preliminary earnings and guidance revisions two weeks in advance of its scheduled earnings call
 - Microsoft released FQ4’20 segment guidance with wider ranges than normal due to uncertainty with higher end quarterly sales and revenue recognition
 - Citrix expressed caution due to the unknown financial impact of COVID-19 global economic output but raised the top end of its FY2020 outlook
 - ServiceNow lowered subscription revenue and billings guidance due to expected FX headwinds and lower net new ACV but noted that ~80% of FY’20 revenue is contracted and in backlog

Source: Company filings, FactSet and Capital IQ.
 Note: Based on software companies which have made an announcement regarding COVID-19 and earnings between the weeks beginning March 8, 2020 and May 3, 2020.
 (1) Citrix raised the top end of its FY’20 revenue outlook following a strong Q1’20.
 (2) Company raised its FY’20 guidance following a strong Q1’20.

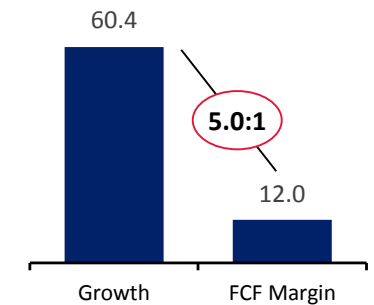
Growth is Still Primary Valuation Driver But Market Placing Greater Importance on Profitability



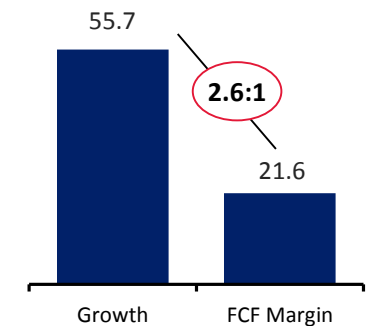
Shift in Coefficients

(i.e. Significance Level)

At Peak
(2/19/2020)



Today
(5/04/2020)



Growth vs. Margin Analysis



		Revenue Growth CY'19E - CY'20E				Median
		<5%	5-15%	15-25%	>25%	
CY'20E EBITDA Margin	>30%	 EV/Revenue: 4.96x EV/EBITDA: 11.0x	 EV/Revenue: 6.92x EV/EBITDA: 18.7x	 EV/Revenue: 12.82x EV/EBITDA: 27.2x	 EV/Revenue: 21.41x EV/EBITDA: 57.7x	EV/Revenue: 9.87x EV/EBITDA: 22.9x
	15-30%	 EV/Revenue: 2.45x EV/EBITDA: 12.1x	 EV/Revenue: 4.32x EV/EBITDA: 19.4x	 EV/Revenue: 7.71x EV/EBITDA: 25.9x	 EV/Revenue: 28.04x EV/EBITDA: 54.1x	EV/Revenue: 4.52x EV/EBITDA: 22.6x
	<15%	 EV/Revenue: 1.65x EV/EBITDA: 17.27x	 EV/Revenue: 4.19x EV/EBITDA: 26.7x	 EV/Revenue: 6.49x EV/EBITDA: 32.0x	 EV/Revenue: 14.57x EV/EBITDA: NA	EV/Revenue: 5.34x EV/EBITDA: 23.1x
Median		EV/Revenue: 2.58x EV/EBITDA: 12.1x	EV/Revenue: 5.00x EV/EBITDA: 19.1x	EV/Revenue: 7.12x EV/EBITDA: 27.2x	EV/Revenue: 14.57x EV/EBITDA: 55.9x	

~4.5x EV/Revenue Expansion

~12.0x EV/Revenue Expansion

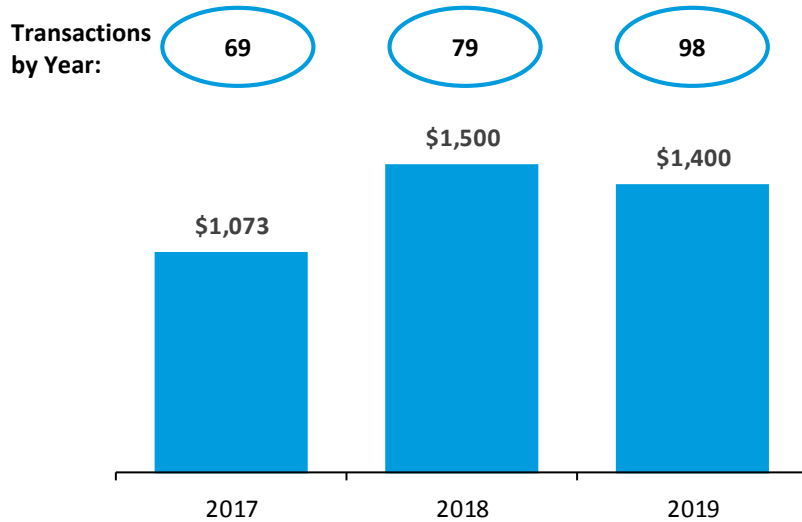
9 Source: FactSet as of May 4, 2020.
 Note: All valuation multiples above represent median values for 2020E. Selected company logos are shown in each box above.
 (1) Revenue growth represents adjusted billings growth.
 (2) EBITDA margin represents cash EBITDA / adjusted billings.

Sponsors Continue to Pay High Valuations for Software

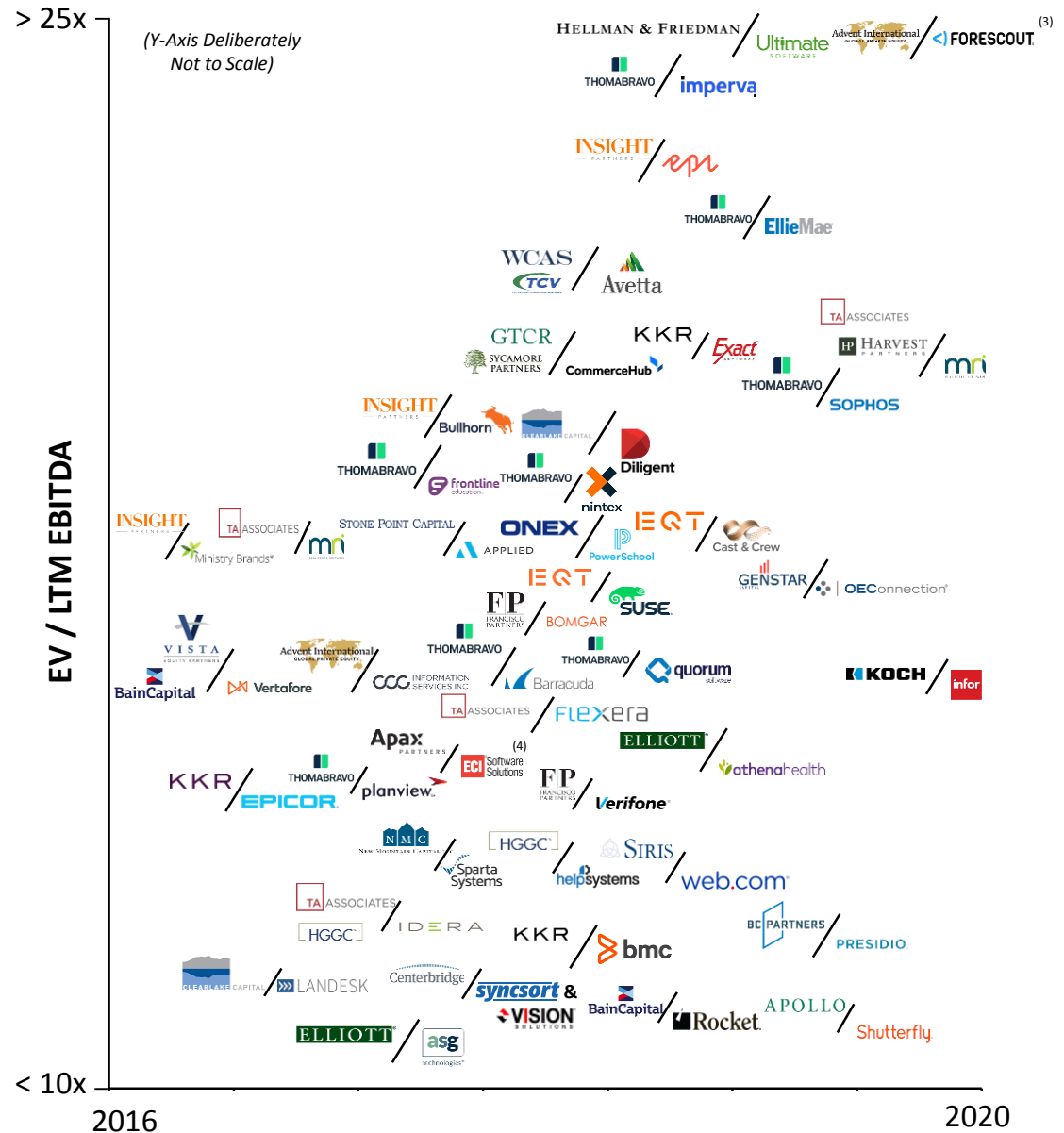
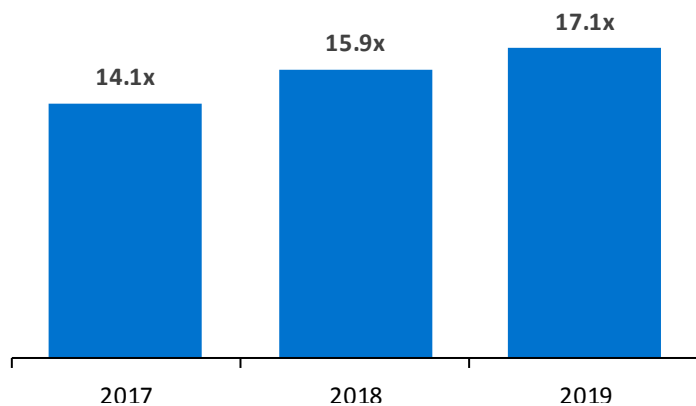


Selected Sponsor-led Software Transactions⁽¹⁾

Median Enterprise Value of Transactions



Median EV / LTM EBITDA Multiples⁽²⁾



Source: Company filings, Dealogic, Pitchbook, FactSet, Wall Street research and other publicly available information.

(1) Includes software transactions with Enterprise Values greater than \$400mm and based in North America in which the acquirer was a Sponsor or a Sponsor-owned portfolio company.

(2) Composed of deals with available financial data. Multiples greater than 40.0x have been excluded.

(3) Forescout's LTM EBITDA was negative at the time of the deal announcement.

(4) Adjusted multiple based on contribution of portion of Exact Software to existing ECI business.

Appendix



Leader in Software Investment Banking



M&A Advisory						Equity / Debt Financing			
<p>Pending</p> <p>\$5,996,000,000</p> <p>Tech Data</p> <p>Agreed to be Acquired by</p> <p>APOLLO</p> <p>Exclusive Financial Advisor to Tech Data Corporation</p>	<p>Pending</p> <p>\$5,000,000,000</p> <p>INSIGHT</p> <p>Has agreed to acquire</p> <p>VEEAM</p> <p>Financing Provider to Insight</p>	<p>March 2020</p> <p>Undisclosed</p> <p>infor</p> <p>Has been acquired by</p> <p>KOCH</p> <p>Financial Advisor to Infor</p>	<p>November 2019</p> <p>\$10,700,000,000</p> <p>BROADCOM</p> <p>Has acquired</p> <p>Symantec</p> <p>Enterprise Business</p> <p>Financial Advisor to Broadcom</p>	<p>October 2019</p> <p>Undisclosed</p> <p>IDS</p> <p>Has been acquired by</p> <p>THOMABRAVO</p> <p>Exclusive Financial Advisor to IDS</p>	<p>September 2019</p> <p>Undisclosed</p> <p>PERMIRA</p> <p>Has acquired</p> <p>axiom</p> <p>Financial Advisor to Permira</p>	<p>April 2020</p> <p>\$9,250,000,000</p> <p>Microsoft</p> <p>Registered Waterfall Exchange Offers</p> <p>Lead Left Dealer Manager</p>	<p>April 2020</p> <p>\$4,000,000,000</p> <p>IBM</p> <p>7-year, 10-year, 20-year & 30-year IG Notes</p> <p>Joint Bookrunner</p>	<p>April 2020</p> <p>\$1,075,000,000</p> <p>Sabre</p> <p>Senior Secured Notes & Exchangeable Notes</p> <p>Structuring Advisor & Joint Bookrunner</p>	<p>April 2020</p> <p>\$400,000,000</p> <p>NCR</p> <p>Senior Notes due 2025</p> <p>Lead Left Bookrunner</p>
<p>August 2019</p> <p>\$16,110,000,000</p> <p>Salesforce</p> <p>Has acquired</p> <p>tableau</p> <p>Exclusive Financial Advisor to Salesforce</p>	<p>August 2019</p> <p>\$1,325,000</p> <p>insurity</p> <p>Has been acquired by</p> <p>GI PARTNERS</p> <p>Financial Advisor to Insurity & TA Associates</p>	<p>July 2019</p> <p>Undisclosed</p> <p>IBM</p> <p>Has agreed to sell its marketing platform and commerce software offerings to</p> <p>Centerbridge</p> <p>Exclusive Financial Advisor to IBM</p>	<p>July 2019</p> <p>~\$1,800,000,000</p> <p>FP PARTNERS</p> <p>PERFORCE</p> <p>Debt & Financial Advisor</p> <p>Financial Advisor & Financing Provider to Francisco Partners</p>	<p>February 2019</p> <p>\$400,000,000</p> <p>NUANCE</p> <p>Has sold its document imaging division to</p> <p>KOFAX</p> <p>Exclusive Financial Advisor to Nuance</p>	<p>January 2019</p> <p>\$2,100,000,000</p> <p>THOMABRAVO</p> <p>Has acquired</p> <p>IMPERVA</p> <p>Lead Left Arranger</p>	<p>March 2020</p> <p>\$20,000,000,000</p> <p>ORACLE</p> <p>5-year, 7-year, 10-year, 20-year, 30-year, 40-year IG Notes</p> <p>Joint Bookrunner</p>	<p>February 2020</p> <p>\$1,000,000,000</p> <p>RingCentral</p> <p>0.00% Convertible Senior Notes due 2025</p> <p>Joint Bookrunner</p>	<p>February 2020</p> <p>\$525,000,000</p> <p>PEGA</p> <p>0.75% Convertible Senior Notes due 2025</p> <p>Joint Bookrunner</p>	<p>February 2020</p> <p>\$862,500,000</p> <p>dynatrace</p> <p>Follow on Offering</p> <p>Joint Bookrunner</p>
<p>December 2018</p> <p>\$950,000,000</p> <p>VERACOIDE</p> <p>Has been acquired by</p> <p>THOMABRAVO</p> <p>Financial Advisor to Veravode</p>	<p>November 2018</p> <p>\$18,394,000,000</p> <p>BROADCOM</p> <p>Has acquired</p> <p>ca technologies</p> <p>Financial Advisor to Broadcom</p>	<p>October 2018</p> <p>\$2,064,660,000</p> <p>web.com</p> <p>Has been acquired by</p> <p>SIRIS</p> <p>Financial Advisor to Web.com</p>	<p>August 2018</p> <p>\$1,550,000,000</p> <p>Adaptive Insights</p> <p>Has been acquired by</p> <p>workday</p> <p>Financial Advisor to Adaptive Insights</p>	<p>May 2018</p> <p>\$6,500,000,000</p> <p>Salesforce</p> <p>Has acquired</p> <p>MuleSoft</p> <p>BoFA Merrill Lynch served as Exclusive Financial Advisor and provided committed debt financing to Salesforce</p>	<p>March 2017</p> <p>\$4,562,000,000</p> <p>Mentor Graphics</p> <p>Has been acquired by</p> <p>SIEMENS</p> <p>Exclusive Sell-side M&A Advisor</p>	<p>January 2020</p> <p>\$750,000,000</p> <p>ptc</p> <p>Senior Notes due 2025 and Senior Notes due 2028</p> <p>Joint Bookrunner</p>	<p>December 2019</p> <p>\$450,000,000</p> <p>everbridge</p> <p>0.125% Convertible Senior Notes due 2024</p> <p>Joint Bookrunner</p>	<p>December 2019</p> <p>\$216,117,638</p> <p>bill.com</p> <p>IPO</p> <p>Lead Bookrunner</p>	<p>September 2019</p> <p>\$3,250,000,000</p> <p>BROADCOM</p> <p>8.00% Mandatory Convertible Preferred due 2022</p> <p>Lead Left Bookrunner</p>
<p>April 2018</p> <p>Undisclosed</p> <p>NINTEX</p> <p>Has been acquired by</p> <p>THOMABRAVO</p> <p>BoFA Merrill Lynch served as Exclusive Sell-Side Financial Advisor</p>	<p>February 2018</p> <p>\$1,900,000,000</p> <p>CISCO</p> <p>Has acquired</p> <p>broadsoft</p> <p>Exclusive Financial Advisor to Cisco</p>	<p>August 2017</p> <p>Undisclosed</p> <p>ECI Software Solutions</p> <p>Has been acquired by</p> <p>Apax / exact</p> <p>Exclusive Financial Advisor to ECI Software</p>	<p>August 2017</p> <p>\$1,260,000,000</p> <p>Centerbridge</p> <p>Has acquired</p> <p>synsort & VISION</p> <p>Financial Advisor & Financing provider to Centerbridge</p>	<p>February 2017</p> <p>\$2,348,000,000</p> <p>Symantec</p> <p>Has acquired</p> <p>LifeLock</p> <p>Financial Advisor to Symantec</p>	<p>December 2016</p> <p>\$1,410,000</p> <p>Ministry Brands</p> <p>Has been acquired by</p> <p>INSIGHT</p> <p>Financial Advisor to Ministry Brands</p>	<p>September 2019</p> <p>\$350,000,000</p> <p>SailPoint</p> <p>0.125% Convertible Senior Notes due 2024</p> <p>Joint Bookrunner & Capped Call Counterparty</p>	<p>September 2019</p> <p>\$2,166,080,000</p> <p>TeamViewer</p> <p>IPO</p> <p>Joint Bookrunner</p>	<p>September 2019</p> <p>\$187,500,000</p> <p>Ping</p> <p>IPO</p> <p>Joint Bookrunner</p>	<p>August 2019</p> <p>\$350,000,000 \$350,000,000</p> <p>alteryx</p> <p>0.50% Convertible & 1.00% Convertible</p> <p>Joint Bookrunner</p>

Selected Notable Technology Activity – Q1 2020



Date	General Technology News
03/31/2020	■ Xerox withdrew hostile bid for HP shares and its proposed slate of directors, citing impact of COVID-19 on the market
03/24/2020	■ Reports surfaced that Softbank plans to sell \$14bn of Alibaba stake
03/16/2020	■ The government of France fined Apple €1.1bn for colluding with two wholesalers to stifle competition and keep prices high
03/13/2020	■ Bill Gates stepped down from Microsoft's board of directors
03/13/2020	■ Softbank announced plan to buyback \$4.8bn in stock
03/09/2020	■ Jack Dorsey remained CEO of Twitter as company reached an agreement with Elliott Management
03/05/2020	■ HP rejected Xerox's tender offer citing that the offer undervalues the company
03/02/2020	■ Google applied for a trade exemption license from the US government, so it can continue working with Huawei
02/27/2020	■ Google announced \$10bn investment in offices and data centers in New York and 10 other states
02/21/2020	■ Amazon has asked a court to provide internal Pentagon documents in JEDI cloud case
02/12/2020	■ Samsung and Microsoft's Xbox announced partnership for the development of a premium cloud-based game streaming experience
01/28/2020	■ Cisco appointed AMD CEO Lisa Su to the board of directors
01/23/2020	■ Amazon filed motion to halt Microsoft's work on Pentagon's JEDI contract
01/16/2020	■ Jeff Bezos announced Amazon's \$1bn investment in India
01/02/2020	■ Google Cloud and Palo Alto Networks extended strategic partnership for strong security solutions

Date	M&A Activity
04/29/2020	■ LendingTree announced a strategic investment in Stash for \$80mm
04/23/2020	■ Apollo Global Management and Silver Lake Group agreed to acquire a 12% stake in Expedia Group
04/21/2020	■ Facebook announced acquisition of 10% stake in Jio Platform for \$5.7bn
04/09/2020	■ Sony announced strategic investment in Bilibili for \$400mm
03/06/2020	■ San Vicente Acquisition agreed to acquire a majority stake in Grindr from Beijing Kunlun Tech
02/25/2020	■ Salesforce announced acquisition of Vlocity for \$1.3bn
02/24/2020	■ Cornerstone OnDemand agreed to acquire Saba Software from Vector Capital for \$1.4bn
02/24/2020	■ Intuit announced acquisition of Credit Karma from Silver Lake Group and Ribbit Capital for \$7.1bn
02/19/2020	■ Dialog Semiconductor agreed to acquire Adesto Technologies for \$500mm
02/18/2020	■ Symphony Technology Group agreed to acquire RSA Security from Dell Technologies for \$2.1bn
02/04/2020	■ Advent International agreed to acquire ForeScout Technologies for \$1.8bn
02/04/2020	■ Koch announced its 100% acquisition of Infor from previous shareholder Golden Gate Capital
02/03/2020	■ Western Digital agreed to sell ActiveScale business to Quantum

Date	Equity Activity
02/27/2020	■ RingCentral raised \$1.0bn through convertible note offering
02/25/2020	■ Yandex raised \$1.3bn in its convertible note offering
02/26/2020	■ Bandwidth raised \$350mm through its convertible note offering
02/20/2020	■ Dynatrace raised \$863mm in its follow-on offering
02/20/2020	■ Pegasystems raised \$600mm through its convertible note offering
01/15/2020	■ Delivery Hero raised \$975mm in its convertible note offering

Software Stock Price Performance

February 19th 2020 vs. May 8th 2020



Company	Share Price % Change
Ebix, Inc.	(44%)
Nutanix, Inc. Class A	(41%)
Micro Focus International plc	(40%)
NCR Corporation	(39%)
* Cornerstone OnDemand, Inc.	(37%)
* Benefitfocus, Inc.	(35%)
PROS Holdings, Inc.	(34%)
Castlight Health, Inc. Class B	(34%)
* Anaplan, Inc.	(33%)
TOTVS S.A.	(33%)
* Blackbaud, Inc.	(31%)
ServiceSource International, Inc.	(31%)
* Zuora, Inc. Class A	(30%)
* Tufin Software Technologies Ltd	(30%)
* Upland Software, Inc.	(28%)
* AVEVA Group plc	(26%)
* Medallia, Inc.	(22%)
SecureWorks Corp. Class A	(22%)
Cloudera, Inc.	(22%)
FireEye, Inc.	(22%)
Aspen Technology, Inc.	(22%)
CDK Global Inc	(22%)
* Paylocity Holding Corp.	(22%)
SDL Plc	(22%)
Verint Systems Inc.	(21%)
Guidewire Software, Inc.	(21%)
Appian Corporation Class A	(20%)
Sage Group plc	(19%)
PTC Inc.	(19%)
Talend SA Sponsored ADR	(19%)
International Business Machines Corporatio	(18%)
Zix Corporation	(18%)
QAD Inc. Class A	(18%)
SailPoint Technologies Holdings, Inc.	(18%)
SAP SE	(17%)
* Domo, Inc. Class B	(17%)
Open Text Corporation	(17%)
MicroStrategy Incorporated Class A	(17%)
* Workday, Inc. Class A	(16%)
J2 Global, Inc.	(16%)
* Paycom Software, Inc.	(16%)
Yext, Inc.	(16%)
Magic Software Enterprises Ltd.	(16%)
NetApp, Inc.	(16%)
* Alteryx, Inc. Class A	(15%)
comScore, Inc.	(15%)
Palo Alto Networks, Inc.	(14%)
Nuance Communications, Inc.	(14%)

Company	Share Price % Change
VMware, Inc. Class A	(14%)
* Ceridian HCM Holding, Inc.	(14%)
* Zendesk, Inc.	(13%)
* AppFolio Inc Class A	(13%)
Progress Software Corporation	(13%)
* Workiva, Inc. Class A	(13%)
Broadcom Inc.	(13%)
* Autodesk, Inc.	(13%)
Cegecim SA	(12%)
Splunk Inc.	(12%)
CommVault Systems, Inc.	(12%)
* Rapid7 Inc.	(12%)
ANSYS, Inc.	(11%)
* Dynatrace, Inc.	(11%)
Intel Corporation	(11%)
Dassault Systemes SA	(11%)
Altair Engineering Inc. Class A	(10%)
NetScout Systems, Inc.	(10%)
SS&C Technologies Holdings, Inc.	(10%)
CyberArk Software Ltd.	(9%)
Alphabet Inc. Class A	(9%)
* salesforce.com, inc.	(9%)
Rosetta Stone Inc.	(9%)
Check Point Software Technologies Ltd.	(9%)
Pegasystems Inc.	(8%)
Intuit Inc.	(8%)
* Xero Limited	(8%)
Trend Micro Incorporated	(7%)
* HubSpot, Inc.	(7%)
Cisco Systems, Inc.	(7%)
* BlackLine, Inc.	(7%)
* Ping Identity Holding Corp.	(7%)
Verisk Analytics Inc	(6%)
Nemetschek SE	(6%)
Manhattan Associates, Inc.	(6%)
* Q2 Holdings, Inc.	(6%)
* Adobe Inc.	(4%)
* New Relic, Inc.	(4%)
Oracle Corporation	(3%)
Synopsys, Inc.	(3%)
* Proofpoint, Inc.	(3%)
Elastic NV	(3%)
ForeScout Technologies, Inc.	(2%)
* MongoDB, Inc. Class A	(2%)
Sapiens International Corporation NV	(2%)
Microsoft Corporation	(1%)
Software AG	(1%)
VeriSign, Inc.	(1%)
Tyler Technologies, Inc.	(0%)

Company	Share Price % Change
* Tenable Holdings, Inc.	(0%)
NICE Ltd	(0%)
* SPS Commerce, Inc.	0%
Constellation Software Inc.	1%
* LivePerson, Inc.	1%
Cadence Design Systems, Inc.	3%
Descartes Systems Group Inc.	3%
OneSpan Inc.	4%
Avast Plc	4%
PDF Solutions, Inc.	5%
Teradata Corporation	5%
Absolute Software Corporation	5%
* ServiceNow, Inc.	5%
* Alarm.com Holdings, Inc.	6%
American Software, Inc. Class A	6%
* Box, Inc. Class A	6%
* RealPage, Inc.	7%
* Avalara Inc	7%
* RingCentral, Inc. Class A	7%
MobileIron, Inc.	9%
* Sprout Social Inc Class A	9%
* Datadog Inc Class A	9%
Amazon.com, Inc.	10%
* PagerDuty, Inc.	12%
Qualys, Inc.	12%
* Coupa Software, Inc.	12%
* Smartsheet, Inc. Class A	12%
* Zscaler, Inc.	14%
NIC Inc.	14%
Fortinet, Inc.	15%
* Atlassian Corp. Plc Class A	16%
* CrowdStrike Holdings, Inc. Class A	16%
* Veeva Systems Inc Class A	17%
* Dropbox, Inc. Class A	19%
* Okta, Inc. Class A	21%
Citrix Systems, Inc.	24%
* DocuSign, Inc.	27%
* Shopify, Inc. Class A	31%
Five9, Inc.	33%
* Bill.com Holdings, Inc.	33%
* TeamViewer AG	35%
* Twilio, Inc. Class A	40%
* Fastly, Inc. Class A	44%
* Cloudflare Inc Class A	46%
* Everbridge, Inc.	48%
* Zoom Video Communications, Inc. Class A	50%
Kinaxis, Inc.	55%
Mean	(5.3%)
Median	(8.5%)

Source: FactSet.

Note: Represents the % change in share price from February 19, 2020 to May 8, 2020.

Software Sector - Change in EV/'20E EBITDA Multiples

February 19th 2020 vs. May 4th 2020



Company	EV / EBITDA	
	As of 5/4/2020	(Decrease) / Increase
Cloudera, Inc.	12.4x	(31.9x)
* Paylocity Holding Corp.	38.0x	(12.7x)
* Cornerstone OnDemand, Inc.	26.6x	(9.4x)
* Benefitfocus, Inc.	16.6x	(9.2x)
* New Relic, Inc.	41.0x	(8.4x)
* AVEVA Group plc	24.9x	(7.6x)
TOTVS S.A.	22.0x	(7.1x)
* Paycom Software, Inc.	38.4x	(6.6x)
Aspen Technology, Inc.	23.9x	(6.5x)
* salesforce.com, inc.	25.8x	(5.7x)
* Blackbaud, Inc.	18.2x	(5.5x)
* Palo Alto Networks, Inc.	26.7x	(5.4x)
* Box, Inc. Class A	20.1x	(5.3x)
PTC Inc.	18.0x	(5.2x)
comScore, Inc.	11.2x	(4.6x)
* Autodesk, Inc.	30.9x	(4.3x)
MicroStrategy Incorporated Class A	8.4x	(3.8x)
CommVault Systems, Inc.	12.7x	(3.6x)
* Upland Software, Inc.	11.5x	(3.5x)
Nuance Communications, Inc.	18.5x	(3.0x)
Altair Engineering Inc. Class A	48.0x	(3.0x)
Manhattan Associates, Inc.	32.7x	(2.9x)
Sage Group plc	15.8x	(2.9x)
* Adobe Inc.	28.0x	(2.9x)
Intuit Inc.	25.7x	(2.8x)
* Alarm.com Holdings, Inc.	19.2x	(2.8x)
ANSYS, Inc.	30.5x	(2.7x)
VMware, Inc. Class A	16.0x	(2.6x)
* Proofpoint, Inc.	53.1x	(2.3x)
Open Text Corporation	12.1x	(2.3x)
Fortinet, Inc.	24.2x	(2.3x)
Zix Corporation	9.8x	(2.1x)
Magic Software Enterprises Ltd.	8.6x	(2.1x)
PDF Solutions, Inc.	26.5x	(2.1x)
* ServiceNow, Inc.	57.2x	(2.0x)
SAP SE	14.3x	(1.8x)
J2 Global, Inc.	8.9x	(1.8x)
Verisk Analytics Inc	21.7x	(1.7x)
Check Point Software Technologies Ltd.	13.5x	(1.7x)
Constellation Software Inc.	18.6x	(1.7x)
Verint Systems Inc.	10.0x	(1.7x)
* SPS Commerce, Inc.	21.5x	(1.7x)
Micro Focus International plc	7.7x	(1.7x)
CDK Global Inc	9.6x	(1.7x)
Dassault Systemes SA	23.2x	(1.6x)
Progress Software Corporation	10.8x	(1.6x)
Sapiens International Corporation NV	18.6x	(1.5x)
FireEye, Inc.	29.9x	(1.5x)

Company	EV / EBITDA	
	As of 5/4/2020	(Decrease) / Increase
NetApp, Inc.	6.4x	(1.5x)
Trend Micro Incorporated	17.4x	(1.3x)
NetScout Systems, Inc.	10.1x	(1.2x)
NCR Corporation	7.0x	(1.2x)
Intel Corporation	8.2x	(1.2x)
SDL Plc	9.9x	(1.2x)
NICE Ltd	20.6x	(1.1x)
Microsoft Corporation	20.0x	(1.1x)
Broadcom Inc.	12.4x	(1.0x)
Descartes Systems Group Inc.	27.7x	(1.0x)
Absolute Software Corporation	13.5x	(0.9x)
Ebix, Inc.	7.7x	(0.8x)
Cisco Systems, Inc.	9.5x	(0.8x)
Cegedim SA	7.3x	(0.7x)
SS&C Technologies Holdings, Inc.	12.2x	(0.5x)
Kinaxis, Inc.	39.2x	(0.5x)
International Business Machines Corporation	10.1x	(0.4x)
Oracle Corporation	11.5x	(0.3x)
* RealPage, Inc.	23.2x	(0.2x)
Avast Plc	14.5x	(0.1x)
Software AG	10.1x	0.0x
* Dropbox, Inc. Class A	16.2x	0.1x
Alphabet Inc. Class A	14.2x	0.1x
Teradata Corporation	8.6x	0.2x
Synopsys, Inc.	22.9x	0.2x
Tyler Technologies, Inc.	40.2x	0.3x
OneSpan Inc.	20.6x	0.8x
Nemetschek SE	41.9x	1.2x
American Software, Inc. Class A	27.1x	1.6x
VeriSign, Inc.	28.8x	1.8x
CyberArk Software Ltd.	38.1x	1.8x
Cadence Design Systems, Inc.	26.8x	2.1x
Citrix Systems, Inc.	19.6x	2.3x
Qualys, Inc.	25.3x	2.5x
NIC Inc.	15.5x	2.6x
QAD Inc. Class A(1)	51.1x	3.0x
Amazon.com, Inc.	25.8x	4.3x
* TeamViewer AG	30.5x	5.5x
* Veeva Systems Inc Class A	57.9x	8.1x
ServiceSource International, Inc.	NM	NM
* Dynatrace, Inc.	51.8x	NM
* Ceridian HCM Holding, Inc.	54.5x	NM
* Workday, Inc. Class A	47.6x	NM
* Xero Limited	NM	NM
* Ping Identity Holding Corp.	NM	NM
SecureWorks Corp. Class A	NM	NM
* HubSpot, Inc.	NM	NM
Rosetta Stone Inc.	NM	NM
Five9, Inc.	NM	NM

Company	EV / EBITDA	
	As of 5/4/2020	(Decrease) / Increase
Talend SA Sponsored ADR	NM	NM
Elastic NV	NM	NM
* Domo, Inc. Class B	NM	NM
Castlight Health, Inc. Class B	NM	NM
Guidewire Software, Inc.	NM	NM
* Sprout Social Inc Class A	NM	NM
* Tufin Software Technologies Ltd	NM	NM
ForeScout Technologies, Inc.	NM	NM
MobileIron, Inc.	NM	NM
* PagerDuty, Inc.	NM	NM
* Tenable Holdings, Inc.	NM	NM
Yext, Inc.	NM	NM
Nutanix, Inc. Class A	NM	NM
* Bill.com Holdings, Inc.	NM	NM
* Everbridge, Inc.	NM	NM
* Zuora, Inc. Class A	NM	NM
* Fastly, Inc. Class A	NM	NM
PROS Holdings, Inc.	NM	NM
* Smartsheet, Inc. Class A	NM	NM
* Anaplan, Inc.	NM	NM
* Medallia, Inc.	NM	NM
* LivePerson, Inc.	NM	NM
* Zscaler, Inc.	NM	NM
* CrowdStrike Holdings, Inc. Class A	NM	NM
Appian Corporation Class A	NM	NM
* MongoDB, Inc. Class A	NM	NM
* Coupa Software, Inc.	NM	NM
* Twilio, Inc. Class A	NM	NM
Splunk Inc.	NM	NM
* Workiva, Inc. Class A	NM	NM
* Shopify, Inc. Class A	NM	NM
* Avalara Inc	NM	NM
SailPoint Technologies Holdings, Inc.	NM	NM
* Datadog Inc Class A	NM	NM
* Okta, Inc. Class A	NM	NM
Pegasystems Inc.	NM	NM
* Cloudflare Inc Class A	NM	NM
* Alteryx, Inc. Class A	NM	NM
* Rapid7 Inc.	NM	NM
* Q2 Holdings, Inc.	NM	NM
* DocuSign, Inc.	NM	NM
* RingCentral, Inc. Class A	NM	NM
* Zendesck, Inc.	NM	NM
* AppFolio Inc Class A	NM	NM
* BlackLine, Inc.	NM	NM
* Atlassian Corp. Plc Class A	NM	NM
* Zoom Video Communications, Inc. Class A	NM	NM

* SaaS Application Security Infrastructure Large Cap

Software Sector - Change in EV/'20E Revenue Multiples

February 19th 2020 vs. May 4th 2020



Company	EV / 2020E Revenue	
	As of 5/4/2020	(Decrease) / Increase
* Anaplan, Inc.	13.0x	(7.8x)
Nutanix, Inc. Class A	6.0x	(7.0x)
* Alteryx, Inc. Class A	14.5x	(4.8x)
* AppFolio Inc Class A	11.9x	(4.3x)
* Medallia, Inc.	7.2x	(3.6x)
* Paylocity Holding Corp.	9.9x	(3.3x)
Appian Corporation Class A	10.6x	(3.3x)
* Paycom Software, Inc.	15.8x	(3.2x)
* AVEVA Group plc	6.8x	(2.8x)
* Workday, Inc. Class A	9.2x	(2.8x)
* Dynatrace, Inc.	13.6x	(2.8x)
Guidewire Software, Inc.	9.4x	(2.7x)
PROS Holdings, Inc.	4.8x	(2.5x)
Aspen Technology, Inc.	11.9x	(2.4x)
* Bill.com Holdings, Inc.	26.7x	(2.4x)
* Cornerstone OnDemand, Inc.	6.0x	(2.4x)
* Ceridian HCM Holding, Inc.	10.6x	(2.3x)
* MongoDB, Inc. Class A	21.4x	(2.0x)
SailPoint Technologies Holdings, Inc.	4.7x	(2.0x)
* HubSpot, Inc.	9.4x	(2.0x)
* Zuora, Inc. Class A	3.7x	(1.9x)
* LivePerson, Inc.	4.9x	(1.9x)
PTC Inc.	5.6x	(1.8x)
Elastic NV	11.3x	(1.8x)
ANSYS, Inc.	13.7x	(1.7x)
* BlackLine, Inc.	9.5x	(1.7x)
* Workiva, Inc. Class A	5.4x	(1.6x)
* Zendesk, Inc.	9.6x	(1.6x)
TOTVS S.A.	4.4x	(1.6x)
Pegasystems Inc.	6.7x	(1.5x)
VMware, Inc. Class A	5.2x	(1.5x)
* Sprout Social Inc Class A	5.8x	(1.5x)
* Autodesk, Inc.	10.5x	(1.5x)
* Tufin Software Technologies Ltd	2.3x	(1.4x)
Splunk Inc.	9.2x	(1.4x)
Yext, Inc.	3.9x	(1.4x)
Palo Alto Networks, Inc.	5.3x	(1.4x)
CyberArk Software Ltd.	7.1x	(1.4x)
* salesforce.com, inc.	7.2x	(1.4x)
* Upland Software, Inc.	4.2x	(1.3x)
Cloudera, Inc.	2.6x	(1.3x)
* Q2 Holdings, Inc.	11.3x	(1.3x)
Kinaxis, Inc.	9.0x	(1.2x)
* Blackbaud, Inc.	3.4x	(1.2x)
* Rapid7 Inc.	7.6x	(1.2x)
FireEye, Inc.	3.0x	(1.1x)
* Twilio, Inc. Class A	11.9x	(1.1x)
Intuit Inc.	9.0x	(1.1x)

Company	EV / 2020E Revenue	
	As of 5/4/2020	(Decrease) / Increase
* Adobe Inc.	13.0x	(1.1x)
* RingCentral, Inc. Class A	21.5x	(1.1x)
Talend SA Sponsored ADR	2.8x	(1.0x)
* Ping Identity Holding Corp.	7.6x	(1.0x)
* Fastly, Inc. Class A	8.4x	(1.0x)
Altair Engineering Inc. Class A	5.1x	(1.0x)
* Domo, Inc. Class B	3.0x	(0.9x)
Check Point Software Technologies Ltd.	6.7x	(0.9x)
Open Text Corporation	4.1x	(0.9x)
Sage Group plc	3.9x	(0.8x)
Dassault Systemes SA	8.2x	(0.8x)
J2 Global, Inc.	3.5x	(0.8x)
Verisk Analytics Inc	10.2x	(0.7x)
SAP SE	4.8x	(0.7x)
Castlight Health, Inc. Class B	0.4x	(0.7x)
Fortinet, Inc.	6.4x	(0.7x)
* New Relic, Inc.	4.5x	(0.7x)
QAD Inc. Class A	2.4x	(0.7x)
Zix Corporation	2.2x	(0.7x)
CDK Global Inc	3.6x	(0.7x)
CommVault Systems, Inc.	2.5x	(0.6x)
* Tenable Holdings, Inc.	6.3x	(0.6x)
Verint Systems Inc.	2.4x	(0.6x)
Intel Corporation	3.7x	(0.6x)
Synopsys, Inc.	6.3x	(0.6x)
Nuance Communications, Inc.	4.6x	(0.6x)
* Alarm.com Holdings, Inc.	3.8x	(0.6x)
Micro Focus International plc	2.8x	(0.6x)
SecureWorks Corp. Class A	1.4x	(0.6x)
Broadcom Inc.	6.8x	(0.6x)
Constellation Software Inc.	5.1x	(0.5x)
NICE Ltd	6.7x	(0.5x)
* SPS Commerce, Inc.	5.8x	(0.5x)
Trend Micro Incorporated	4.2x	(0.5x)
Nemetschek SE	11.5x	(0.5x)
* Benefitfocus, Inc.	1.4x	(0.5x)
Descartes Systems Group Inc.	10.6x	(0.5x)
NetApp, Inc.	1.5x	(0.4x)
Progress Software Corporation	4.4x	(0.4x)
Rosetta Stone Inc.	2.1x	(0.4x)
SS&C Technologies Holdings, Inc.	4.7x	(0.4x)
MicroStrategy Incorporated Class A	1.3x	(0.4x)
* PagerDuty, Inc.	7.4x	(0.4x)
Microsoft Corporation	8.8x	(0.4x)
OneSpan Inc.	2.2x	(0.3x)
Sapiens International Corporation NV	3.2x	(0.3x)
PDF Solutions, Inc.	4.4x	(0.3x)
ServiceSource International, Inc.	0.5x	(0.3x)

Company	EV / 2020E Revenue	
	As of 5/4/2020	(Decrease) / Increase
Cadence Design Systems, Inc.	8.8x	(0.3x)
NCR Corporation	1.0x	(0.3x)
* Datadog Inc Class A	27.1x	(0.3x)
Cisco Systems, Inc.	3.4x	(0.3x)
* Proofpoint, Inc.	7.0x	(0.3x)
* Xero Limited	16.2x	(0.3x)
Magic Software Enterprises Ltd.	1.2x	(0.3x)
Alphabet Inc. Class A	4.8x	(0.2x)
Ebix, Inc.	2.3x	(0.2x)
NetScout Systems, Inc.	2.3x	(0.2x)
International Business Machines Corporation	2.2x	(0.2x)
Absolute Software Corporation	2.8x	(0.2x)
* Box, Inc. Class A	3.3x	(0.2x)
Avast Plc	8.0x	(0.2x)
SDL Plc	1.2x	(0.2x)
comScore, Inc.	0.9x	(0.1x)
Cegedim SA	1.2x	(0.1x)
Oracle Corporation	5.6x	(0.1x)
* RealPage, Inc.	6.3x	(0.1x)
Software AG	2.5x	(0.1x)
VeriSign, Inc.	19.8x	(0.1x)
Tyler Technologies, Inc.	11.1x	(0.1x)
ForeScout Technologies, Inc.	4.6x	(0.0x)
American Software, Inc. Class A	3.7x	(0.0x)
Teradata Corporation	1.5x	0.1x
* Avalara Inc	15.2x	0.1x
Manhattan Associates, Inc.	8.1x	0.1x
Amazon.com, Inc.	3.4x	0.1x
* ServiceNow, Inc.	16.8x	0.2x
MobileIron, Inc.	2.6x	0.2x
NIC Inc.	3.6x	0.5x
* Dropbox, Inc. Class A	4.4x	0.5x
* Coupa Software, Inc.	30.8x	0.6x
Citrix Systems, Inc.	6.5x	0.9x
* Zscaler, Inc.	20.1x	0.9x
* Everbridge, Inc.	16.1x	1.0x
Qualys, Inc.	10.9x	1.1x
* CrowdStrike Holdings, Inc. Class A	22.9x	1.3x
* Smartsheet, Inc. Class A	17.6x	1.3x
* Atlassian Corp. Plc Class A	22.8x	1.9x
* DocuSign, Inc.	18.1x	2.1x
* Okta, Inc. Class A	29.2x	2.4x
Five9, Inc.	18.0x	2.8x
* Veeva Systems Inc Class A	21.6x	3.0x
* TeamViewer AG	17.6x	3.1x
* Cloudflare Inc Class A	18.5x	5.0x
* Shopify, Inc. Class A	37.8x	8.6x
* Zoom Video Communications, Inc. Class A	45.9x	10.5x

* SaaS Application Security Infrastructure Large Cap

Large Cap Technology Benchmark



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &			'20-'21			2021E	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)	2020E	2021E	Growth	2020E	2021E	Margin	2020E	2021E	2020E	2021E	2020E	2021E
Large Cap Technology Benchmark																
Amazon.com, Inc.	93.6%	\$1,155,160	\$1,183,737	\$49,574	\$344,130	\$404,749	17.6%	\$44,914	\$60,518	15.0%	3.44x	2.92x	26.4x	19.6x	54.4x	32.9x
Alphabet Inc. Class A	86.4%	903,038	802,613	117,229	170,490	204,698	20.1%	57,662	71,371	34.9%	4.71x	3.92x	13.9x	11.2x	43.5x	32.6x
Intel Corporation	83.7%	246,229	265,345	20,803	73,401	73,731	0.4%	34,354	34,229	46.4%	3.61x	3.60x	7.7x	7.8x	16.3x	14.5x
Cisco Systems, Inc.	71.0%	175,360	165,348	27,083	49,429	50,882	2.9%	17,821	18,110	35.6%	3.35x	3.25x	9.3x	9.1x	12.0x	11.4x
International Business Machines Corporation	76.6%	108,039	165,619	12,017	72,745	74,353	2.2%	16,373	18,258	24.6%	2.28x	2.23x	10.1x	9.1x	9.6x	9.6x
Broadcom Inc.	79.1%	105,685	144,651	6,444	23,733	24,964	5.2%	13,138	14,257	57.1%	6.09x	5.79x	11.0x	10.1x	10.0x	8.7x
Mean							8.1%			35.6%	3.91x	3.62x	13.1x	11.2x	24.3x	18.3x
Median							4.1%			35.2%	3.53x	3.42x	10.6x	9.6x	14.1x	12.9x
Large Cap Software																
Microsoft Corporation	93.8%	\$1,356,222	\$1,302,621	\$137,626	\$149,687	\$167,094	11.6%	\$68,716	\$76,198	45.6%	8.70x	7.80x	19.0x	17.1x	33.4x	29.5x
Adobe Inc.	90.3%	168,201	168,741	4,171	13,166	15,237	15.7%	6,207	7,246	47.6%	12.82x	11.07x	27.2x	23.3x	32.4x	28.3x
SAP	85.5%	166,299	194,564	25,858	39,230	39,972	1.9%	19,089	19,445	48.6%	4.96x	4.87x	10.2x	10.0x	13.7x	12.7x
SAP SE	82.7%	138,940	149,714	8,576	30,635	32,949	7.6%	10,041	11,380	34.5%	4.89x	4.54x	14.9x	13.2x	30.7x	24.0x
Mean							9.2%			44.1%	7.84x	7.07x	17.8x	15.9x	27.6x	23.6x
Median							9.6%			46.6%	6.83x	6.33x	16.9x	15.1x	31.6x	26.2x
Large Cap Technology Mean							8.4%			39.7%	4.97x	4.59x	14.0x	12.3x	26.7x	20.8x
Large Cap Technology Median							6.4%			40.6%	4.80x	4.23x	12.5x	10.7x	23.5x	19.2x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

Note: Dollars in USD Millions. NM represents multiples less than zero or greater than 60.0x.

(1) Market Capitalization based on diluted shares outstanding calculated using treasury stock method.

(2) Enterprise Value defined as Market Capitalization plus Total Debt, Minority Interest and Preferred Stock, less Cash & Cash Equivalents.

(3) Free Cash Flow = Cash from Operations – Capital Expenditure.

Infrastructure Software

Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High 5/4/20	Market Cap. (\$M) ⁽¹⁾	Enterprise Val. (\$M) ⁽²⁾	Cash & Equiv. (\$M)	2020E	2021E	'20-'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
											2020E	2021E	2020E	2021E	2020E	2021E
Systems Management																
International Business Machines Corporation	76.6%	\$108,039	\$165,619	\$12,017	\$72,745	\$74,353	2.2%	\$16,373	\$18,258	24.6%	2.28x	2.23x	10.1x	9.1x	9.6x	9.6x
ServiceNow, Inc.	93.4%	71,068	70,409	1,863	4,348	5,402	24.3%	1,301	1,633	30.2%	16.19x	13.03x	54.1x	43.1x	61.4x	48.3x
VMware, Inc. Class A	61.1%	52,994	56,658	2,998	11,531	12,742	10.5%	3,882	4,347	34.1%	4.91x	4.45x	14.6x	13.0x	14.2x	13.3x
Citrix Systems, Inc.	96.0%	18,063	19,696	551	3,182	3,276	3.0%	1,054	1,103	33.7%	6.19x	6.01x	18.7x	17.9x	19.0x	17.2x
New Relic, Inc.	47.7%	3,102	2,858	737	656	766	16.7%	89	107	14.0%	4.36x	3.73x	32.0x	26.7x	NM	78.1x
Fastly, Inc. Class A	62.4%	2,281	2,110	201	260	336	29.4%	(19)	(1)	(0.4%)	8.13x	6.28x	NM	NM	NM	NM
NetScout Systems, Inc.	86.1%	1,883	2,067	345	893	935	4.8%	201	215	23.0%	2.32x	2.21x	10.3x	9.6x	15.1x	10.4x
PagerDuty, Inc.	34.8%	1,826	1,475	351	203	248	22.0%	(20)	(12)	(5.0%)	7.27x	5.96x	NM	NM	NM	NM
MobileIron, Inc.	60.7%	547	463	99	195	210	7.5%	(12)	(10)	(4.7%)	2.37x	2.21x	NM	NM	NA	NA
Cheetah Mobile, Inc. ADR Class A	31.6%	269	227	48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mean							13.4%			16.6%	6.00x	5.12x	23.3x	19.9x	23.9x	29.5x
Median							10.5%			23.0%	4.91x	4.45x	16.6x	15.4x	15.1x	15.3x
Business Intelligence / Analytics / Data Management																
Splunk Inc.	76.5%	\$21,533	\$21,728	\$1,755	\$2,539	\$3,185	25.4%	\$112	\$378	11.9%	8.56x	6.82x	NM	57.5x	NM	NM
MongoDB, Inc. Class A	86.6%	10,270	10,271	987	505	644	27.5%	(53)	(39)	(6.0%)	20.34x	15.96x	NM	NM	NA	NA
Alteryx, Inc. Class A	69.2%	7,627	7,574	787	541	703	30.0%	81	130	18.5%	14.00x	10.77x	NM	58.3x	NM	84.5x
Elastic NV	60.6%	6,062	5,802	296	514	676	31.5%	(70)	(75)	(11.1%)	11.28x	8.58x	NM	NM	NM	NM
J2 Global, Inc.	72.4%	3,744	4,748	576	1,459	1,553	6.4%	572	615	39.6%	3.25x	3.06x	8.3x	7.7x	NA	NA
Teradata Corporation	57.7%	2,558	2,731	494	1,860	1,941	4.4%	323	388	20.0%	1.47x	1.41x	8.5x	7.0x	18.1x	13.2x
Cloudera, Inc.	63.1%	2,300	2,150	361	855	933	9.1%	177	223	23.9%	2.51x	2.30x	12.2x	9.6x	33.0x	18.2x
MicroStrategy Incorporated Class A	71.8%	1,158	725	542	475	NA	NA	44	NA	NA	1.53x	NA	16.7x	NA	NA	NA
Domo, Inc. Class B	46.4%	525	527	99	186	204	10.1%	(64)	(43)	(21.2%)	2.84x	2.58x	NM	NM	NM	NM
Mean							18.1%			9.4%	7.31x	6.43x	11.4x	28.0x	25.5x	38.6x
Median							17.7%			15.2%	3.25x	4.94x	10.3x	9.6x	25.5x	18.2x
Content Management																
Adobe Inc.	90.3%	\$168,201	\$168,741	\$4,171	\$13,166	\$15,237	15.7%	\$6,207	\$7,246	47.6%	12.82x	11.07x	27.9x	23.3x	32.4x	28.3x
Open Text Corporation	79.8%	10,389	13,408	1,453	3,220	3,362	4.4%	1,179	1,292	38.4%	4.16x	3.99x	11.4x	10.4x	14.6x	NA
Dropbox, Inc. Class A	75.9%	8,532	8,379	1,159	1,855	2,068	11.5%	506	590	28.5%	4.52x	4.05x	16.6x	14.2x	18.7x	15.8x
Nuance Communications, Inc.	82.3%	5,492	6,794	503	1,491	1,556	4.3%	358	381	24.5%	4.56x	4.37x	19.0x	17.8x	NA	NA
Box, Inc. Class A	73.0%	2,369	2,598	196	756	833	10.3%	112	158	19.0%	4.85x	3.12x	23.1x	16.4x	NA	13.6x
Workiva, Inc. Class A	58.8%	1,874	1,703	496	335	385	15.2%	(22)	(17)	(4.4%)	5.09x	4.42x	NM	NM	NM	NM
Upland Software, Inc.	54.1%	759	1,118	175	270	288	6.4%	100	107	37.2%	4.13x	3.88x	11.2x	10.4x	46.8x	12.2x
SDL Plc	69.1%	530	535	35	433	466	7.6%	52	66	14.2%	1.24x	1.15x	12.2x	8.1x	NM	65.1x
Mean							9.4%			25.6%	5.17x	4.51x	17.3x	14.4x	28.1x	27.0x
Median							8.9%			26.5%	4.54x	4.02x	16.6x	14.2x	25.6x	15.8x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

Note: Dollars in USD Millions. NM represents multiples less than zero or greater than 60.0x.

- 17 (1) Market Capitalization based on diluted shares outstanding calculated using treasury stock method.
(2) Enterprise Value defined as Market Capitalization plus Total Debt, Minority Interest and Preferred Stock, less Cash & Cash Equivalents.
(3) Free Cash Flow = Cash from Operations – Capital Expenditure.

Infrastructure Software (Cont'd)

Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &	2020E	2021E	'20'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)							2020E	2021E	2020E	2021E	2020E	2021E
Application Development and Deployment																
Zoom Video Communications, Inc. Class A	79.0%	\$42,338	\$41,507	\$904	\$908	\$1,236	36.1%	\$200	\$248	20.1%	NM	NM	NM	NM	NM	NM
Atlassian Corp. Plc Class A	92.6%	40,500	39,579	2,072	1,780	2,209	24.1%	446	549	24.9%	22.24x	17.92x	NM	72.0x	73.5x	56.8x
Twilio, Inc. Class A	75.0%	16,784	15,572	1,853	1,422	1,819	27.9%	34	120	6.6%	10.95x	8.56x	NM	NM	NM	NM
Datadog Inc Class A	91.4%	14,799	14,085	774	532	707	33.0%	(8)	13	1.9%	NM	19.91x	NM	NM	NM	NM
Dynatrace, Inc.	76.2%	7,935	8,287	189	629	781	24.2%	158	196	25.1%	13.17x	10.61x	50.4x	42.2x	75.6x	58.0x
Cloudflare Inc Class A	85.8%	7,528	6,902	637	386	506	31.1%	(29)	1	0.2%	17.90x	13.65x	NM	NM	NM	NM
Pegasystems Inc.	79.0%	6,795	6,826	538	1,061	1,261	18.8%	27	101	8.0%	6.43	5.4x	NM	67.3x	NA	NA
Smartsheet, Inc. Class A	95.6%	6,773	6,271	566	362	479	32.2%	(45)	(31)	(6.5%)	17.31x	13.10x	NM	NM	NM	NM
Appian Corporation Class A	69.6%	3,144	3,037	160	285	327	14.7%	(37)	(24)	(7.4%)	10.65x	9.29x	NM	NM	NM	NM
Software AG	92.3%	2,621	2,332	557	932	950	2.0%	215	227	23.9%	2.50x	2.45x	10.9x	10.3x	19.3x	19.0x
Micro Focus International plc	20.4%	1,942	5,215	356	2,457	2,370	(3.5%)	874	869	36.6%	2.12x	2.20x	6.0x	6.0x	4.3x	4.1x
Progress Software Corporation	73.6%	1,734	1,877	177	433	NA	NA	194	NA	NA	4.33x	NA	9.7x	NA	NA	NA
Blue Prism Group Plc	59.8%	1,429	1,333	96	195	262	34.5%	(65)	(27)	(10.3%)	6.83x	5.08x	NM	NM	NM	NM
Talend SA Sponsored ADR	51.8%	846	828	177	273	305	11.9%	(35)	(20)	(6.7%)	3.04x	2.72x	NM	NM	NA	NA
Magic Software Enterprises Ltd.	77.6%	439	420	96	341	373	9.4%	NA	NA	NA	1.23x	1.13x	NA	NA	NA	NA
Mean							22.1%			9.0%	9.79x	9.24x	19.2x	39.6x	43.2x	34.5x
Median							24.2%			6.6%	8.74x	8.92x	10.3x	42.2x	46.4x	37.9x
Storage Software and Systems																
NetApp, Inc.	57.1%	\$8,991	\$7,963	\$3,016	\$5,380	\$5,543	3.0%	\$1,220	\$1,251	22.6%	1.48x	1.44x	6.5x	6.4x	9.0x	7.8x
Nutanix, Inc. Class A	44.0%	3,532	3,349	819	1,403	1,660	18.3%	(454)	(398)	(24.0%)	2.39x	2.02x	NM	NM	NM	NM
CommVault Systems, Inc.	76.7%	1,915	1,587	345	691	724	4.8%	120	128	17.6%	2.30x	2.19x	13.2x	12.4x	17.4x	14.8x
Mean							8.7%			5.4%	2.05x	1.88x	9.9x	9.4x	13.2x	11.3x
Median							4.8%			17.6%	2.30x	2.02x	9.9x	9.4x	13.2x	11.3x
Infrastructure Software Mean							15.8%			14.6%	6.78x	6.16x	17.5x	21.6x	28.4x	26.5x
Infrastructure Software Median							13.5%			19.5%	4.54x	4.37x	12.2x	12.7x	18.7x	15.8x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

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(1) Market Capitalization based on diluted shares outstanding calculated using treasury stock method.

(2) Enterprise Value defined as Market Capitalization plus Total Debt, Minority Interest and Preferred Stock, less Cash & Cash Equivalents.

(3) Free Cash Flow = Cash from Operations – Capital Expenditure.

Security and Storage Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &	2020E	2021E	'20-'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)							2020E	2021E	2020E	2021E	2020E	2021E
Threat Protection																
Palo Alto Networks, Inc.	76.4%	\$19,162	\$17,895	\$3,136	\$3,589	\$4,245	18.3%	\$782	\$958	22.6%	4.99x	4.22x	22.9x	18.7x	28.2x	21.1x
CrowdStrike Holdings, Inc. Class A	72.1%	18,427	17,515	912	705	929	31.8%	2	89	9.6%	24.83x	18.85x	NM	NM	NM	NM
Fortinet, Inc.	86.8%	17,205	15,186	2,066	2,472	2,866	16.0%	645	809	28.2%	6.14x	5.30x	23.6x	18.8x	36.1x	23.2x
Check Point Software Technologies Ltd.	85.6%	15,099	13,355	1,743	2,012	2,070	2.9%	1,000	1,009	48.7%	6.64x	6.45x	13.4x	13.2x	16.0x	14.3x
NortonLifeLock Inc.	73.5%	12,999	4,823	12,768	2,479	2,514	1.4%	1,116	1,295	51.5%	1.95x	1.92x	4.3x	3.7x	17.6x	14.5x
Zscaler, Inc.	77.1%	9,392	9,041	385	467	595	27.4%	39	63	10.5%	19.37x	15.21x	NM	NM	NM	NM
Cloudflare Inc Class A	85.8%	7,528	6,902	637	386	506	31.1%	(29)	1	0.2%	17.90x	13.65x	NM	NM	NM	NM
Proofpoint, Inc.	88.4%	6,955	6,866	895	1,048	1,234	17.7%	145	195	15.8%	6.55x	5.56x	47.5x	35.2x	71.2x	33.2x
Trend Micro Incorporated	88.2%	6,839	5,226	1,614	1,625	1,708	5.1%	497	516	30.2%	3.22x	3.06x	10.5x	10.1x	17.1x	19.0x
Avast Plc	79.7%	5,964	6,576	218	716	756	5.6%	398	423	56.0%	9.18x	8.70x	16.5x	15.5x	19.5x	18.2x
Qualys, Inc.	91.3%	4,123	3,876	299	361	410	13.7%	155	179	43.6%	10.75x	9.46x	25.0x	21.7x	33.7x	28.6x
CyberArk Software Ltd.	65.7%	3,762	3,207	1,065	484	571	17.9%	96	128	22.4%	6.62x	5.62x	33.3x	25.1x	46.0x	30.3x
Tenable Holdings, Inc.	79.8%	2,776	2,595	227	429	515	20.0%	(15)	(2)	(0.3%)	6.04x	5.03x	NM	NM	NM	NM
Rapid7 Inc.	69.2%	2,411	2,436	240	389	461	18.6%	12	29	6.3%	6.27x	5.28x	NM	NM	NM	NM
FireEye, Inc.	57.3%	2,317	2,447	980	892	945	5.9%	87	117	12.4%	2.74x	2.59x	28.0x	20.9x	NM	NM
ForeScout Technologies, Inc.	72.7%	1,616	1,563	99	374	423	13.2%	(19)	5	1.2%	4.18x	3.69x	NM	NM	NM	NM
SecureWorks Corp. Class A	58.3%	925	768	182	554	591	6.7%	7	20	3.4%	1.39x	1.30x	NM	37.9x	33.8x	27.2x
Tufin Software Technologies Ltd	29.4%	366	272	119	103	124	20.4%	(40)	(32)	(26.1%)	2.64x	2.19x	NM	NM	NA	NA
Absolute Software Corporation	92.4%	314	275	50	151	164	8.5%	32	35	21.3%	1.83x	1.68x	8.7x	7.9x	13.6x	14.6x
Zix Corporation	48.1%	306	593	13	213	235	10.1%	49	54	23.1%	2.78x	2.52x	12.2x	10.9x	NA	NA
Mean							14.6%			19.0%	7.30x	6.11x	20.5x	18.4x	30.2x	22.2x
Median							14.8%			18.5%	6.09x	5.16x	19.7x	18.7x	28.2x	21.1x
Identity and Access Management																
VeriSign, Inc.	94.2%	\$24,129	\$24,783	\$1,139	\$1,258	\$1,306	3.8%	\$893	\$946	72.5%	19.70x	18.98x	27.7x	26.2x	31.2x	27.1x
Okta, Inc. Class A	93.0%	21,196	20,897	1,403	756	981	29.8%	(36)	0	0.0%	NM	21.31x	NM	NM	NM	NM
Ping Identity Holding Corp.	79.6%	1,950	1,933	68	262	306	16.9%	29	47	15.4%	7.38x	6.31x	66.9x	41.0x	NM	71.0x
SailPoint Technologies Holdings, Inc.	60.8%	1,580	1,481	450	312	356	14.1%	10	19	5.5%	4.75x	4.16x	NM	NM	NM	NM
OneSpan Inc.	78.9%	651	558	105	257	281	9.3%	24	39	13.9%	2.17x	1.99x	23.2x	14.3x	NA	NA
Mean							14.8%			21.5%	8.50x	10.55x	39.3x	27.2x	31.2x	49.1x
Median							14.1%			13.9%	6.06x	6.31x	27.7x	26.2x	31.2x	49.1x
Security Mean							14.0%			20.3%	7.50x	6.41x	24.2x	20.1x	30.3x	26.3x
Security Median							13.9%			15.6%	6.09x	5.16x	23.2x	18.7x	29.7x	23.2x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

Note: Dollars in USD Millions. NM represents multiples less than zero or greater than 60.0x.

(1) Market Capitalization based on diluted shares outstanding calculated using treasury stock method.

(2) Enterprise Value defined as Market Capitalization plus Total Debt, Minority Interest and Preferred Stock, less Cash & Cash Equivalents.

(3) Free Cash Flow = Cash from Operations – Capital Expenditure.

Application Software

Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &	2020E	2021E	'20-'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)							2020E	2021E	2020E	2021E	2020E	2021E
Consumer Relationship Management / Marketing Solutions																
Adobe Inc.	90.3%	\$168,201	\$168,741	\$4,171	\$13,166	\$15,237	15.7%	\$6,207	\$7,246	47.6%	12.82x	11.07x	27.2x	23.3x	32.4x	28.3x
salesforce.com, inc.	82.5%	146,909	145,215	7,947	20,404	24,316	19.2%	5,604	6,684	27.5%	7.12x	5.97x	25.9x	21.7x	36.7x	31.0x
Veeva Systems Inc Class A	95.8%	30,227	29,195	1,087	1,364	1,634	19.8%	506	614	37.6%	21.41x	17.87x	57.7x	47.5x	59.7x	52.0x
RingCentral, Inc. Class A	91.2%	20,568	20,654	344	1,119	1,388	24.0%	145	179	12.9%	18.45x	14.88x	NM	NM	NM	NM
DocuSign, Inc.	92.3%	20,533	20,525	656	1,235	1,567	26.9%	153	229	14.6%	16.62x	13.10x	NM	NM	NM	NM
NICE Ltd	89.5%	10,349	10,375	439	5,950	6,425	8.0%	1,919	2,103	32.7%	1.74x	1.61x	5.4x	4.9x	7.9x	7.0x
Zendesk, Inc.	77.1%	8,558	8,685	471	1,009	1,259	24.8%	93	140	11.1%	8.61x	6.90x	NM	62.2x	NM	74.5x
HubSpot, Inc.	76.9%	7,429	7,070	967	809	981	21.3%	84	125	12.8%	8.74x	7.21x	NM	56.5x	NM	NM
Five9, Inc.	90.3%	6,129	6,030	326	381	446	17.1%	68	81	18.0%	15.81x	13.51x	NM	74.8x	NM	NM
J2 Global, Inc.	72.4%	3,744	4,748	576	1,459	1,553	6.4%	572	615	39.6%	3.25x	3.06x	8.3x	7.7x	NA	NA
Medallia, Inc.	46.1%	3,643	3,299	344	466	557	19.6%	21	42	7.5%	7.08x	5.92x	NM	NM	NM	NM
Verint Systems Inc.	68.6%	2,764	3,292	443	1,372	1,470	7.2%	329	378	25.7%	2.40x	2.24x	10.0x	8.7x	13.1x	10.6x
LivePerson, Inc.	50.7%	1,605	1,433	171	344	424	23.3%	(3)	21	5.0%	4.17x	3.38x	NM	68.1x	NM	NM
Yext, Inc.	55.5%	1,543	1,411	256	360	445	23.6%	(45)	(30)	(6.7%)	3.92x	3.17x	NM	NM	NM	NM
ServiceSource International, Inc.	55.2%	110	128	27	186	194	4.3%	0	5	2.6%	0.69x	0.66x	NA	25.6x	NA	NA
Mean							17.0%			21.1%	9.21x	7.67x	22.4x	36.5x	30.0x	33.9x
Median							19.4%			16.3%	7.86x	6.44x	18.0x	25.6x	32.4x	29.7x
Enterprise Resource Planning / Accounting																
Oracle Corporation	85.5%	\$166,299	\$194,564	\$25,858	\$39,230	\$39,972	1.9%	\$19,089	\$19,445	48.6%	4.96x	4.87x	10.2x	10.0x	13.7x	12.7x
SAP SE	82.7%	138,940	149,714	8,576	30,635	32,949	7.6%	10,041	11,380	34.5%	4.89x	4.54x	14.9x	13.2x	30.7x	24.0x
Intuit Inc.	87.3%	70,030	68,518	2,266	7,709	8,408	9.1%	2,836	3,140	37.3%	8.89x	8.15x	24.2x	21.8x	31.0x	28.9x
SS&C Technologies Holdings, Inc.	82.7%	14,692	21,948	382	4,598	4,759	3.5%	1,772	1,877	39.4%	4.77x	4.61x	12.4x	11.7x	11.7x	10.7x
Coupa Software, Inc.	90.7%	13,096	13,129	767	481	604	25.7%	48	84	13.8%	NM	21.72x	NM	NM	NM	NM
Sage Group plc	73.9%	8,365	8,853	462	2,354	2,433	3.4%	572	604	24.8%	3.76x	3.64x	15.5x	14.7x	21.2x	18.1x
Xero Limited	83.7%	7,709	7,871	105	463	544	17.5%	101	131	24.0%	17.00x	14.46x	NM	60.1x	NM	NM
Avalara Inc	91.4%	7,397	6,997	467	462	573	23.8%	(6)	14	2.4%	15.14x	12.22x	NM	NM	NM	NM
Bill.com Holdings, Inc.	83.5%	3,992	3,885	383	158	193	21.5%	(26)	(29)	(14.9%)	24.51x	20.17x	NM	NM	NM	NA
BlackLine, Inc.	76.8%	3,223	3,018	614	338	402	18.8%	39	52	13.0%	8.91x	7.51x	NM	57.8x	NM	89.2x
TOTVS S.A.	55.4%	2,068	1,877	280	456	517	13.5%	95	115	22.2%	4.12x	3.63x	19.7x	16.4x	NM	24.6x
PROS Holdings, Inc.	44.3%	1,448	1,338	252	278	296	6.7%	(17)	(6)	(2.1%)	4.82x	4.52x	NM	NM	NA	NA
Zuora, Inc. Class A	44.3%	1,210	1,117	172	295	339	15.1%	(18)	10	3.0%	3.79x	3.29x	NM	NM	NA	NA
QAD Inc. Class A	74.8%	855	750	137	315	340	8.0%	14	24	7.0%	2.38x	2.21x	53.7x	31.4x	NA	NA
Cegedim SA	81.2%	397	664	34	563	585	4.0%	111	116	19.9%	1.18x	1.14x	6.0x	5.7x	7.6x	6.9x
Mean							12.0%			18.2%	7.79x	7.78x	19.6x	24.3x	19.3x	26.9x
Median							9.1%			19.9%	4.85x	4.61x	15.2x	15.5x	17.4x	21.0x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

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(3) Free Cash Flow = Cash from Operations – Capital Expenditure.

Application Software (Cont'd)

Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &	2020E	2021E	'20-'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)							2020E	2021E	2020E	2021E	2020E	2021E
Human Capital Management																
Workday, Inc. Class A	65.5%	\$35,451	\$35,073	\$1,948	\$4,205	\$5,007	19.1%	\$907	\$1,133	22.6%	8.34x	7.00x	38.7x	31.0x	60.3x	48.2x
Paycom Software, Inc.	72.5%	14,250	13,021	1,261	837	999	19.4%	344	423	42.3%	15.55x	13.03x	37.8x	30.8x	NM	NM
Ceridian HCM Holding, Inc.	74.1%	8,743	9,177	281	865	990	14.4%	167	204	20.6%	10.61x	9.27x	54.9x	45.0x	NM	NM
Paylocity Holding Corp.	72.3%	5,987	5,925	146	612	726	18.7%	172	211	29.0%	9.69x	8.16x	34.4x	28.1x	NA	NA
Cornerstone OnDemand, Inc.	51.0%	2,103	2,054	417	613	678	10.5%	146	180	26.5%	3.35x	3.03x	14.1x	11.4x	13.0x	10.6x
Mean							16.4%			28.2%	9.51x	8.10x	36.0x	29.3x	36.7x	29.4x
Median							18.7%			26.5%	9.69x	8.16x	37.8x	30.8x	36.7x	29.4x
Product Lifecycle Management / Electronic Design Automation																
Autodesk, Inc.	84.0%	\$39,092	\$39,793	\$1,844	\$3,772	\$4,453	18.0%	\$1,235	\$1,682	37.8%	10.55x	8.94x	32.2x	23.7x	25.2x	21.4x
Dassault Systemes SA	79.6%	37,645	41,358	2,123	4,998	5,453	9.1%	1,771	2,001	36.7%	8.27x	7.58x	23.3x	20.7x	33.5x	29.4x
Synopsys, Inc.	90.5%	23,149	23,312	702	3,682	3,986	8.3%	1,075	1,258	31.5%	6.33x	5.85x	21.7x	18.5x	32.9x	23.9x
ANSYS, Inc.	86.5%	22,423	22,159	872	1,638	1,797	9.7%	720	817	45.5%	13.53x	12.33x	30.8x	27.1x	50.3x	39.4x
Cadence Design Systems, Inc.	93.8%	22,057	21,807	946	2,550	2,737	7.4%	847	940	34.4%	8.55x	7.97x	25.8x	23.2x	31.0x	30.3x
PTC Inc.	72.0%	7,760	8,731	884	1,448	1,610	11.2%	447	528	32.8%	6.03x	5.42x	19.5x	16.5x	32.7x	18.8x
Nemetschek SE	82.3%	7,275	7,375	167	637	718	12.7%	172	209	29.1%	11.59x	10.28x	42.9x	35.3x	63.7x	49.9x
AVEVA Group plc	62.1%	7,008	6,998	122	1,011	1,055	4.4%	283	309	29.3%	6.92x	6.63x	24.7x	22.6x	39.7x	31.0x
Altair Engineering Inc. Class A	72.9%	2,444	2,431	223	484	524	8.2%	49	64	12.3%	5.03x	4.64x	49.4x	37.8x	NM	81.4x
PDF Solutions, Inc.	82.0%	498	410	98	98	114	17.3%	14	22	19.3%	4.20x	3.58x	30.4x	18.6x	NA	NA
Mean							10.6%			30.9%	8.10x	7.32x	30.1x	24.4x	38.6x	36.2x
Median							9.4%			32.2%	7.60x	7.11x	28.1x	22.9x	33.2x	30.3x
Supply Chain Management																
Aspen Technology, Inc.	69.6%	\$6,797	\$7,097	\$80	\$599	\$648	8.1%	\$311	\$330	50.9%	11.84x	10.96x	22.8x	21.5x	25.9x	NA
Manhattan Associates, Inc.	78.2%	4,493	4,454	75	560	621	10.9%	136	149	23.9%	7.95x	7.17x	32.7x	30.0x	36.6x	32.9x
Descartes Systems Group Inc.	90.0%	3,610	3,569	59	482	530	10.0%	184	209	39.4%	7.41x	6.73x	19.4x	17.1x	23.0x	NA
Kinaxis, Inc.	95.7%	2,882	2,618	276	297	352	18.6%	65	85	24.3%	8.82x	7.44x	40.6x	30.7x	58.6x	55.4x
SPS Commerce, Inc.	87.2%	1,964	1,773	215	302	330	9.3%	81	94	28.5%	5.86x	5.37x	21.8x	18.8x	NA	NA
American Software, Inc. Class A	79.8%	529	435	96	118	124	5.8%	15	17	13.6%	3.70x	3.50x	29.6x	25.8x	NA	NA
Mean							10.4%			30.1%	7.60x	6.86x	27.8x	24.0x	36.0x	44.2x
Median							9.6%			26.4%	7.68x	6.95x	26.2x	23.7x	31.2x	44.2x

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											2020E	2021E	2020E	2021E	2020E	2021E
Web Analytics																
Domo, Inc. Class B	46.4%	\$525	\$527	\$99	\$186	\$204	10.1%	(\$64)	(\$43)	(21.2%)	2.84x	2.58x	NM	NM	NM	NM
comScore, Inc.	23.8%	214	401	67	\$393	\$412	4.9%	\$22	\$20	4.9%	1.02x	0.97x	17.9x	19.9x	NM	NA
Mean							7.5%			(8.2%)	1.93x	1.77x	17.9x	19.9x	NA	NA
Median							7.5%			(8.2%)	1.93x	1.77x	17.9x	19.9x	NA	NA
Vertical Software																
Shopify, Inc. Class A	89.1%	\$77,237	\$74,934	\$2,455	\$2,069	\$2,911	40.7%	\$16	\$83	2.8%	NM	NM	NM	NM	NM	NM
Veeva Systems Inc Class A	95.8%	30,227	29,195	1,087	1,364	1,634	19.8%	506	614	37.6%	21.41x	17.87x	57.7x	47.5x	59.7x	52.0x
Verisk Analytics Inc	89.9%	25,495	28,621	207	2,805	2,948	5.1%	1,310	1,404	47.6%	10.20x	9.71x	21.8x	20.4x	39.7x	34.4x
Constellation Software Inc.	84.0%	20,463	21,005	423	5,651	6,660	17.9%	1,478	1,801	27.0%	3.72x	3.15x	14.2x	11.7x	15.9x	14.0x
Tyler Technologies, Inc.	92.4%	13,061	12,743	340	1,150	1,264	9.9%	321	356	28.2%	11.08x	10.08x	39.7x	35.8x	48.7x	47.4x
Avalara Inc	91.4%	7,397	6,997	467	462	573	23.8%	(6)	14	2.4%	15.14x	12.22x	NM	NM	NM	NM
Guidewire Software, Inc.	71.5%	7,366	6,747	1,055	734	837	14.1%	97	161	19.2%	9.19x	8.06x	69.6x	41.9x	NM	NA
RealPage, Inc.	94.7%	6,024	6,862	440	1,158	1,283	10.8%	316	361	28.1%	5.93x	5.35x	21.7x	19.0x	21.7x	21.0x
Anaplan, Inc.	62.0%	5,689	5,435	310	443	569	28.5%	(37)	(5)	(0.9%)	12.26x	9.54x	NM	NM	NM	NM
Nuance Communications, Inc.	82.3%	5,492	6,794	503	1,491	1,556	4.3%	358	381	24.5%	4.56x	4.37x	19.0x	17.8x	NA	NA
CDK Global Inc	67.6%	4,684	7,182	285	2,007	2,109	5.1%	764	809	38.4%	3.58x	3.41x	9.4x	8.9x	NA	NA
Manhattan Associates, Inc.	78.2%	4,493	4,454	75	560	621	10.9%	136	149	23.9%	7.95x	7.17x	32.7x	30.0x	36.6x	32.9x
Q2 Holdings, Inc.	82.5%	3,948	4,282	136	408	506	24.0%	17	37	7.4%	10.49x	8.46x	NM	NM	NA	NA
AppFolio Inc Class A	71.1%	3,724	3,794	65	319	385	21.0%	51	62	16.2%	11.91x	9.84x	74.6x	60.8x	NA	NA
Blackbaud, Inc.	54.7%	2,571	2,936	257	915	921	0.6%	175	180	19.6%	3.21x	3.19x	16.8x	16.3x	22.1x	18.7x
NCR Corporation	52.9%	2,426	6,463	1,214	6,342	6,693	5.5%	900	1,045	15.6%	1.02x	0.97x	7.2x	6.2x	4.9x	NM
NIC Inc.	90.0%	1,554	1,347	218	380	414	8.9%	87	102	24.5%	3.54x	3.25x	15.5x	13.3x	NA	NA
Sapiens International Corporation NV	88.1%	1,213	1,246	89	369	400	8.4%	64	74	18.4%	3.38x	3.12x	19.4x	16.9x	NA	NA
Ebix, Inc.	36.6%	605	1,300	118	554	522	(5.8%)	166	240	46.1%	2.35x	2.49x	7.8x	5.4x	NA	NA
Rosetta Stone Inc.	62.5%	420	384	43	192	202	5.3%	4	9	4.5%	2.00x	1.90x	NM	42.5x	NA	NA
Castlight Health, Inc. Class B	17.1%	99	61	59	133	144	8.9%	(17)	(7)	(4.5%)	0.46x	0.42x	NM	NM	NA	NA
Mean							12.7%	\$319	\$375	20.3%	7.17x	6.23x	28.5x	24.6x	31.2x	31.5x
Median							10.3%	\$151	\$171	21.8%	5.93x	5.35x	19.4x	18.4x	29.4x	32.9x
Application Software Mean							13.4%			21.8%	7.92x	7.11x	28.0x	28.0x	32.8x	33.6x
Application Software Median							10.8%			24.0%	7.10x	6.63x	23.3x	22.6x	31.7x	29.2x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

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SaaS

Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &	2020E	2021E	'20-'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)							2020E	2021E	2020E	2021E	2020E	2021E
SaaS																
Adobe Inc.	90.3%	\$168,201	\$168,741	\$4,171	\$13,166	\$15,237	15.7%	\$6,207	\$7,246	47.6%	12.82x	11.07x	27.2x	23.3x	32.4x	28.3x
salesforce.com, inc.	82.5%	146,909	145,215	7,947	20,404	24,316	19.2%	5,604	6,684	27.5%	7.12x	5.97x	25.9x	21.7x	36.7x	31.0x
Shopify, Inc. Class A	89.1%	77,237	74,934	2,455	2,069	2,911	40.7%	16	83	2.8%	NM	NM	NM	NM	NM	NM
ServiceNow, Inc.	93.4%	71,068	70,409	1,863	4,348	5,402	24.3%	1,301	1,633	30.2%	16.19x	13.03x	54.1x	43.1x	61.4x	48.3x
Zoom Video Communications, Inc. Class A	79.0%	42,338	41,507	904	908	1,236	36.1%	200	248	20.1%	NM	NM	NM	NM	NM	NM
Atlassian Corp. Plc Class A	92.6%	40,500	39,579	2,072	1,780	2,209	24.1%	446	549	24.9%	22.24x	17.92x	NM	72.0x	73.5x	56.8x
Workday, Inc. Class A	65.5%	35,451	35,073	1,948	4,205	5,007	19.1%	907	1,133	22.6%	8.34x	7.00x	38.7x	31.0x	60.3x	48.2x
Veeva Systems Inc Class A	95.8%	30,227	29,195	1,087	1,364	1,634	19.8%	506	614	37.6%	21.41x	17.87x	57.7x	47.5x	59.7x	52.0x
Okta, Inc. Class A	93.0%	21,196	20,897	1,403	756	981	29.8%	(36)	0	0.0%	NM	21.31x	NM	NM	NM	NM
RingCentral, Inc. Class A	91.2%	20,568	20,654	344	1,119	1,388	24.0%	145	179	12.9%	18.45x	14.88x	NM	NM	NM	NM
DocuSign, Inc.	92.3%	20,533	20,525	656	1,235	1,567	26.9%	153	229	14.6%	16.62x	13.10x	NM	NM	NM	NM
CrowdStrike Holdings, Inc. Class A	72.1%	18,427	17,515	912	705	929	31.8%	2	89	9.6%	24.83x	18.85x	NM	NM	NM	NM
Twilio, Inc. Class A	75.0%	16,784	15,572	1,853	1,422	1,819	27.9%	34	120	6.6%	10.95x	8.56x	NM	NM	NM	NM
Datadog Inc Class A	91.4%	14,799	14,085	774	532	707	33.0%	(8)	13	1.9%	NM	19.91x	NM	NM	NM	NM
Paycom Software, Inc.	72.5%	14,250	13,021	1,261	837	999	19.4%	344	423	42.3%	15.55x	13.03x	37.8x	30.8x	NM	NM
Coupa Software, Inc.	90.7%	13,096	13,129	767	481	604	25.7%	48	84	13.8%	NM	21.72x	NM	NM	NM	NM
MongoDB, Inc. Class A	86.6%	10,270	10,271	987	505	644	27.5%	(53)	(39)	(6.0%)	20.34x	15.96x	NM	NM	NA	NA
Zscaler, Inc.	77.1%	9,392	9,041	385	467	595	27.4%	39	63	10.5%	19.37x	15.21x	NM	NM	NM	NM
TeamViewer AG	93.6%	8,803	8,718	85	427 ⁽⁴⁾	552 ⁽⁴⁾	29.4%	245 ⁽⁵⁾	321 ⁽⁵⁾	58.2% ⁽⁶⁾	20.43x	15.79x	35.6x	27.2x	41.3x	31.1x
Ceridian HCM Holding, Inc.	74.1%	8,743	9,177	281	865	990	14.4%	167	204	20.6%	10.61x	9.27x	54.9x	45.0x	NM	NM
Zendesk, Inc.	77.1%	8,558	8,685	471	1,009	1,259	24.8%	93	140	11.1%	8.61x	6.90x	NM	62.2x	NM	74.5x
Dropbox, Inc. Class A	75.9%	8,532	8,379	1,159	1,855	2,068	11.5%	506	590	28.5%	4.52x	4.05x	16.6x	14.2x	18.7x	15.8x
Dynatrace, Inc.	76.2%	7,935	8,287	189	629	781	24.2%	158	196	25.1%	13.17x	10.61x	52.5x	42.2x	75.6x	58.0x
Xero Limited	83.7%	7,709	7,871	105	463	544	17.5%	101	131	24.0%	17.00x	14.46x	NM	60.1x	NM	NM
Alteryx, Inc. Class A	69.2%	7,627	7,574	787	541	703	30.0%	81	130	18.5%	14.00x	10.77x	NM	58.3x	NM	84.5x
Cloudflare Inc Class A	85.8%	7,528	6,902	637	386	506	31.1%	(29)	1	0.2%	17.90x	13.65x	NM	NM	NM	NM
HubSpot, Inc.	76.9%	7,429	7,070	967	809	981	21.3%	84	125	12.8%	8.74x	7.21x	NM	56.5x	NM	NM
Avalara Inc	93.6%	8,803	8,718	80	462	573	23.8%	(6)	14	2.4%	18.86x	15.23x	NM	NM	41.3x	31.1x
Proofpoint, Inc.	88.4%	6,955	6,866	895	1,048	1,234	17.7%	145	195	15.8%	6.55x	5.56x	47.5x	35.2x	71.2x	33.2x
Smartsheet, Inc. Class A	95.6%	6,773	6,271	566	362	479	32.2%	(45)	(31)	(6.5%)	17.31x	13.10x	NM	NM	NM	NM
Elastic NV	60.6%	6,062	5,802	296	514	676	31.5%	(70)	(75)	(11.1%)	11.28x	8.58x	NM	NM	NM	NM
RealPage, Inc.	94.7%	6,024	6,862	440	1,158	1,283	10.8%	316	361	28.1%	5.93x	5.35x	21.7x	19.0x	21.7x	21.0x
Paylocity Holding Corp.	72.3%	5,987	5,925	146	612	726	18.7%	172	211	29.0%	9.69x	8.16x	34.4x	28.1x	NA	NA
Anaplan, Inc.	62.0%	5,689	5,435	310	443	569	28.5%	(37)	(5)	(0.9%)	12.26x	9.54x	NM	NM	NM	NM
Nuance Communications, Inc.	82.3%	5,492	6,794	503	1,491	1,556	4.3%	358	381	24.5%	4.56x	4.37x	19.0x	17.8x	NA	NA
CDK Global Inc	67.6%	4,684	7,182	285	2,007	2,109	5.1%	764	809	38.4%	3.58x	3.41x	9.4x	8.9x	NA	NA
Everbridge, Inc.	78.3%	4,053	3,985	503	260	330	27.1%	6	14	4.4%	15.33x	12.06x	NM	NM	NM	86.9x
Bill.com Holdings, Inc.	83.5%	3,992	3,885	383	158	193	21.5%	(26)	(29)	(14.9%)	24.51x	20.17x	NM	NM	NM	NA
Q2 Holdings, Inc.	82.5%	3,948	4,282	136	408	506	24.0%	17	37	7.4%	10.49x	8.46x	NM	NM	NA	NA
J2 Global, Inc.	72.4%	3,744	4,748	576	1,459	1,553	6.4%	572	615	39.6%	3.25x	3.06x	8.3x	7.7x	NA	NA
AppFolio Inc Class A	71.1%	3,724	3,794	65	319	385	21.0%	51	62	16.2%	11.91x	9.84x	74.6x	60.8x	NA	NA
Mean							21.1%			13.9%	10.76x	9.43x	31.9x	34.6x	45.8x	46.1x
Median							21.1%			12.9%	8.91x	8.31x	27.2x	29.5x	41.3x	40.7x

Source: Company filings, FactSet and Capital IQ. Market data as of May 4, 2020.

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(3) Free Cash Flow = Cash from Operations – Capital Expenditure.

(4) Represents adjusted billings.

(5) Represents cash EBITDA.

(6) Represents cash EBITDA / adjusted billings.

SaaS (Cont'd)

Software Market Update



Company	% 52-Week				Revenue			EBITDA			Valuation Metrics					
	High	Market	Enterprise	Cash &	2020E	2021E	'20-'21 Growth	2020E	2021E	2021E Margin	EV / Revenue		EV / EBITDA		P/FCF ⁽³⁾	
	5/4/20	Cap. (\$M) ⁽¹⁾	Val. (\$M) ⁽²⁾	Equiv. (\$M)							2020E	2021E	2020E	2021E	2020E	2021E
SaaS (Cont'd)																
Medallia, Inc.	46.1%	\$3,643	\$3,299	\$344	\$466	\$557	19.6%	\$21	\$42	7.5%	7.08x	5.92x	NM	NM	NM	NM
BlackLine, Inc.	76.8%	3,223	3,018	614	338	402	18.8%	39	52	13.0%	8.91x	7.51x	NM	57.8x	NM	89.2x
New Relic, Inc.	47.7%	3,102	2,858	737	656	766	16.7%	89	107	14.0%	4.36x	3.73x	32.0x	26.7x	NM	78.1x
Tenable Holdings, Inc.	79.8%	2,776	2,595	227	429	515	20.0%	(15)	(2)	(0.3%)	6.04x	5.03x	NM	NM	NM	NM
Rapid7 Inc.	69.2%	2,411	2,436	240	389	461	18.6%	12	29	6.3%	6.27x	5.28x	NM	NM	NM	NM
Fastly, Inc. Class A	62.4%	2,281	2,110	201	260	336	29.4%	(19)	(1)	(0.4%)	8.13x	6.28x	NM	NM	NM	NM
Cornerstone OnDemand, Inc.	51.0%	2,103	2,054	417	613	678	10.5%	146	180	26.5%	3.35x	3.03x	14.1x	11.4x	13.0x	10.6x
Alarm.com Holdings, Inc.	58.3%	2,069	2,069	120	550	599	9.0%	108	124	20.7%	3.76x	3.45x	19.1x	16.7x	34.1x	30.3x
SPS Commerce, Inc.	87.2%	1,964	1,773	215	302	330	9.3%	81	94	28.5%	5.86x	5.37x	21.8x	18.8x	NA	NA
Ping Identity Holding Corp.	79.6%	1,950	1,933	68	262	306	16.9%	29	47	15.4%	7.38x	6.31x	66.9x	41.0x	NM	71.0x
Workiva, Inc. Class A	58.8%	1,874	1,703	496	335	385	15.2%	(22)	(17)	(4.4%)	5.09x	4.42x	NM	NM	NM	NM
PagerDuty, Inc.	34.8%	1,826	1,475	351	203	248	22.0%	(20)	(12)	(5.0%)	7.27x	5.96x	NM	NM	NM	NM
LivePerson, Inc.	50.7%	1,605	1,433	171	344	424	23.3%	(3)	21	5.0%	4.17x	3.38x	NM	68.1x	NM	NM
Zuora, Inc. Class A	44.3%	1,210	1,117	172	295	339	15.1%	(18)	10	3.0%	3.79x	3.29x	NM	NM	NA	NA
Sprout Social Inc Class A	72.8%	825	710	135	129	166	29.2%	(24)	(16)	(9.5%)	5.53x	4.28x	NM	NM	NA	NA
Upland Software, Inc.	54.1%	759	1,118	175	270	288	6.4%	100	107	37.2%	4.13x	3.88x	11.2x	10.4x	46.8x	12.2x
Domo, Inc. Class B	46.4%	525	527	99	186	204	10.1%	(64)	(43)	(21.2%)	2.84x	2.58x	NM	NM	NM	NM
Tufin Software Technologies Ltd	29.4%	366	272	119	103	124	20.4%	(40)	(32)	(26.1%)	2.64x	2.19x	NM	NM	NA	NA
Benefitfocus, Inc.	30.9%	344	497	131	293	316	7.8%	25	33	10.5%	1.69x	1.57x	19.7x	15.0x	NA	NA
Mean							21.1%			13.9%	10.76x	9.43x	31.9x	34.6x	45.8x	46.1x
Median							21.1%			12.9%	8.91x	8.31x	27.2x	29.5x	41.3x	40.7x
Subscription & Term Based Models																
Autodesk, Inc.	84.0%	\$39,092	\$39,793	\$1,844	\$3,772	\$4,453	18.0%	\$1,235	\$1,682	37.8%	10.55x	8.94x	32.2x	23.7x	25.2x	21.4x
Synopsys, Inc.	90.5%	23,149	23,312	702	3,682	3,986	8.3%	1,075	1,258	31.5%	6.33x	5.85x	21.7x	18.5x	32.9x	23.9x
ANSYS, Inc.	86.5%	22,423	22,159	872	1,638	1,797	9.7%	720	817	45.5%	13.53x	12.33x	30.8x	27.1x	50.3x	39.4x
Cadence Design Systems, Inc.	93.8%	22,057	21,807	946	2,550	2,737	7.4%	847	940	34.4%	8.55x	7.97x	25.8x	23.2x	31.0x	30.3x
Guidewire Software, Inc.	71.5%	7,366	6,747	1,055	734	837	14.1%	97	161	19.2%	9.19x	8.06x	69.6x	41.9x	NM	NA
AVEVA Group plc	62.1%	7,008	6,998	122	1,011	1,055	4.4%	283	309	29.3%	6.92x	6.63x	24.7x	22.6x	39.7x	31.0x
Aspen Technology, Inc.	69.6%	6,797	7,097	80	599	648	8.1%	311	330	50.9%	11.84x	10.96x	22.8x	21.5x	25.9x	NA
Pegasystems Inc.	79.0%	6,795	6,826	538	1,061	1,261	18.8%	27	101	8.0%	6.43x	5.41x	NM	67.3x	NA	NA
Mean							11.1%			32.1%	9.17x	8.27x	32.5x	30.7x	34.1x	29.2x
Median							9.0%			33.0%	8.87x	8.01x	25.8x	23.4x	31.9x	30.3x
SaaS & Subscription Mean							19.6%			16.0%	10.55x	9.28x	32.0x	33.8x	42.5x	42.7x
SaaS & Subscription Median							19.6%			14.0%	8.91x	8.11x	26.5x	27.1x	39.7x	31.1x
Overall Software Mean							14.8%			18.8%	7.61x	6.75x	25.1x	25.3x	31.7x	31.8x
Overall Software Median							13.7%			20.0%	6.14x	5.41x	21.7x	20.4x	31.0x	25.8x

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