

Technology, Media & Telecom

QUARTERLY SOFTWARE SECTOR REVIEW | 1Q 2020

HW Harris Williams

HW Software Introduction

HARRIS WILLIAMS (“HW”)

- 25+ years and more than 1,000 closed transactions
- 360+ professionals across eight offices globally
- 170+ closed transactions in the last 24 months
- 10 industry groups

FOCUSED ADVISORY SERVICES

- Mergers and acquisitions (M&A)
- Capital raises
- Corporate divestitures

CONSISTENT RECOGNITION FOR QUALITY



HW TECHNOLOGY, MEDIA & TELECOM (“TMT”) GROUP

- 35+ dedicated TMT professionals
- TMT offices include Boston, San Francisco, and London

KEY TMT THEMES

- ✓ SaaS / Cloud
- ✓ Data & Analytics
- ✓ Digital Transformation
- ✓ A.I. / Machine Learning

HORIZONTAL FOCUS SECTORS

- Application Software
- Cloud Managed Services and Hosting Solutions
- Compliance Solutions
- CRM and Marketing Automation
- Human Capital Management
- Infrastructure and Security Software
- IT and Tech-Enabled Services
- Marketing, Research, and Insights Software

VERTICAL FOCUS SECTORS

- Architecture, Engineering, and Construction Software
- Education Technology and Services
- Energy Technology
- Facilities and Real Estate Software
- Financial Technology and Payments
- Government Technology
- Healthcare IT
- Industrial and Supply Chain Technology
- Internet and eCommerce
- Retail Technology

HW SOFTWARE TEAM

TECHNOLOGY, MEDIA & TELECOM

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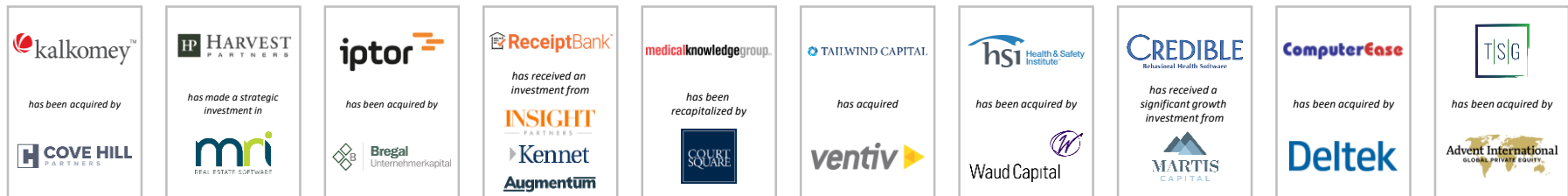
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SELECT HW SOFTWARE EXPERIENCE



HW Current Market Observations and Insights

CURRENT MARKET OBSERVATIONS

Economic Outlook

- Volatility in the public markets will likely remain as investors, businesses, and policy-makers evaluate rapidly evolving COVID-19 developments
- Economists and industry analysts expect a meaningful decline in GDP in 2Q '20 and 3Q '20, while they debate the shape and timing of the recovery

Buyer Sentiment

- The desire to invest remains – buyers are actively seeking to deploy capital
- Private equity firms and strategic acquirers have focused on meeting near-term operational needs and assessing medium- to long-term impact of COVID-19
- Despite economic uncertainty, financial sponsors have record levels of capital to deploy, and many are communicating that they are “open for business,” while acknowledging high-quality deal flow will be limited
- As capital markets stabilize, companies with strong liquidity positions will be well-positioned to pursue acquisitions that accelerate growth

Debt Markets

- In contrast to the first half of 1Q '20, debt markets have shifted to a risk-off mentality
- Concerns over liquidity and funding availability contribute to uncertainty regarding the duration of the COVID-19 risk mitigation focus

M&A Valuations

- COVID-19 has pushed timelines for many transactions, but select deals are still closing successfully. Some may be temporarily on hold, and others are preparing for market and carefully weighing timing
- Companies that prove their ability to weather the current circumstances will receive significant interest and garner premium valuations

LATEST HW MARKET INSIGHTS



For access to HW's latest insights and perspective, email us at insights@harriswilliams.com or visit www.harriswilliams.com/news-insights



Recent Publications:

Global Consumer Businesses Consider Emergence from COVID-19

M&A Learnings from Past Economic Disruptions

COVID-19 and M&A: Insights from Asia

Deep Sector Expertise Across Key TMT Focus Areas



- Architecture, Engineering, and Construction
- Education Technology and Services
- Financial Technology and Payments
- Healthcare IT
- Industrial and Supply Chain Technology
- ...and more

For access to HW's TMT content, email us at TMT_Insights@harriswilliams.com

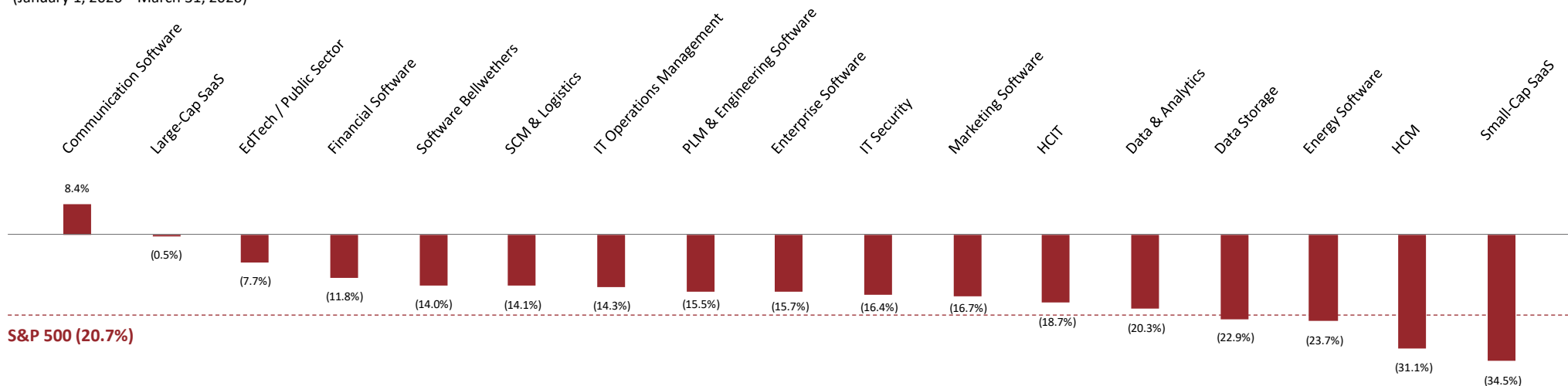
Impact of COVID-19 on the Software Sector

The global COVID-19 pandemic represents a defining moment for software companies as consumer, business, and government behavior changes dramatically, with significant short- and long-term ramifications across all verticals.

- While the broader software subsector indices are mostly lower year-to-date, certain companies and business models are proving resilient and being rewarded:
 - > All Things Remote: From distance learning to mobile eLearning, social distancing is proving out and refining the value propositions of online education and video-based communications. With new use cases established and students transitioning online, the future is bright for the education sector as learning continues to become more digital.
 - > Retail Supply Chain / eCommerce: Having an effective digital strategy is critical in the current environment as consumers want and expect a seamless eCommerce experience. While the coronavirus pandemic is a stress test of sorts, it's also a boon to many digital eCommerce fulfillment and retail supply chain technology providers, with a host of newly digital products, services, and experiences making the leap.
 - > Healthcare Innovation / Telehealth: Telehealth, once a slow but steady growth industry, is booming as the coronavirus pandemic has increased patient demand and regulatory support. Further, operational and clinical challenges related to COVID-19 have highlighted fundamental flaws in the healthcare ecosystem, many of which will require next-generation solutions.
 - > Enterprise IT Security: With substantial changes to how and where people are doing their jobs, and the applications that they utilize, enterprise and mobile IT security is being put to the test. Infrastructure and security software vendors are being called upon to help companies – large and small – to adapt their communication networks, scale and manage their data assets, and enhance their security environments to address these changes.

1Q 2020 Public Equity Performance

(January 1, 2020 – March 31, 2020)



Case Study: Kalkomey

HW's TMT Group advised Kalkomey, a portfolio company of Inverness Graham, on its sale to Cove Hill Partners.



a portfolio company of



has been acquired by



TRANSACTION OVERVIEW

Kalkomey is a leading provider of online recreational safety education reaching all 50 U.S. states, as well as Australia, Canada, Guam, Mexico, New Zealand, Puerto Rico, and the United Kingdom. The Company works hand-in-hand with governmental agencies to provide tailored online safety education courses and certifications for boating, scuba diving, hunting, snowmobiling, and off-roading.

Kalkomey's regulatory-approved safety education courses provide official safety certifications to nearly a million students annually. The Company's cloud-based government agency software offerings drive operational efficiencies of key workflows from licensing and registration, to certification and event management, to compliance and reporting.

Cove Hill is a long-term-oriented private equity firm focused on partnering with management teams to build market-leading technology and consumer companies. The firm manages a long-duration fund with over \$1 billion of commitments from its investors and founders. Based in Boston, Cove Hill has an innovative structure that provides the flexibility to enable a patient, concentrated, and value-add approach in a small portfolio of long-term investments.

RELEVANT SUB-SECTORS

EDUCATION TECHNOLOGY

FINTECH

VERTICAL SOFTWARE

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Case Study: Receipt Bank

HW's TMT Group advised Receipt Bank on its \$73 million Series C Capital Raise from Insight Partners, Augmentum Fintech, Kennet Partners, and Canadian Imperial Bank of Commerce.



has received an investment from



TRANSACTION OVERVIEW

Receipt Bank is a leading provider of a digital bookkeeping platform for SMBs and professional accountants, offering proprietary machine learning technology that fully automates workflows across bookkeeping and accounting functions.

Receipt Bank serves the \$500 billion global accounting and bookkeeping services market and partners with more than 9,000 bookkeeping and accounting firms to serve over 300k SMBs.

The Company's SaaS, AI-powered bookkeeping provides market-leading accuracy, scale, and speed, saving SMBs and bookkeepers hundreds of hours of administrative work and enabling them to focus on their business and drive revenue.

RELEVANT SUB-SECTORS

SAAS

FINTECH

VERTICAL SOFTWARE

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Select Software M&A Transactions – 1Q 2020

Announced March 31, 2020



Enterprise Value: NA

EV / Revenue: NA

Revenue: NA

EV / EBITDA: NA

Thoma Bravo's pending acquisition of Command Alkon

- Command Alkon is a provider of a supply chain integration and digital collaboration platform for the heavy construction ecosystem.
- The Company's cloud-based solution enables contractors and project owners to digitally connect with their heavy material suppliers, producers, and haulers to automate inter-company workflows and provide visibility into real-time order status.
- Post acquisition, Thoma Bravo plans to invest in next-generation cloud capabilities to speed Command Alkon's integration into inter-company supply chain operations in heavy construction.

Closed February 28, 2020



Enterprise Value: NA

EV / Revenue: NA

Revenue: NA

EV / EBITDA: NA

Veritas Capital's acquisition of Campus Management and Edcentric

- Campus Management provides student information solutions (SIS), CRM, and ERP solutions for more than 1,100 higher education institutions in over 30 countries. Edcentric provides institutional effectiveness software to over 1,400 institutions.
- The Company's solutions enable colleges and universities to increase operational efficiencies, promote student success, and improve overall institutional effectiveness.
- Following the acquisition, Campus Management and Edcentric will continue to operate as separate businesses and leverage Veritas Capital's extensive education sector expertise and capital to accelerate growth both organically and inorganically.

Closed February 12, 2020



Enterprise Value: NA

EV / Revenue: NA

Revenue: NA

EV / EBITDA: NA

Enverus' acquisition of RS Energy

- RS Energy provides software and advanced analytics solutions to support operators and investors focused on oil and gas markets.
- The Company's SaaS-based research and analytics tools interpret geological, operational, and financial data to deliver insights around capital allocation, asset evaluation, operational decision making, and performance benchmarking.
- The combination of Enverus and RS Energy will result in a single platform that will enhance energy companies' and investors' ability to perform technical workflows and automate business processes through access to new datasets, analytics tools, and data-driven insights.

Closed February 6, 2020



Enterprise Value: NA

EV / Revenue: NA

Revenue: NA

EV / EBITDA: NA

CVC Partners' investment in EcoVadis

- EcoVadis provides an ESG sustainability rating platform and collaborative performance improvement tools for more than 450 enterprises across 155 countries, representing \$2.5T in business spend.
- The Company's ratings and engagement platform enables organizations to identify, evaluate, and improve their environmental and social impact within their global supply chains.
- EcoVadis will leverage CVC's funding to expand its geographic presence and develop new risk identification products as scrutiny of corporate ESG practices grows.

Closed January 15, 2020



Enterprise Value: HW Conf.

EV / Revenue: HW Conf.

Revenue: HW Conf.

EV / EBITDA: HW Conf.

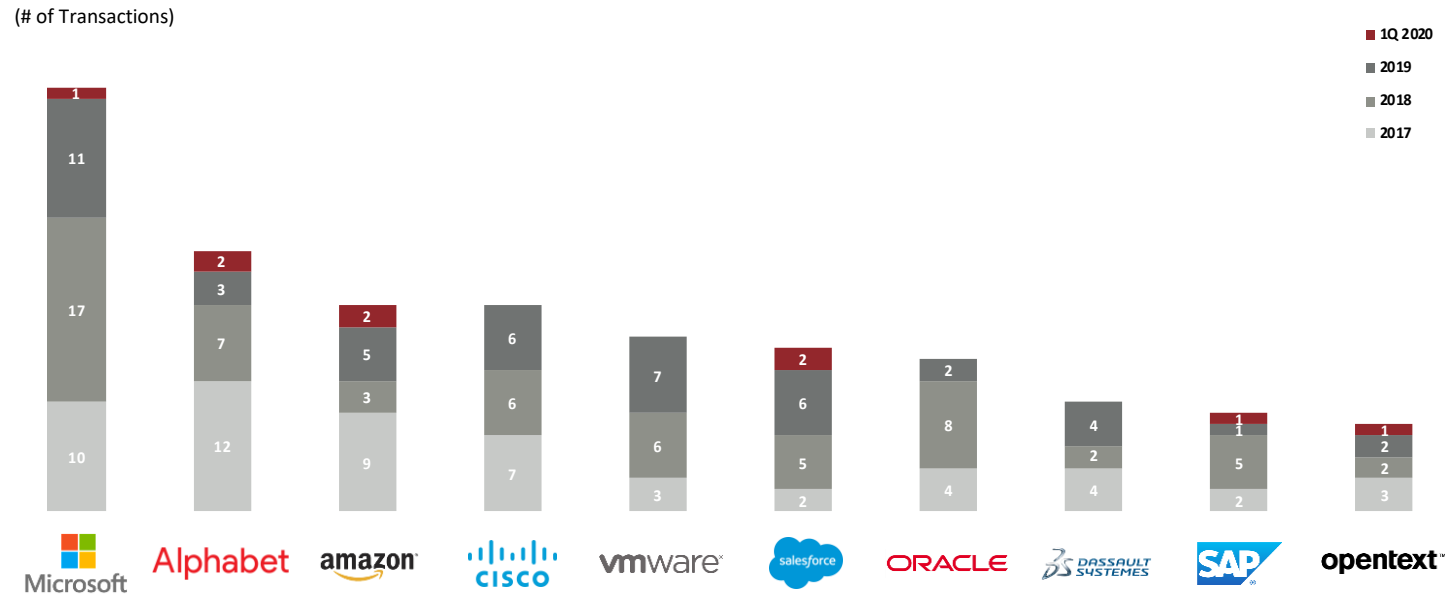
Harvest Partners' investment in MRI Software

- MRI Software provides real estate management software solutions for more than 8,500 enterprise clients, representing over two million users.
- The Company's portfolio of real estate solutions includes tools for commercial and residential property management, leasing, accounting, investment management and modeling, and facilities management.
- Post investment, MRI will use Harvest's capital to further the development of their comprehensive software portfolio and to continue strategic add-on acquisitions.

Software Acquisition Activity – Strategic Acquirers

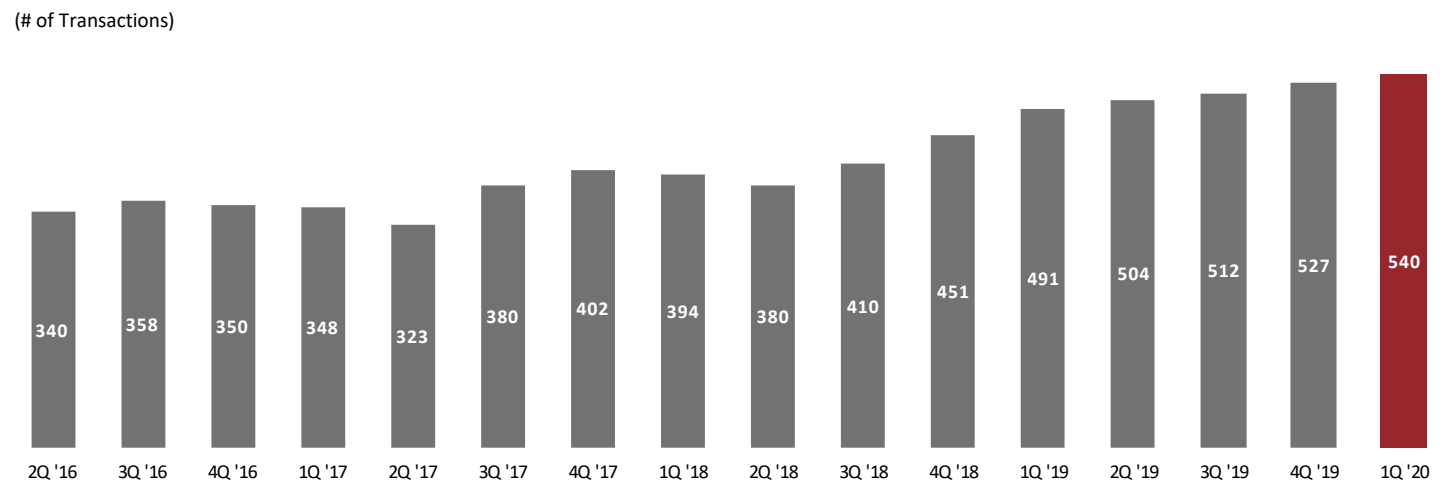
Most Active Strategic Acquirers of Software Assets by Volume¹

- › The 10 most active strategic software acquirers registered nine acquisitions in 1Q 2020. M&A activity among large strategic software acquirers lags the pace set in 2019.
- › Alphabet, Amazon, and Salesforce were the most active strategic acquirers in 1Q 2020, with two acquisitions each. Alphabet acquired Pointy and Appsheets, Amazon acquired Sye Streaming Service and DataRow, and Salesforce acquired Evergage and Vlocity.



Global Strategic Acquirer Software M&A Activity By Volume¹

- › Globally, strategic software M&A registered 540 acquisitions in 1Q 2020, a slight increase from 4Q 2019.
- › In 1Q 2020, cash-rich strategics remained highly acquisitive as management teams continue to view inorganic growth as a viable value creation strategy.
- › However, the COVID-19 pandemic is expected to slow M&A activity as strategics focus inward to assess the potential near-term and long-term implications of the virus.



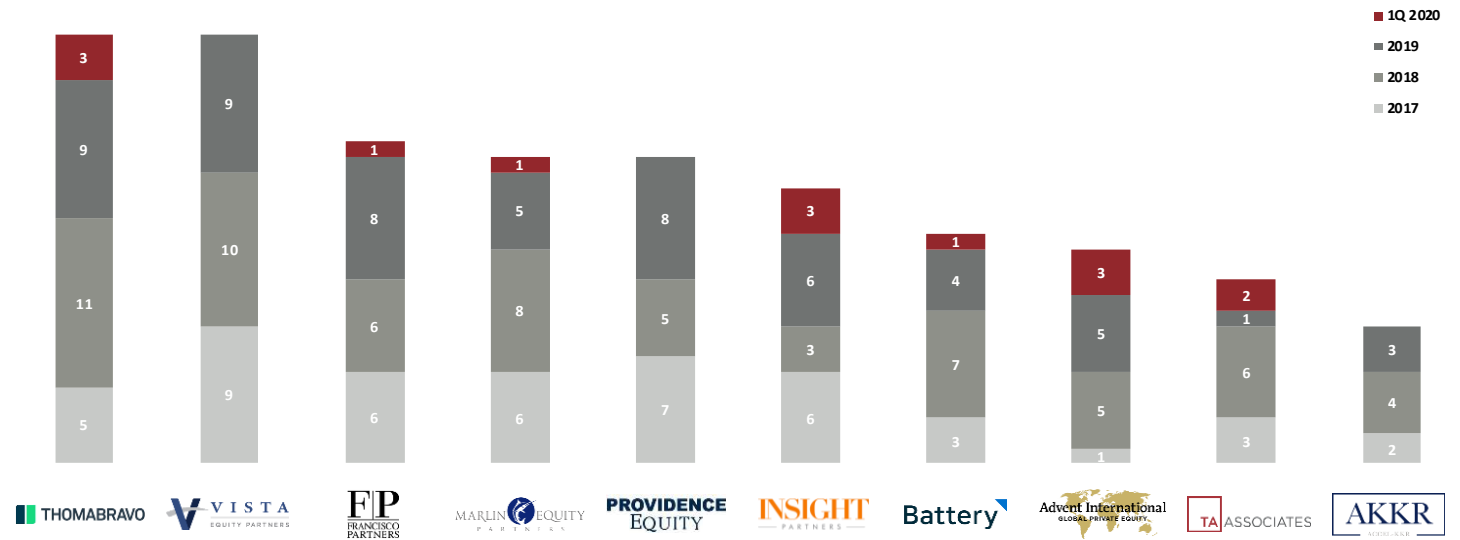
Note: Includes control investments only.

Software Acquisition Activity – Private Equity

Most Active Private Equity Buyers of New Software Platforms by Volume¹

- > The 10 most active software investors completed 14 new platform investments in 1Q 2020.
- > Thoma Bravo and Advent International were the most active software private equity firms in 1Q 2020, completing three platform acquisitions each.
- > Notable 1Q 2020 private equity platform acquisitions include Advent's pending take-private of Forescout Technologies, Thoma Bravo's acquisition of Instructure and pending acquisition of Command Alkon, and Insight Partners' acquisition of Veeam Software.

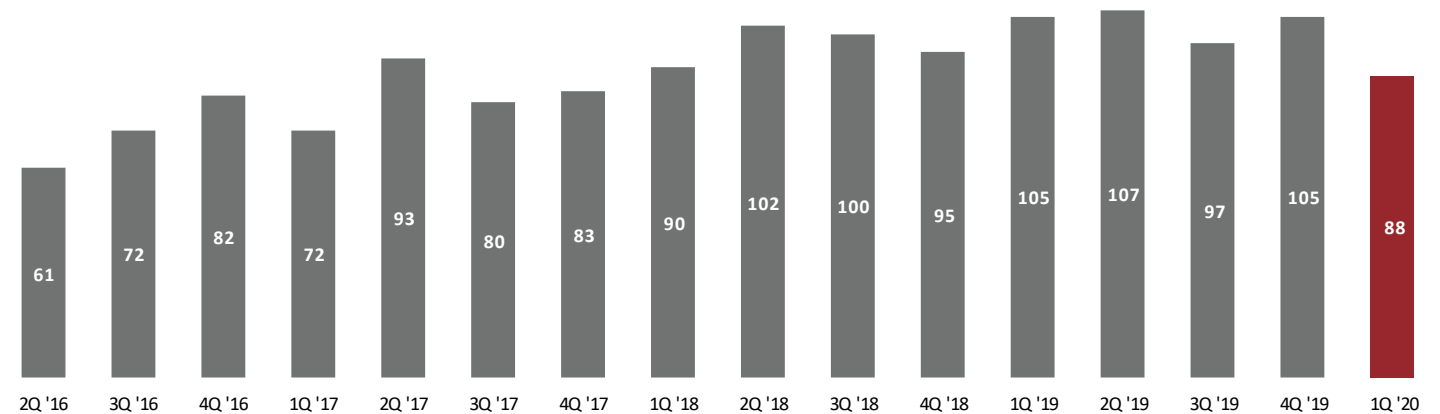
(# of Platform Transactions)



Global Private Equity New Software Platforms M&A Activity by Volume¹

- > Globally, private equity buyers registered 88 new software platform investments in 1Q 2020, a 16% decrease from 4Q 2019.
- > Private equity investment across the software sector exhibited strong momentum in the first half of 1Q 2020; however, deal activity slowed in March given the uncertainty surrounding the global economy and COVID-19.

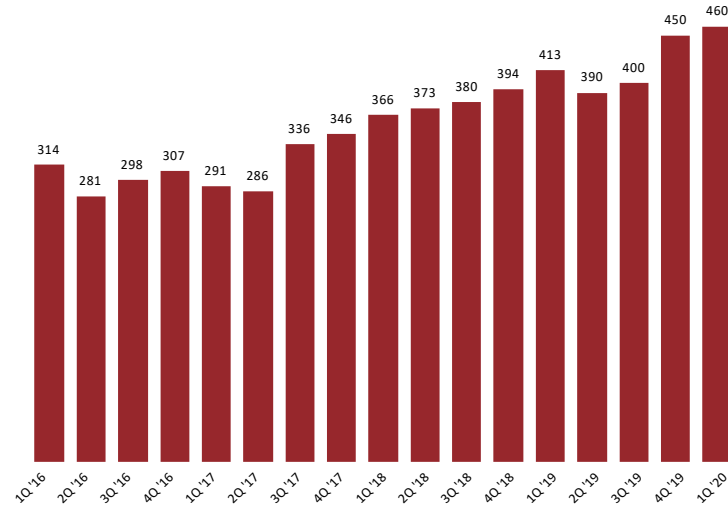
(# of Platform Transactions)



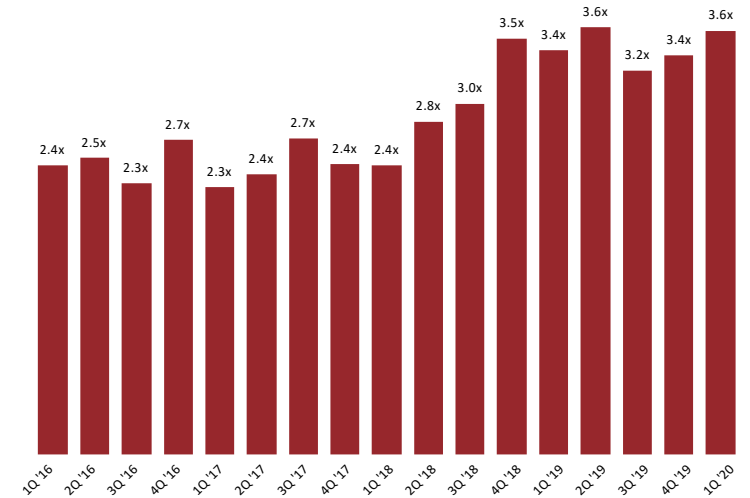
Note: Includes control new platform investments only. Excludes add-on acquisitions.

Application Software – M&A Market Summary

Application Software M&A Volume¹ (Global)



Median M&A Revenue Multiples¹ (Reported)



- › Application Software M&A registered 460 transactions in 1Q 2020, a slight increase from the prior quarter.
- › Median reported Application Software M&A transaction multiples increased to 3.6x revenue in 1Q 2020.

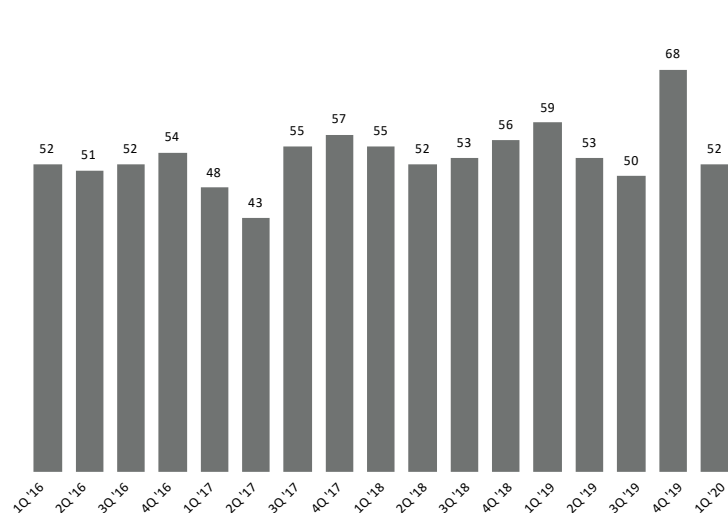
Notable Application Software M&A Transactions^{1,4,5}

- › In 1Q 2020, vertical-specific software companies continue to be highly sought after by private equity and strategic buyers alike.
- › Notable 1Q 2020 vertical-specific software transactions include Advent's pending acquisition of Conserve (Energy), Premira's pending acquisition of Lytx (Transportation), and First American Financial's acquisition of Docutech (Financial).

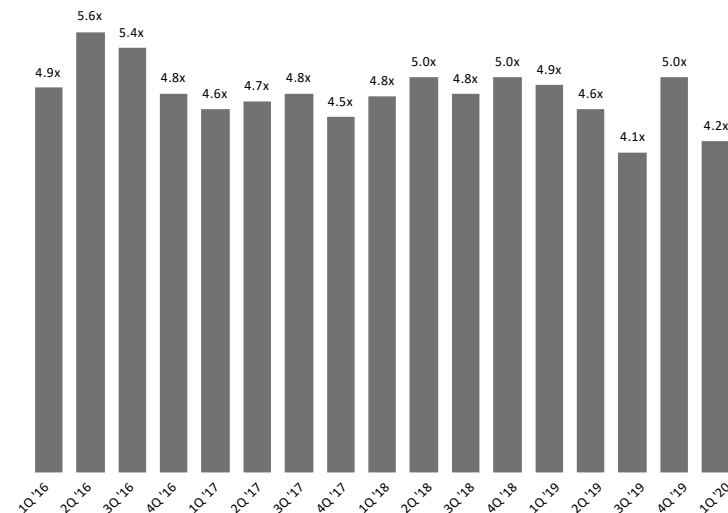
DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Application Software					
Pending	Permira	Lytx	Provider of fleet safety management solutions.	NA	NA
Pending	Worldline	Ingenico Group	Provider of payment solutions through in-store, mobile, and online channels worldwide.	\$10,154	3.0x
Pending	Advent International	Conserve	Provider of utility management and billing software.	\$2,500	NA
Pending	Synacor	Qumu	Provider of tools to create, manage, secure, distribute, and deliver live and on-demand video content for enterprises.	NA	NA
3/17/2020	Hexagon AB	CAEfatigue	Provider of mechanical fatigue simulation software solutions.	NA	NA
3/17/2020	Eruptr (H.I.G. Capital)	HealthAware	Provider of an online patient engagement platform.	NA	NA
3/09/2020	OpenText	XMedius Solutions	Provider of secure file exchange and unified communications software.	\$75	1.9x
3/02/2020	First American Financial	Docutech	Provider of mortgage loan document management software for lenders and consumers.	\$350	NA
2/28/2020	Veritas Capital	Campus Management & Edcentric	Provider of student information solutions (SIS), CRM, ERP, and analytics software solutions.	NA	NA
2/21/2020	Battery Ventures	Tech Soft 3D	Provider of development tools for software companies to build desktop, mobile, and web applications.	NA	NA
2/20/2020	InsightSoftware (Genstar)	LongView Solutions	Provider of corporate performance management (CPM), corporate tax, and business intelligence (BI) solutions.	NA	NA
2/20/2020	The Carlyle Group	MAK-SYSTEM	Provider of software to manage blood, plasma, and tissue collection facilities.	NA	NA
2/10/2020	DealerSocket (Vista Equity)	Auto/Mate	Provider of dealership management system (DMS) software to retail automotive dealerships.	NA	NA
1/31/2020	Credentials eSCRIP-SAFE	Parchment	Provider of an eTranscript exchange community that connects education institutions and employers.	NA	NA
1/15/2020	Harvest Partners	MRI Software	Provider of real estate management software solutions.	HW CONFIDENTIAL	
1/08/2020	Weid North Education	LearnZillion	Provider of an online K-12 educational software platform.	NA	NA
1/08/2020	Bullhorn (Insight Partners; Genstar)	Herefish	Provider of a business process automation platform for staffing and recruiting firms.	NA	NA
1/07/2020	The Halifax Group	TriMech Solutions	Provider of computer-aided design and engineering software.	NA	NA
1/07/2020	Bregal Unternehmerkaptal	Iptor Supply Chain Systems	Provider of supply chain management, planning, and logistics software.	HW CONFIDENTIAL	
1/03/2020	AFV Partners	Aircraft Performance Group	Provider of enterprise software solutions for runway analysis, weight and balance analysis, and training.	NA	NA
MEDIAN				\$1,425	3.0x

SaaS – M&A Market Summary

SaaS M&A Volume¹ (Global)



Median M&A Revenue Multiples¹ (Reported)



- › SaaS M&A volume registered 52 transactions in 1Q 2020.
- › Median reported SaaS transaction revenue multiples were 4.2x in 1Q 2020.

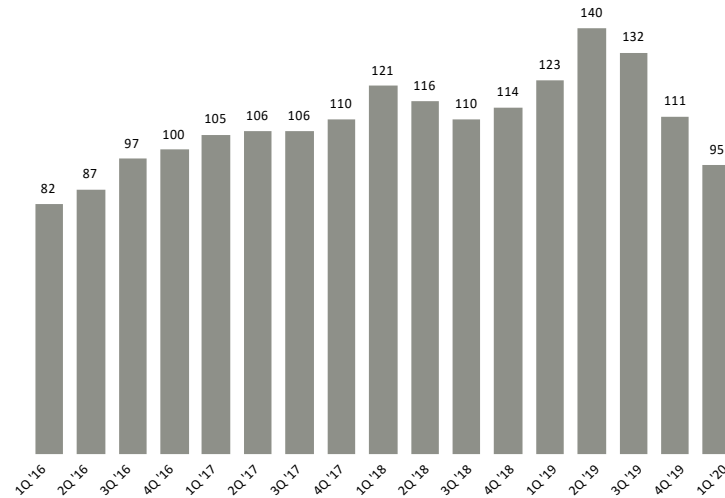
Notable SaaS M&A Transactions^{1,4,5}

- › Investors continued to pursue SaaS businesses given the visibility and stability of these subscription-driven revenue models.
- › Notable 1Q 2020 SaaS transactions include Cornerstone OnDemand's pending acquisition of Saba Software, Ultimate Software's pending acquisition of Kronos, Blackstone's acquisition of Dealpath, and Thoma Bravo's acquisition of Instructure.

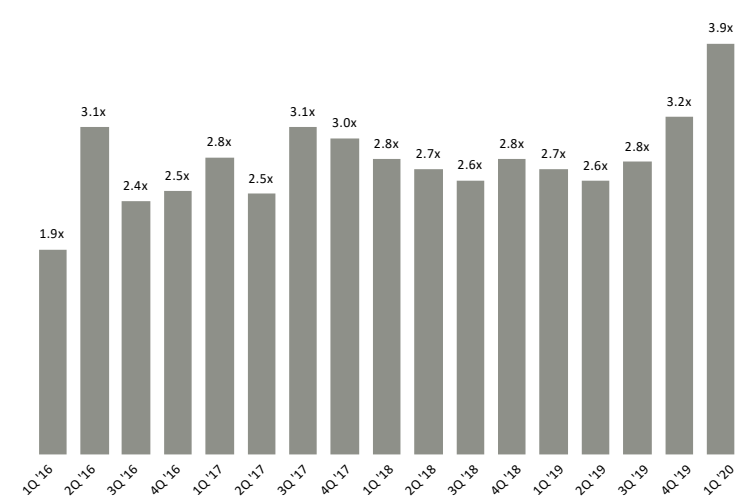
DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
SaaS					
Pending	Salesforce	Vlocity	Provider of industry-specific software built on top of the Salesforce CRM platform.	\$1,330	NA
4/22/2020	Cornerstone OnDemand	Saba Software	Provider of a cloud-based intelligent talent management software solution.	\$1,295	NA
Pending	Schneider Electric	RIB Software	Provider of software solutions for construction enterprises and projects across various industries worldwide.	\$1,333	6.2x
Pending	Ultimate Software (H&F; Blackstone)	Kronos	Provider of human capital management and workforce management solutions.	NA	NA
4/23/2020	Thoma Bravo	Command Alkon	Provider of a supplier collaboration platform for construction's heavy work.	NA	NA
4/09/2020	Blackstone	HealthEdge Software	Provider of core administrative and care coordination software for health plans.	\$730	NA
3/20/2020	Thoma Bravo	Instructure	Provider of a SaaS solution for learning, assessment, and performance management.	\$1,952	7.6x
3/16/2020	Torch	Everwise Corporation	Provider of an enterprise-level education technology software platform for early stage employees.	NA	NA
3/12/2020	John Wiley & Sons	Madgex	Provider of web-based job board management software for the publishing industry.	NA	NA
3/02/2020	Refinitiv (Blackstone)	Scivantage	Provider of SaaS online brokerage, tax and portfolio reporting, and wealth management software.	\$82	NA
2/29/2020	Gather Technologies (Vista Equity)	Tripleseat Software	Provider of web-based event management and booking software.	NA	NA
2/27/2020	Blackstone	Dealpath	Provider of a SaaS deal management platform for the real estate industry.	NA	NA
2/26/2020	Freshworks	AnswerIQ	Provider of an AI-powered customer support platform.	NA	NA
2/21/2020	The Descartes Systems Group	Peplevox	Provider of warehouse management software for e-commerce and multichannel retailers.	\$19	NA
2/21/2020	Polaris Partners	TransACT Communications	Provider of digital engagement, compliance, and payment solutions for the education market.	NA	NA
2/13/2020	TA Associates Management	Auction Technology Group	Provider of an online auction marketplace for connecting buyers and sellers.	NA	NA
2/06/2020	CVC Partners	EcoVadis	Provider of a sustainability rating platform and collaborative performance improvement tools.	NA	NA
1/27/2020	Gryphon Investors	PestRoutes	Provider of business management software for the pest control industry.	NA	NA
1/23/2020	Gryphon Investors	Ncontracts	Provider of an integrated vendor, organizational, and compliance risk management platform.	NA	NA
1/22/2020	Cority Software (Thoma Bravo)	Enviance	Provider of cloud-based environmental software to improve compliance, manage employees, and report environmental data.	NA	NA
MEDIAN				\$1,295	6.9x

Data and Analytics – M&A Market Summary

Data and Analytics M&A Volume¹ (Global)



Median M&A Revenue Multiples¹ (Reported)



- › Data and Analytics M&A registered 95 transactions in 1Q 2020, continuing the downward trend of the prior two quarters.
- › Median reported Data and Analytics transaction multiples increased to 3.9x in 1Q 2020.

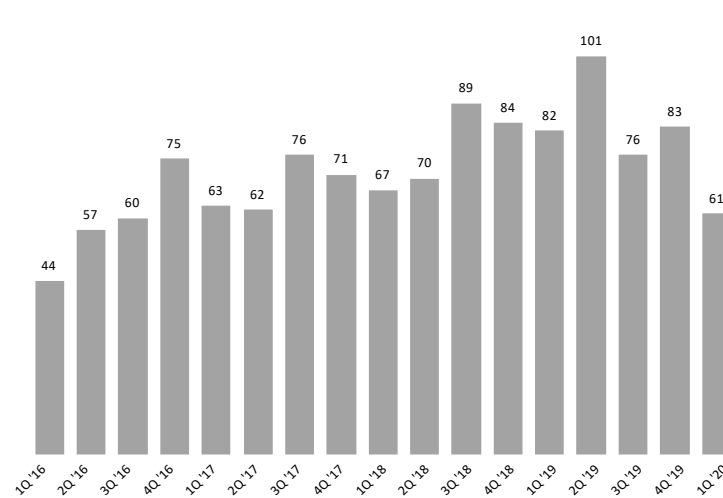
Notable Data And Analytics M&A Transactions^{1,4,5}

- › Data and Analytics continues to represent a key focus area for strategic acquirers, as optimal decision making continues to be driven by complex and real-time data.
- › Notable 1Q 2020 Data and Analytics transactions include Enverus' acquisition of RS Energy, Visa's pending acquisition of Plaid, and Intuit's pending acquisition of Credit Karma.

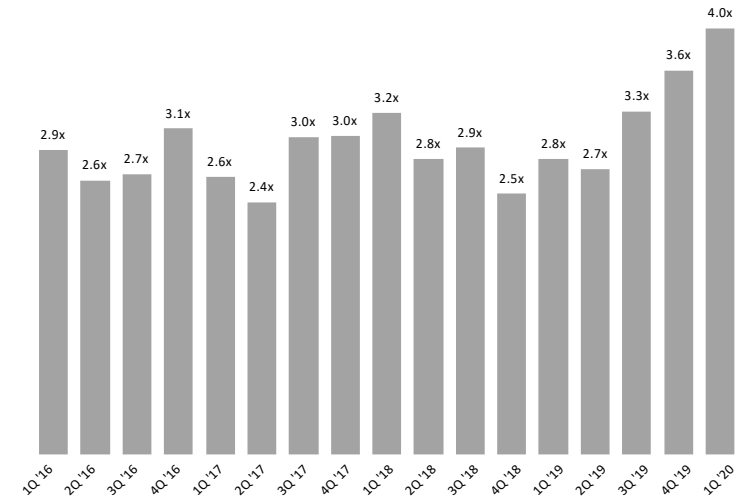
DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Data and Analytics					
Pending	Visa	Plaid	Provider of a data network programming interface that enables consumers to connect fintech apps with bank accounts.	\$5,300	NA
Pending	EQT Partners	RIMES Technologies	Provider of cloud-based managed data and regulatory technology solutions.	\$450	NA
Pending	NVIDIA	SwiftStack	Provider of a multi-cloud data storage and management platform for data-driven applications and workflows.	NA	NA
Pending	Intuit	Credit Karma	Provider of web-based credit scoring, reporting, and monitoring software.	\$7,100	7.1x
3/19/2020	LexisNexis Risk Solutions	Emailage	Provider of fraud prevention and core risk detection software solutions.	\$480	NA
3/19/2020	Thomson Reuters	Pondera Solutions	Provider of a fraud detection as a service software platform.	NA	NA
3/17/2020	VideoAmp	Conversion Logic	Provider of a SaaS platform for delivering digital and video media performance insights.	NA	NA
3/16/2020	Riskconnect (Thoma Bravo)	Xactium	Provider of risk management software to increase risk visibility and improve productivity.	NA	NA
3/06/2020	Pamlico Capital	HelioCampus	Provider of an education analytics and visualization platform for higher education institutions.	NA	NA
3/05/2020	Group M Worldwide	Sandtable	Provider of human behavioral data analytics software.	NA	NA
3/03/2020	Black Knight	Collateral Analytics	Provider of real estate analytic software solutions.	NA	NA
2/28/2020	Clarivate Analytics	Decision Resources Group	Provider of a healthcare research and data analytics software platform.	\$950	4.6x
2/27/2020	DocuSign	Seal Software	Provider of contract analytics and discovery software.	\$188	NA
2/18/2020	Quorum Software (Thoma Bravo)	EnergyIQ	Provider of data management solutions for oil and gas exploration and production companies.	NA	NA
2/17/2020	Trax Technology Solutions	Qoopus Technology	Provider of AI-based in-store monitoring and autonomous inventory management software.	NA	NA
2/12/2020	E Source	TROVE Predictive Data Science	Provider of AI predictive data science software solutions.	NA	NA
2/12/2020	Enverus (Genstar)	RS Energy	Provider of software and advanced analytics solutions for oil and gas operators and investors.	NA	NA
2/10/2020	Wolters Kluwer	CGE Risk Management Solutions	Provider of risk management software for organizations in high-risk and asset-intensive industries.	NA	NA
2/03/2020	EPAM Systems	Deltix	Provider of financial data management systems for quantitative research and algorithmic and automated trading.	\$30	NA
1/08/2020	Dun & Bradstreet	Orb Intelligence	Provider of digital business identity and firmographic data solutions.	NA	NA
MEDIAN				\$480	5.8x

Infrastructure Software – M&A Market Summary

Infrastructure Software M&A Volume¹ (Global)



Median M&A Revenue Multiples¹ (Reported)



- › Infrastructure Software M&A registered 61 transactions in 1Q 2020, a decrease from 83 in 4Q 2019.
- › In 1Q 2020, median reported Infrastructure Software transaction multiples increased to 4.0x revenue.

Notable Infrastructure Software M&A Transactions^{1,4,5}

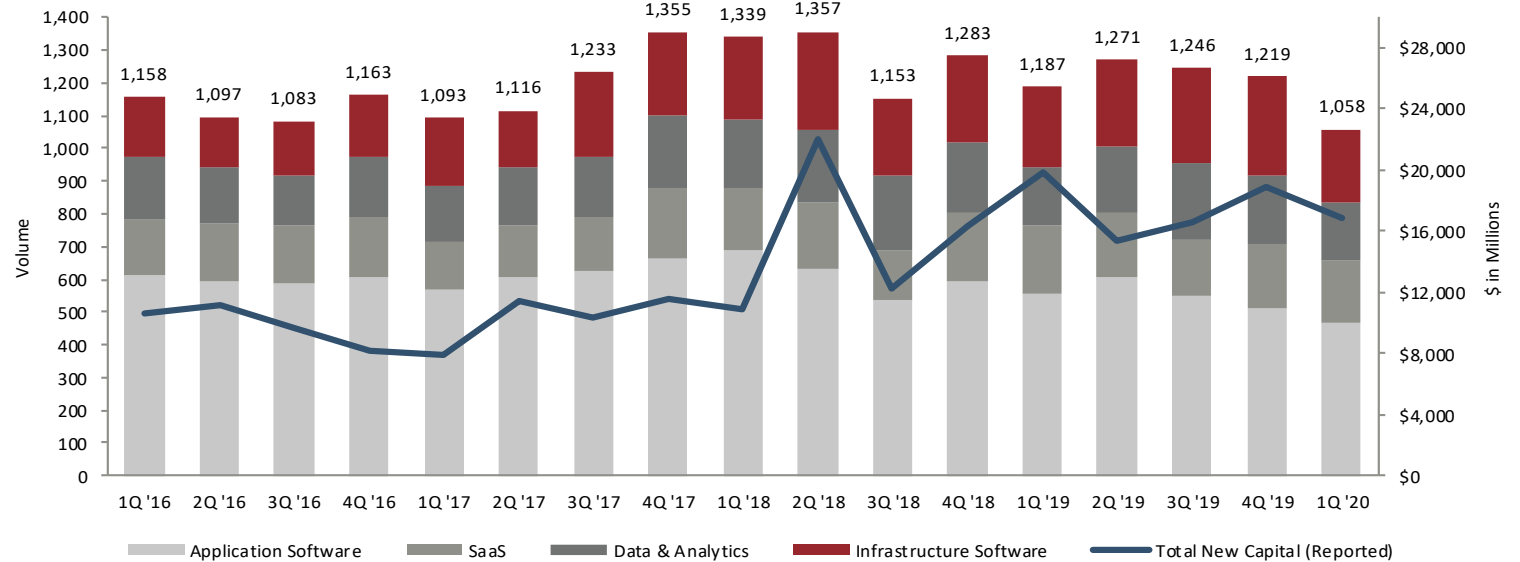
- › Private equity investors remain highly active buyers of infrastructure and DevOps assets as they look to bolster capabilities and differentiate in a highly fragmented market.
- › Noteworthy Infrastructure Software M&A transactions in 1Q 2020 include BMC Software's pending acquisition of Compuware, Hellman and Friedman's pending acquisition of Checkmarx, and STG Partners' pending acquisition of RSA Security.

DATE CLOSED	ACQUIRER	TARGET	DESCRIPTION	ENTERPRISE VALUE (MM)	REVENUE MULTIPLE
Infrastructure Software					
Pending	Advent International	Forescout Technologies	Provider of security software for device visibility and control.	\$1,786	5.3x
Pending	BMC Software (KKR)	Compuware	Provider of mainframe application development, delivery, and support software.	NA	NA
Pending	Hellman & Friedman	Checkmarx	Provider of DevOps and application security testing software.	\$1,150	NA
Pending	Microsoft	Affirmed Networks	Provider of virtualized network services for cellular networks.	\$1,350	NA
Pending	ESW Capital	BroadVision	Provider of document creation, management, and collaboration software.	\$20	4.6x
Pending	Palo Alto Networks	CLOUDGENIX	Provider of a software-defined wide-area network (SD-WAN) to enforce compliance with company security protocols.	\$420	NA
Pending	STG Partners; OTPP; Alpinvest	RSA Security	Provider of cybersecurity detection, management, and prevention solutions.	\$2,075	NA
3/31/2020	McAfee	Light Point Security	Provider of remote browser isolation security software.	NA	NA
3/31/2020	SmartBear Software	Test Management Systems	Provider of a test management app for enterprise teams.	NA	NA
3/05/2020	Martin Equity Partners	Heimdal Security	Provider of a cloud-based endpoint protection platform.	NA	NA
2/11/2020	Insight Partners; CapitalG	Armis	Provider of an agentless IoT security platform for enterprises to identify unmanaged devices and networks.	\$1,100	NA
2/06/2020	ServiceNow	Loom Systems	Provider of an AI-powered log analysis platform.	\$58	NA
2/03/2020	SAP	PlainID	Provider of an authorization management platform.	NA	NA
2/03/2020	Hewlett Packard Enterprise	Scytale	Provider of a cloud native open-source security platform.	\$20	NA
1/28/2020	Imprivata (Thoma Bravo)	GroundControl Solutions	Provider of cloud-based automation software for provisioning shared mobile devices.	\$20	NA
1/24/2020	F5 Networks	Shape Security	Provider of cybersecurity solutions to defend web and mobile applications from malicious automated cyber-attacks.	\$1,028	17.1x
1/21/2020	CollabNet (TPG)	XebiaLabs	Provider of DevOps and application release automation software.	NA	NA
1/14/2020	Google	Appsheet	Provider of a no-code software development platform for app creation.	NA	NA
1/13/2020	LogicMonitor (Vista Equity Partners)	Unomaly	Provider of AIOps software for IT monitoring automation.	NA	NA
1/01/2020	Cloudflare	S2 Systems	Provider of browser isolation security software to protect organizations from browser-based code attacks.	\$39	NA
MEDIAN				\$724	5.3x

Private Placement Activity by Software Sector

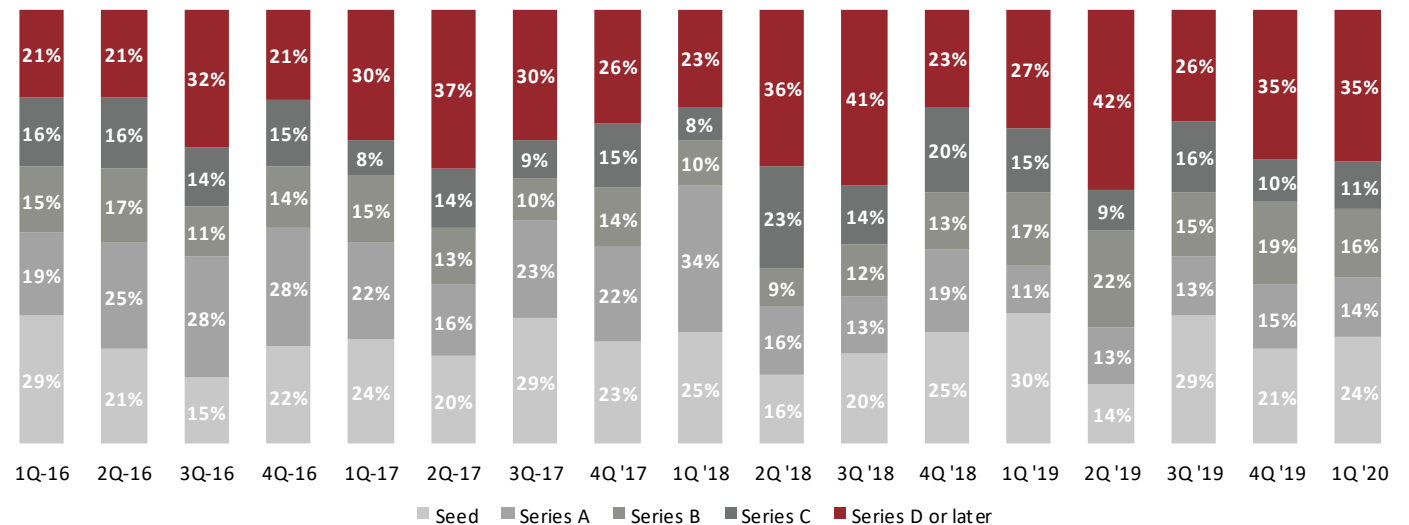
Private Placements by Software Sub-Sector and New Capital Raised^{1,4}

- > There were 1,058 private placement financings in 1Q 2020, which represented a 13% decrease compared to 4Q 2019.
- > Total reported capital investment in the software sector decreased slightly in 1Q 2020, but it remains in line with 2019 levels.
















Private Placement Capital Raised by Round^{1,4} (As Percentage of Total Reported Private Placement Capital)

- > In 1Q 2020, there was a near-even split on private placement capital invested across early stage (Seed – B) and late stage (C – later) rounds.
- > Notable private placements across stages included ActiveCampaign's \$100 million Series B led by Susquehanna Growth Equity and Silversmith Capital, HeadSpin's \$60 million Series C led by Dell Technologies Capital and Iconiq Capital, and AppsFlyer's \$210 million Series D led by General Atlantic.



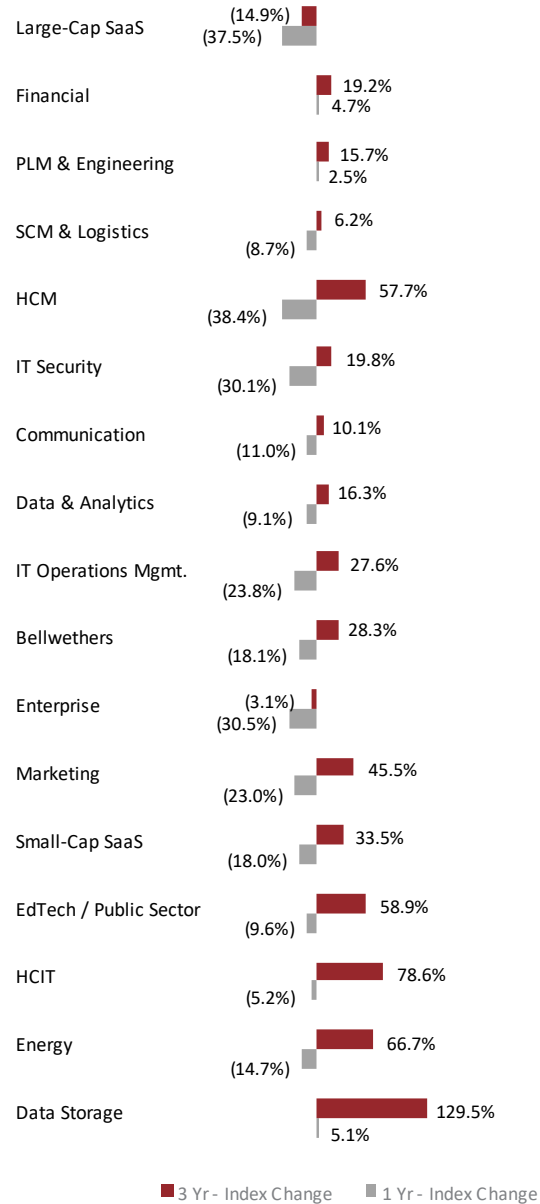
Select Recent Software Private Placements^{1,4}

DATE	COMPANY	SECTOR	ROUND	ROUND SIZE (\$MM)	TOTAL RAISED (\$MM)	INVESTORS (CURRENT ROUND)	DESCRIPTION
02/25/20	 headspin	Infrastructure	C	\$60	\$117	Dell Technologies Capital; ICONIQ Capital; Tiger Global Management; Alpha Square Group	Provider of a mobile application optimization, testing, and monitoring software platform.
02/14/20	 toast	SaaS	F	\$400	\$897	Bessemer Venture Partners; TPG; Greenoaks Capital; Tiger Global Management; G Squared; TCV; Durable Capital Partners; Light Street Capital; Alta Park Capital; T. Rowe Price	Provider of a cloud-based point-of-sale and restaurant management platform.
01/28/20	 ActiveCampaign >	SaaS	Late Stage	\$100	\$120	Susquehanna Growth Equity; Silversmith Capital	Provider of a customer experience automation platform.
01/22/20	 Sysdig	Infrastructure	E	\$69	\$202	Insight Partners; Bain Capital Ventures; Accel; Goldman Sachs; Glynn Capital	Provider of a cloud-native container security and monitoring platform.
01/22/20	 SECURITI.ai	Infrastructure	B	\$50	\$81	General Catalyst; Mayfield Fund	Provider of PrivacyOps and data security automation software.
01/21/20	 AppsFlyer	Data and Analytics	D	\$210	\$294	General Atlantic; Qumra Capital; Goldman Sachs Private Capital; Pitango Venture Capital; Magma Venture Partners; Deutsche Telekom Capital Partners	Provider of mobile marketing attribution software for developers, brands, and advertising agencies.
01/21/20	 snyk	Infrastructure	C	\$150	\$255	Stripes Group; Accel Partners; Canaan Partners; Coatue Management; Tiger Global Management; GV; BOLDstart Ventures; Salesforce Ventures; Amity Ventures; Trend Forward Capital	Provider of security analysis software to identify open-source vulnerabilities.
01/20/20	 Personio	SaaS	C	\$75	\$130	Accel Partners; Index Ventures; Lightspeed Venture Partners; Northzone Ventures; Global Founders Capital; Picus Capital	Provider of a web-based human resource management and recruitment platform for small- and medium-sized enterprises (SMEs).
01/16/20	 LaunchDarkly	Infrastructure	C	\$54	\$133	Bessemer Venture Partners; Threshold Ventures; Redpoint Management; Uncork Capital; Bloomberg Beta; Vertex Ventures	Provider of a feature management platform designed to eliminate software development risk.
01/15/20	 FlashParking	SaaS	B	\$60	\$64	L Catterton Partners	Provider of cloud-based parking and mobility solutions.
01/09/20	 SISENSE	Data and Analytics	Late Stage	\$100	\$284	Insight Partners; Bessemer Venture Partners; Battery Ventures; DFJ Growth Management; ClaiTech	Provider of data and business analytics software to improve data processing capabilities.
01/08/20	 KYRUUS	SaaS	D	\$42	\$126	VR Adviser; Highland Capital Partners; Providence Ventures; Salesforce Ventures	Provider of healthcare provider search and scheduling solutions for hospitals and health systems.
01/07/20	 highradius	SaaS	B	\$125	\$185	ICONIQ Capital; Susquehanna Growth Equity; Citi Ventures	Provider of cloud-based order-to-cash and treasury management software.

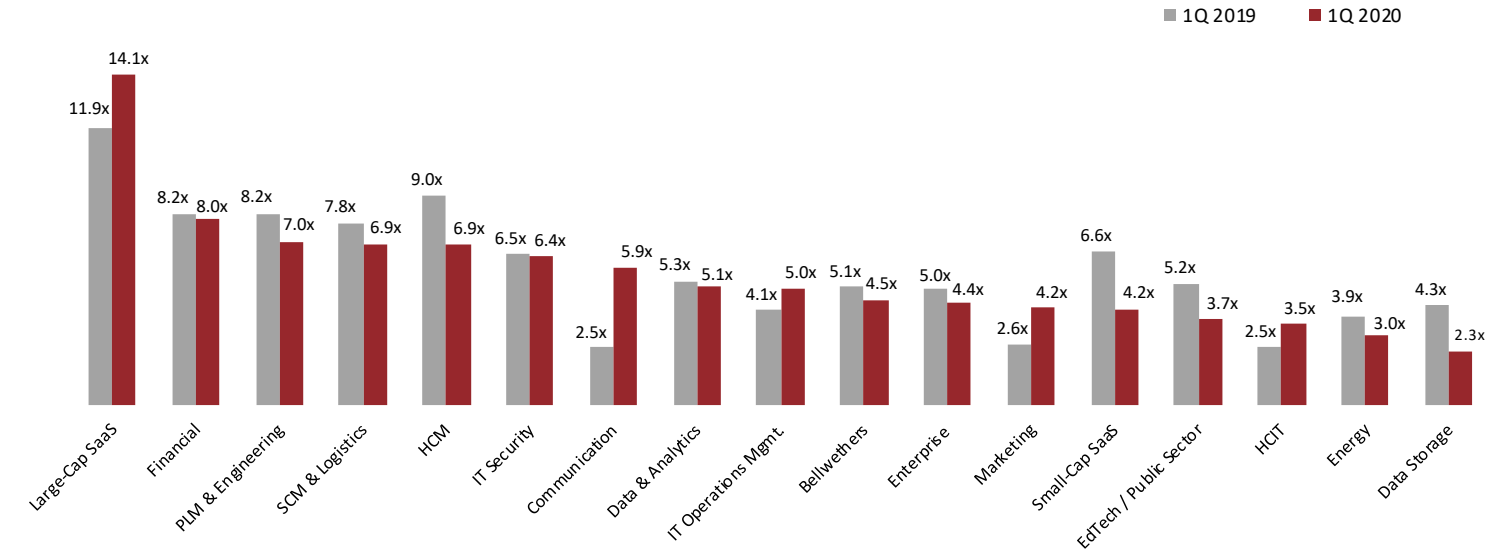
Note: Financial information presented above represents reported capital raised only.

Public Software Valuation Multiples by Sector¹

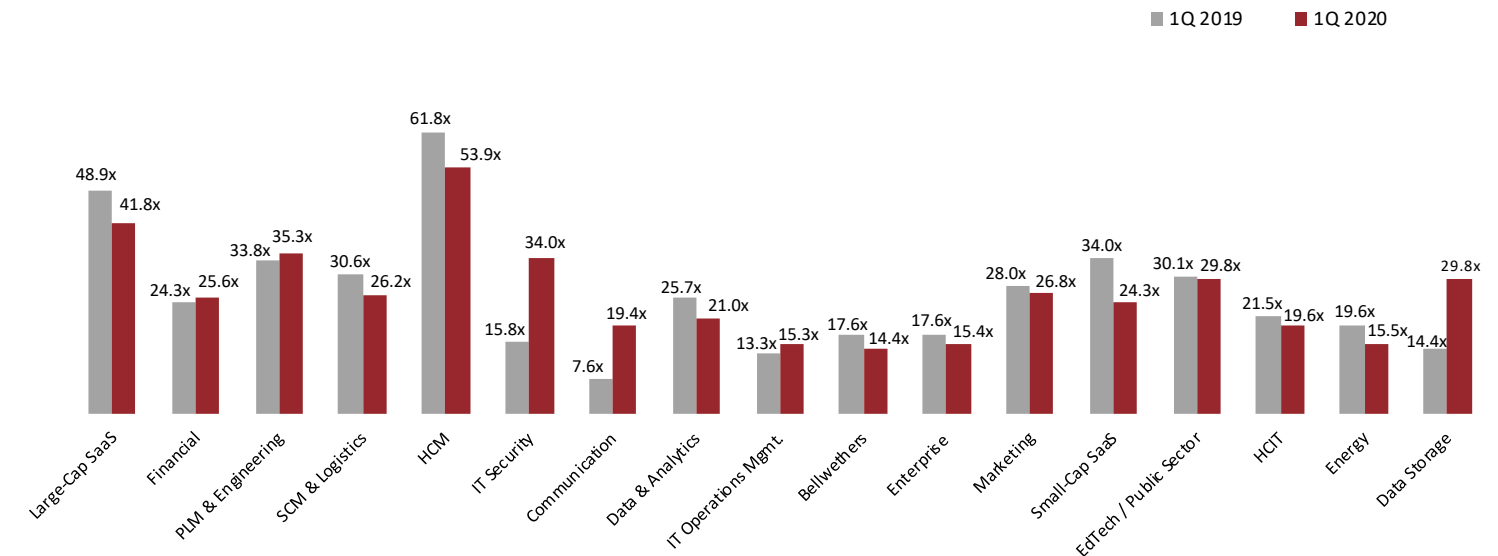
Stock Performance (1- & 3-Year)



Revenue Multiple Comparison 1Q 2019 vs. 1Q 2020



EBITDA Multiple Comparison 1Q 2019 vs. 1Q 2020

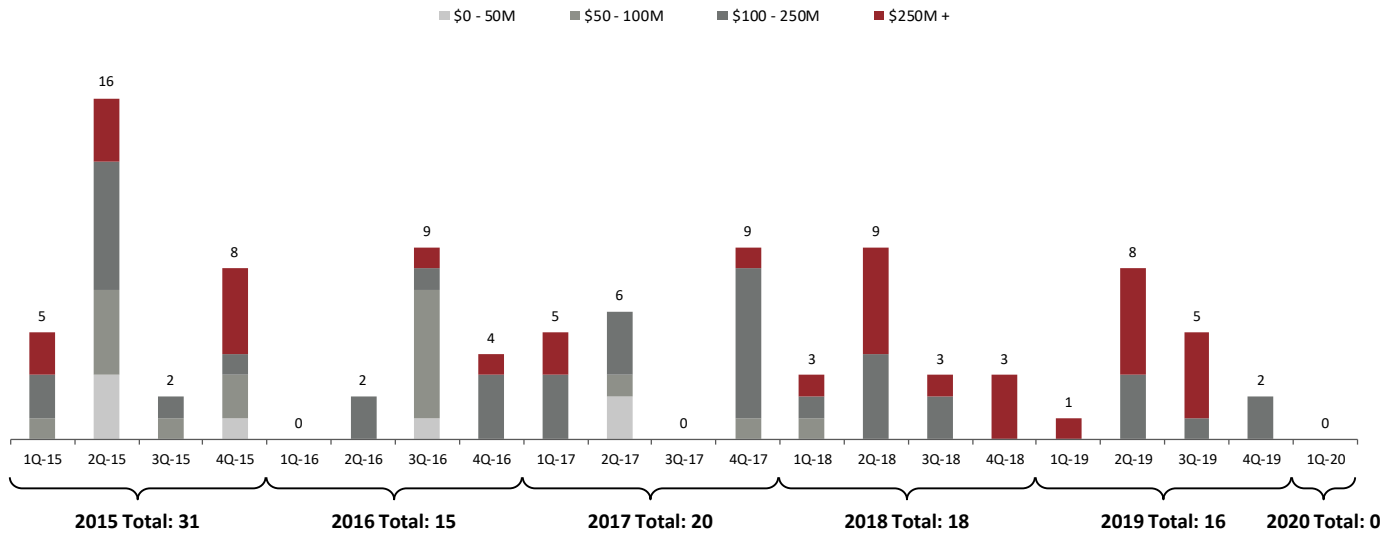


Key Metrics by Sector – Comparable Public Software Companies¹

	COMPARABLE COMPANY SET MEDIANS				CORRELATION WITH EV / REVENUE MULTIPLE		
	EV / LTM REVENUE MULTIPLE	NTM REVENUE GROWTH	NTM EBITDA GROWTH	LTM EBITDA MARGIN	NTM REVENUE GROWTH	NTM EBITDA GROWTH	LTM EBITDA MARGIN
Large-Cap SaaS	14.1x	23%	237%	9%	66%	16%	-
Financial	8.0x	10%	38%	34%	27%	-	52%
PLM & Engineering	7.0x	10%	46%	22%	63%	-	48%
SCM & Logistics	6.9x	7%	17%	20%	85%	-	67%
HCM	6.9x	8%	51%	20%	73%	-	31%
IT Security	6.4x	10%	19%	19%	66%	-	69%
Communication	5.9x	7%	33%	20%	80%	-	-
Data & Analytics	5.1x	10%	132%	12%	89%	-	98%
IT Operations Mgmt.	5.0x	6%	41%	25%	74%	93%	-
Bellwethers	4.5x	5%	18%	30%	77%	43%	41%
Enterprise	4.4x	5%	23%	28%	56%	55%	-
Marketing	4.2x	19%	73%	12%	62%	29%	-
Small-Cap SaaS	4.2x	13%	77%	18%	78%	-	-
EdTech / Public Sector	3.7x	10%	69%	19%	-	-	71%
HCT	3.5x	9%	61%	22%	83%	-	27%
Energy	3.0x	2%	15%	19%	-	-	93%
Data Storage	2.3x	10%	19%	13%	28%	59%	-

Summary of Technology IPOs

Recent U.S. Technology IPO Activity (by Offering Size)¹

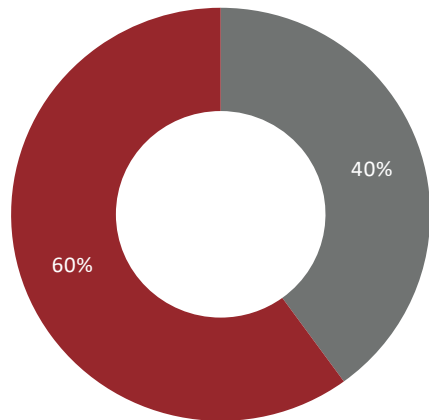


- › Technology IPO activity came to a pause in 1Q 2020 with no new technology companies listing. This is the first time this has occurred since 3Q 2017.
- › The current economic uncertainty surrounding COVID-19, especially around the ability to access capital, has resulted in technology companies reevaluating their IPO timelines, with several high-profile unicorns, notably Airbnb, announcing they are postponing their IPOs.
- › In contrast to the performance of many highly touted IPOs at the end of 2019, recent IPOs including Zoom, Slack, and Teladoc have demonstrated impressive performance as they offer solutions that are positioned to capitalize on COVID-19 restrictions.

Offering Size at IPO (LTM)¹

(All tech IPOs over the last 12 months)

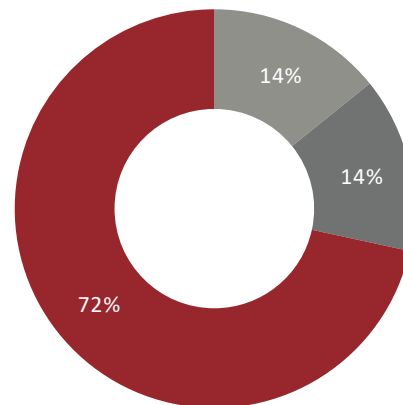
■ \$50 - 100M ■ \$100 - 250M ■ \$250M +



Market Cap at IPO (LTM)¹

(All tech IPOs over the last 12 months)

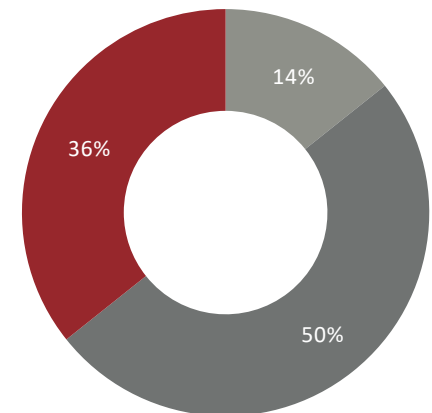
■ \$0-50M ■ \$50-500M ■ \$500M-\$1B ■ \$1B+



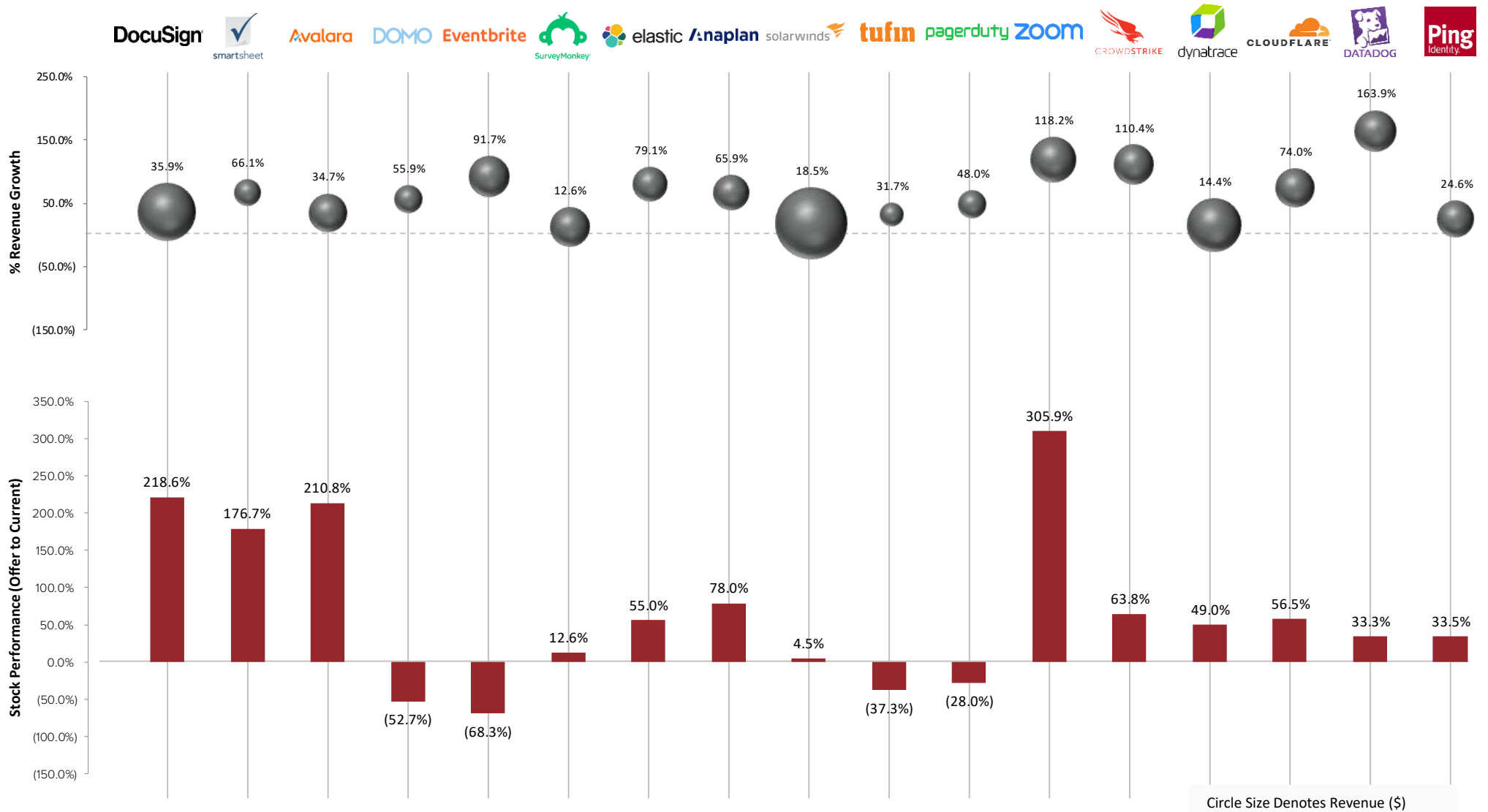
Revenue Growth (1YR Prior to IPO)¹

(All tech IPOs over the last 12 months)

■ < 25% ■ 25 - 75% ■ > 75%



Key Performance Metrics for Recent Software IPOs¹



IPO DATE	4/26/18	4/26/18	6/14/18	6/28/18	9/19/18	9/25/18	10/4/18	10/11/18	10/18/18	4/10/19	4/10/19	4/17/19	6/11/19	7/31/19	9/13/19	9/18/19	9/19/19
OFFER PRICE PER SHARE	\$29.00	\$15.00	\$24.00	\$21.00	\$23.00	\$12.00	\$36.00	\$17.00	\$15.00	\$14.00	\$24.00	\$36.00	\$34.00	\$16.00	\$15.00	\$27.00	\$15.00
MARKET CAP AT OFFER (\$M)	\$4,411.2	\$174.5	\$1,559.5	\$455.5	\$1,800.0	\$1,493.7	\$2,501.7	\$2,067.9	\$4,649.1	\$454.1	\$1,766.7	\$1,157.2	\$703.8	\$4,486.6	\$1,299.2	\$745.2	\$1,192.7
OFFERING SIZE (\$M)	\$629.3	\$174.5	\$180.0	\$193.2	\$230.0	\$180.0	\$252.0	\$263.5	\$375.0	\$107.8	\$217.7	\$751.3	\$612.0	\$569.8	\$525.0	\$648.0	\$187.5
OFFER TO CURRENT	218.6%	176.7%	210.8%	(52.7%)	(68.3%)	12.6%	55.0%	78.0%	4.5%	(37.3%)	(28.0%)	305.9%	63.8%	49.0%	56.5%	33.3%	33.5%

Select HW TMT Transactions

 strategic investment in MRI	 acquired by Bregal	 investment from INSIGHT PARTNERS KENNET AUGMENTUM	 acquired by WENDEL	 recapitalized by SQUARE CAPITAL	 acquired VENTIV	 acquired by WAUD CAPITAL	 significant growth investment from MARTIS CAPITAL	 acquired by DELTAK	 acquired by ADVENT INTERNATIONAL	 significant growth investment from THOMABRAVO	 acquired by eSOLUTIONS	 acquired by DATIX	 controlling investment from COVE HILL PARTNERS	 acquired CALIBER SOFTWARE
 acquired by PEC	 acquired MAILGUN	 strategic investment from INSIGHT PARTNERS	 acquired by DISCOVERORG	 acquired COMBELL GROUP	 acquired by DASSAULT SYSTEMES	 acquired WRIKE	 acquired by CUBIC	 acquired by WCAS	 acquired SYMLPR	 acquired by BERTELSMANN	 acquired by LIGHTYEAR CAPITAL & OAK HC/FT	 acquired PIXOMONDO	 acquired by ILLUMINATE EDUCATION	 acquired by GENSTAR
 acquired by THE JORDAN COMPANY	 acquired JRELATION	 a wholly-owned affiliate of GE HEALTHCARE acquired by IMPRIVATA & INSPIRA	 invested in DATIX	 majority investment from HG	 acquired by GI PARTNERS	 acquired by BDT CAPITAL PARTNERS	 acquired by PAMPLONA CAPITAL MANAGEMENT	 acquired by EQUIAN	 acquired by PROVIDENCE EQUITY & GSV	 investment from INSIGHT PARTNERS	 acquired PERFORCE	 acquired by HLG CAPITAL	 merged with RESEARCH NOW	 investment from BV
 acquired by ACCRUENT	 acquired by MSOUTH	 acquired HEALTHLOGISTICS	 acquired by RIVERSIDE PARTNERS	 investment from INSIGHT PARTNERS	 acquired by AMAZON	 acquired by INTELLIGENT	 acquired by VISTA EQUITY PARTNERS	 acquired by ITRON	 acquired ABILA	 majority investment from GENSTAR	 growth investment from PAMLICO CAPITAL	 acquired by MINISTRY BRANDS	 majority investment from INSIGHT PARTNERS	 acquired by EXPONENT
 majority investment from THE CARLYLE GROUP	 recapitalized by GI PARTNERS	 acquired by PHILIPS	 acquired MEDHOK	 acquired by WORKFORCE SOFTWARE	 acquired by WASSERSTEIN & CO.	 acquired by SYKES	 acquired by RPX	 acquired by GALE	 recapitalized by GENSTAR	 acquired by HLG CAPITAL	 acquired by BIOCLINICA	 acquired by TECHNICAL	 acquired by CIP CAPITAL	 acquired by PARKERGALE
 acquired by KPN	 acquired by SOLEPA	 acquired by ROPER	 acquired a majority stake in ACCESS	 acquired by GI PARTNERS	 majority investment from HGGC	 minority investment from SUNPOWER	 acquired by BLACKBAUD	 acquired by YASKAWA	 acquired by EMDEON	 acquired by THE CARLYLE GROUP	 strategic investment from TCV	 merged with ACCELLOS	 acquired by AUTOMIC	 acquired by THE CARLYLE GROUP
 acquired by HEARST	 acquired by INVENTIV HEALTH	 acquired by RELIAS LEARNING	 acquired by GENPACT	 acquired by TDX	 acquired by PAREXEL	 acquired by LGP	 acquired by HEARST	 acquired by VISTA EQUITY PARTNERS	 acquired by SUMMIT PARTNERS	 acquired by IMTECH	 acquired by ARANNA CAPITAL PARTNERS	 majority recapitalization by PAMLICO CAPITAL	 recapitalized by GOLDMAN SACHS	 acquired by THOMSON REUTERS

Appendix: Software Sector Public Company Universe¹

	Software Bellwethers	Microsoft	Alphabet	Cisco	Adobe	Oracle	SAP	Salesforce	IBM	HPE		
APPLICATION SOFTWARE	HORIZONTAL	Communication Software	Zoom	Slack	Twilio	NICE	Nuance	MobileIron	Synchronoss			
		Enterprise Software	Adobe	Oracle	SAP	IBM	Intuit	ADP	Amadeus	Constellation	OpenText	Sage
		Human Capital Management (HCM)	ADP	Workday	Paychex	Paycom	Ceridian	Paylocity	Comerstone	Benefitfocus		
		Marketing Software	Adobe	Salesforce	HubSpot	Acxiom	Criteo	ChannelAdvisor	Marin			
		PLM & Engineering Software	Dassault	Autodesk	Ansys	Synopsys	Cadence	Hexagon AB	Trimble	PTC	Nemetschek	Altair
		Supply Chain & Logistics Software	Coupa	Trimble	Wisetech	Manhattan	Descartes	Kinaxis	SPS	American		
APPLICATION SOFTWARE	VERTICAL	Energy Software	Trimble	AVEVA	AspenTech	Itron	PSI					
		Financial Software	Fiserv	MSCI	Square	Jack Henry	SS&C	Black Knight	Blackline	Q2 Holdings	Envestnet	Oracle FSS
		Healthcare IT (HCIT)	Veeva	Cerner	Change Health	Inovalon	Premier	HMS	Allscripts	Model N	NextGen	Evolent Health
		EdTech / Public Sector Software	Constellation	Tyler Tech	Blackbaud	NIC	2U	K12				
SAAS	Large-Cap SaaS (≥ \$3Bn Mkt Cap)	Salesforce	ServiceNow	Zoom	Atlassian	Workday	Veeva	RingCentral	DocuSign	Check Point	CrowdStrike	
	Large-Cap SaaS (cont'd)	Paycom	Coupa	ZenDesk	Dynatrace	Guidewire	Xero	Proofpoint	Avalara	HubSpot	Smartsheet	
	Large-Cap SaaS (cont'd)	RealPage	Five9	Anaplan	AppFolio	Qualys	CyberArk					
	Small-Cap SaaS (< \$3Bn Mkt Cap)	Q2 Holdings	Medallia	Mimecast	Rapid7	Box	Comerstone	Alarm.Com	SPS	Workiva	LivePerson	
	Small-Cap SaaS (cont'd)	PagerDuty	Yext	Model N	Talend	Upland	Eventbrite	Ebix	Benefitfocus	Domo	Castlight Health	
	Data & Analytics	Verisk	Splunk	Datadog	Pegasystems	Verint	Inovalon	Teradata	PROS Holdings	MicroStrategy	Talend	
INFRASTRUCTURE SOFTWARE	IT Operations Management	ServiceNow	VMware	Citrix	Arista	Dynatrace	F5 Networks	SolarWinds	New Relic	Software AG	Fastly	
	IT Operations Management (cont'd)	NetScout	Micro Focus	Progress	PagerDuty	Radware						
	Data Storage	NetApp	Dropbox	Iron Mountain	Pure Storage	Nutanix	Box	CommVault				
	IT Security	Cisco	VeriSign	Fortinet	Palo Alto	Check Point	CrowdStrike	Cloudflare	Trend Micro	Proofpoint	Qualys	
	IT Security (cont'd)	CyberArk	FireEye	Mimecast	Rapid7	Varonis	Ping	SailPoint	SecureWorks	Tufin	Cheetah Mobile	
	IT Security (cont'd)	Symantec										

Appendix: Software Sector Public Company Metrics¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
SOFTWARE BELLWETHERS															Software Bellwethers
Microsoft Corporation	MSFT	\$1,152,466	\$1,199,550	82.7%	33.7%	139.5%	13.3%	11.0%	45.6%	8.6x	7.7x	18.8x	17.0x	27.1x	
Alphabet Inc.	GOOG.L	695,177	798,885	75.9%	(1.3%)	37.1%	18.3%	11.0%	29.7%	4.3x	3.9x	14.4x	11.3x	23.3x	Communication
Cisco Systems, Inc.	CSCO	156,718	166,709	67.5%	(27.2%)	16.3%	1.4%	(2.3%)	31.4%	3.0x	3.1x	9.7x	8.3x	15.1x	
Adobe Inc.	ADBE	153,868	153,328	82.3%	19.4%	144.6%	22.1%	15.5%	35.0%	13.2x	11.4x	37.7x	24.6x	47.4x	Enterprise
Oracle Corporation	ORCL	180,767	152,413	79.9%	(10.0%)	8.3%	1.0%	0.0%	41.2%	4.5x	4.5x	11.0x	9.3x	14.2x	
SAP SE	SAP	146,037	134,524	79.3%	(0.2%)	11.8%	7.3%	4.9%	25.7%	4.7x	4.5x	18.5x	12.4x	28.8x	HCM
salesforce.com, inc.	CRM	127,168	128,862	73.6%	(9.1%)	74.5%	28.7%	22.2%	13.3%	7.4x	6.1x	55.8x	20.9x	NM	
IBM Corporation	IBM	157,985	98,551	69.9%	(21.4%)	(36.3%)	(2.8%)	(3.3%)	20.0%	2.1x	2.1x	10.3x	10.3x	10.9x	Marketing
Hewlett Packard Enterprise Co.	HPE	24,414	12,510	55.2%	(37.1%)	(59.0%)	(7.2%)	(3.5%)	18.1%	0.9x	0.9x	4.7x	4.9x	10.4x	
Median		\$156,718	\$152,413	75.9%	(9.1%)	16.3%	7.3%	4.9%	29.7%	4.5x	4.5x	14.4x	11.3x	19.2x	PLM & Engineering
COMMUNICATION SOFTWARE															
Zoom Video Communications, Inc.	ZM	\$39,985	\$40,768	88.6%	NA	NA	88.4%	48.0%	4.7%	64.2x	43.4x	NM	NM	NM	SCM & Logistics
Slack Technologies, Inc.	WORK	14,418	14,945	63.9%	NA	NA	57.4%	35.6%	NM	22.9x	16.9x	NM	NM	NM	
Twilio, Inc.	TWLO	11,290	12,503	59.3%	(30.7%)	210.0%	74.5%	28.6%	NM	10.0x	7.7x	NM	148.5x	NM	Energy
NICE Systems Ltd.	TASE:NICE	9,320	9,173	83.4%	17.4%	115.1%	9.0%	7.3%	26.2%	5.9x	5.5x	22.6x	17.0x	49.3x	
Nuance Communications, Inc.	NUAN	6,031	4,747	71.2%	(0.9%)	(3.1%)	0.4%	(18.4%)	20.3%	3.3x	4.1x	16.3x	16.5x	19.5x	Financial
MobileIron, Inc.	MOBL	361	439	48.8%	(30.5%)	(12.6%)	6.2%	(2.5%)	NM	1.8x	1.8x	NM	NM	NM	
Synchronoss Technologies, Inc.	SNCR	369	126	33.7%	(49.8%)	(87.5%)	(5.2%)	6.7%	NM	1.2x	1.1x	NM	12.9x	NM	HCIT
Median		\$9,320	\$9,173	63.9%	(30.5%)	(3.1%)	9.0%	7.3%	20.3%	5.9x	5.5x	19.4x	16.8x	34.4x	
ENTERPRISE SOFTWARE															
Adobe Inc.	ADBE	\$153,868	\$153,328	82.3%	19.4%	144.6%	22.1%	15.5%	35.0%	13.2x	11.4x	37.7x	24.6x	47.4x	EdTech / Public Sector
Oracle Corporation	ORCL	180,767	152,413	79.9%	(10.0%)	8.3%	1.0%	0.0%	41.2%	4.5x	4.5x	11.0x	9.3x	14.2x	
SAP SE	SAP	146,037	134,524	79.3%	(0.2%)	11.8%	7.3%	4.9%	25.7%	4.7x	4.5x	18.5x	12.4x	28.8x	Large-Cap SaaS
IBM Corporation	IBM	157,985	98,551	69.9%	(21.4%)	(36.3%)	(2.8%)	(3.3%)	20.0%	2.1x	2.1x	10.3x	10.3x	10.9x	
Intuit Inc.	INTU	58,401	59,913	74.9%	(12.0%)	98.3%	13.2%	8.8%	29.7%	8.2x	7.5x	27.6x	21.6x	36.7x	Small-Cap SaaS
Automatic Data Processing, Inc.	ADP	59,974	59,012	75.0%	(14.4%)	33.5%	5.2%	4.8%	25.2%	4.1x	3.9x	16.4x	14.9x	24.0x	
Amadeus IT Group	BME:AMS	23,771	20,462	54.8%	(39.5%)	(9.2%)	10.6%	(12.2%)	40.1%	3.8x	4.3x	9.5x	12.1x	16.4x	Data & Analytics
Constellation Software Inc.	TSX:CSU	19,505	19,122	83.9%	12.9%	95.7%	14.1%	17.8%	18.7%	5.6x	4.7x	29.8x	17.6x	57.4x	
Open Text Corporation	OTEX	12,551	9,426	73.0%	(9.1%)	2.7%	3.2%	14.8%	31.3%	4.3x	3.7x	13.7x	10.1x	28.9x	IT Operations
Sage Group plc	LSE:SGE	8,524	8,034	71.6%	(15.6%)	(6.1%)	(1.1%)	1.3%	24.9%	3.6x	3.5x	14.3x	14.2x	24.6x	
Median		\$59,187	\$59,462	75.0%	(11.0%)	10.1%	6.3%	4.9%	27.7%	4.4x	4.4x	15.4x	13.3x	26.7x	Data Storage
															IT Security

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
HUMAN CAPITAL MANAGEMENT SOFTWARE															Software Bellwethers
Automatic Data Processing, Inc.	ADP	\$59,974	\$59,012	75.0%	(14.4%)	33.5%	5.2%	4.8%	25.2%	4.1x	3.9x	16.4x	14.9x	24.0x	
Workday, Inc.	WDAY	29,836	30,211	57.4%	(32.5%)	56.4%	28.5%	19.0%	NM	8.2x	6.9x	NM	30.9x	NM	Communication
Paychex, Inc.	PAYX	22,707	22,570	69.5%	(21.5%)	6.8%	12.9%	(2.7%)	41.3%	5.5x	5.7x	13.4x	14.3x	20.4x	
Paycom Software, Inc.	PAYC	11,573	11,645	59.1%	6.8%	251.3%	30.3%	22.3%	33.8%	15.7x	12.8x	46.4x	30.5x	64.5x	Enterprise
Ceridian HCM Holding, Inc.	CDAY	7,578	7,143	63.3%	(2.4%)	NA	11.3%	8.0%	14.7%	9.2x	8.5x	62.4x	41.8x	90.8x	
Paylocity Holding Corp.	PCTY	4,674	4,735	58.6%	(1.0%)	128.6%	24.2%	17.4%	14.7%	9.0x	7.7x	61.4x	27.1x	82.1x	
Cornerstone OnDemand, Inc.	CSOD	1,896	1,946	49.3%	(42.0%)	(18.4%)	7.2%	7.8%	4.3%	3.3x	3.1x	76.1x	12.3x	NM	HCM
Benefitfocus, Inc.	BNFT	445	292	18.8%	(82.0%)	(68.1%)	14.3%	5.9%	NM	1.5x	1.4x	NM	18.5x	NM	
Median		\$9,575	\$9,394	58.8%	(18.0%)	33.5%	13.6%	7.9%	20.0%	6.9x	6.3x	53.9x	22.8x	64.5x	Marketing
MARKETING SOFTWARE															PLM & Engineering
Adobe Inc.	ADBE	\$153,868	\$153,328	82.3%	19.4%	144.6%	22.1%	15.5%	35.0%	13.2x	11.4x	37.7x	24.6x	47.4x	
salesforce.com, inc.	CRM	127,168	128,862	73.6%	(9.1%)	74.5%	28.7%	22.2%	13.3%	7.4x	6.1x	55.8x	20.9x	NM	
HubSpot, Inc.	HUBS	5,412	5,766	64.0%	(19.9%)	120.0%	31.6%	23.0%	NM	8.0x	6.5x	NM	61.0x	NM	SCM & Logistics
Acxiom Holdings, Inc.	ACXM	1,471	2,218	NA	NA	NA	32.0%	26.4%	NM	4.2x	3.3x	NM	NM	NM	
Criteo SA	CRTO	272	492	34.6%	(60.3%)	(84.1%)	(1.7%)	(64.9%)	10.9%	0.1x	0.3x	1.1x	1.2x	5.4x	Energy
Channeladvisor Corporation	ECOM	169	205	57.6%	(40.4%)	(34.9%)	(1.0%)	1.0%	8.2%	1.3x	1.3x	15.9x	8.3x	58.9x	
Median		\$3,442	\$3,992	64.0%	(19.9%)	74.5%	25.4%	18.8%	12.1%	5.8x	4.7x	26.8x	20.9x	47.4x	Financial
PLM & ENGINEERING SOFTWARE															HCIT
Dassault Systemes SA	ENXTPA:DSY	\$41,553	\$38,575	82.2%	1.7%	66.4%	13.5%	15.1%	24.5%	9.0x	7.8x	36.8x	24.8x	61.9x	
Autodesk, Inc.	ADSK	34,968	34,267	73.8%	0.2%	80.5%	27.4%	19.3%	14.3%	10.7x	9.0x	74.8x	27.1x	159.8x	
ANSYS, Inc.	ANSS	19,709	19,973	77.7%	27.2%	117.5%	17.2%	9.5%	38.4%	13.0x	11.9x	33.9x	27.3x	44.3x	EdTech / Public Sector
Synopsys, Inc.	SNPS	19,512	19,348	77.2%	11.8%	78.6%	6.4%	11.2%	19.7%	5.8x	5.2x	29.4x	16.5x	40.1x	
Cadence Design Systems, Inc.	CDNS	18,293	18,546	82.1%	4.0%	110.3%	8.2%	7.5%	26.9%	7.7x	7.2x	28.6x	19.9x	18.7x	Large-Cap SaaS
Hexagon AB	OM:HEXA B	17,831	15,687	72.4%	(12.6%)	17.8%	1.8%	(1.9%)	28.8%	4.1x	4.1x	14.1x	12.2x	19.9x	
Trimble Inc.	TRMB	9,761	7,963	68.2%	(21.2%)	(0.6%)	5.0%	(2.4%)	19.3%	3.0x	3.1x	15.5x	13.4x	15.5x	Small-Cap SaaS
PTC Inc.	PTC	8,153	7,069	59.7%	(33.6%)	16.5%	0.6%	17.9%	13.0%	6.4x	5.4x	49.1x	17.4x	NM	
Nemetschek SE	XTRA:NEM	5,800	5,747	65.6%	(10.6%)	141.6%	18.3%	11.3%	23.4%	9.3x	8.3x	39.6x	28.4x	40.3x	Data & Analytics
Altair Engineering Inc.	ALTR	1,907	1,922	61.2%	(28.0%)	NA	15.8%	6.0%	6.5%	4.2x	3.9x	64.2x	37.5x	NM	
Median		\$18,062	\$17,117	73.1%	(5.2%)	78.6%	10.9%	10.3%	21.5%	7.0x	6.3x	35.3x	22.3x	40.2x	IT Operations
															Data Storage
															IT Security

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
SUPPLY CHAIN AND LOGISTICS SOFTWARE															Software Bellwethers
Coupa Software, Inc.	COUP	\$9,074	\$9,058	78.5%	53.6%	450.1%	49.7%	25.5%	NM	23.3x	18.5x	NM	174.9x	NM	
Trimble Inc.	TRMB	9,761	7,963	68.2%	(21.2%)	(0.6%)	5.0%	(2.4%)	19.3%	3.0x	3.1x	15.5x	13.4x	15.5x	Communication
Wisetech Global Ltd.	ASX:WTC	3,209	3,326	44.1%	(26.0%)	203.7%	39.0%	2.9%	26.6%	11.5x	11.2x	43.2x	37.4x	52.1x	
Manhattan Associates, Inc.	MANH	3,094	3,165	55.1%	(9.6%)	(4.3%)	8.1%	4.5%	19.3%	5.0x	4.7x	25.7x	21.7x	36.2x	Enterprise
Descartes Systems Group Inc.	TSX:DSG	2,845	2,874	77.0%	(0.3%)	58.9%	18.4%	9.9%	36.1%	8.7x	7.9x	24.2x	20.7x	77.7x	
Kinaxis, Inc.	TSX:KXS	1,842	2,029	91.2%	39.7%	46.8%	27.1%	11.6%	21.2%	9.6x	8.6x	45.4x	38.8x	87.0x	HCM
SPS Commerce, Inc.	SPSC	1,439	1,629	74.7%	(12.3%)	59.0%	12.4%	9.9%	19.6%	5.2x	4.7x	26.2x	17.3x	48.3x	
American Software, Inc.	AMSWA	363	457	NA	NA	NA	0.6%	3.9%	7.2%	3.2x	3.1x	45.1x	24.3x	56.7x	
Median		\$2,969	\$3,020	74.7%	(9.6%)	58.9%	15.4%	7.2%	19.6%	6.9x	6.3x	26.2x	23.0x	52.1x	Marketing
ENERGY SOFTWARE															PLM & Engineering
Trimble Inc.	TRMB	\$9,761	\$7,963	68.2%	(21.2%)	(0.6%)	5.0%	(2.4%)	19.3%	3.0x	3.1x	15.5x	13.4x	15.5x	
AVEVA Group plc	LSE:AVV	7,025	7,011	65.3%	8.3%	NA	27.5%	5.5%	19.4%	6.9x	6.6x	35.8x	22.6x	99.0x	
Aspen Technology, Inc.	AZPN	6,757	6,456	66.5%	(8.8%)	61.4%	11.3%	4.1%	46.3%	11.2x	10.8x	24.2x	21.0x	25.8x	SCM & Logistics
Itron, Inc.	ITRI	3,135	2,242	63.2%	19.7%	(8.0%)	5.3%	1.3%	11.0%	1.3x	1.2x	11.3x	10.1x	45.8x	
PSI Aktiengesellschaft	XTRA:PSAN	288	305	74.4%	4.7%	38.9%	10.8%	2.0%	9.5%	1.1x	1.1x	12.1x	8.6x	19.0x	Energy
Median		\$6,757	\$6,456	66.5%	4.7%	19.2%	10.8%	2.0%	19.3%	3.0x	3.1x	15.5x	13.4x	25.8x	Financial
FINANCIAL SOFTWARE															Financial
Fiserv, Inc.	FISV	\$88,135	\$64,508	76.0%	7.6%	64.8%	74.9%	57.5%	34.7%	8.7x	5.5x	24.9x	15.0x	72.2x	
MSCI Inc.	MSCI	26,318	24,566	86.1%	45.3%	197.3%	8.6%	9.8%	52.7%	16.9x	15.4x	32.1x	27.8x	43.6x	HCM
Square, Inc.	SQ	22,333	22,798	60.0%	(30.1%)	203.1%	42.9%	10.0%	1.8%	4.7x	4.3x	NM	56.9x	60.7x	
Jack Henry & Associates, Inc.	JKHY	11,908	11,910	88.7%	11.9%	66.7%	6.5%	7.2%	27.7%	7.3x	6.8x	26.4x	21.1x	42.3x	EdTech / Public Sector
SS&C Technologies Holdings, Inc.	SSNC	18,613	11,204	64.7%	(31.2%)	23.8%	35.4%	2.6%	36.4%	4.0x	3.9x	11.0x	9.8x	25.5x	
Black Knight Financial Services, Inc.	BKFS	10,169	8,593	NA	NA	NA	5.7%	2.1%	33.7%	8.6x	8.5x	25.6x	16.9x	79.0x	Large-Cap SaaS
BlackLine, Inc.	BL	2,763	2,966	70.7%	13.6%	76.8%	26.9%	19.9%	NM	9.6x	8.0x	NM	74.0x	NM	
Q2 Holdings, Inc.	QTWO	3,197	2,860	62.9%	(14.7%)	69.5%	30.9%	30.1%	NM	10.1x	7.8x	NM	182.3x	NM	Small-Cap SaaS
Envestnet, Inc.	ENV	3,429	2,845	61.3%	(17.8%)	66.5%	10.8%	11.4%	9.5%	3.8x	3.4x	39.9x	15.9x	NM	
Oracle Financial Services Software Ltd.	BSE:532466	1,768	2,318	55.7%	(40.0%)	(46.7%)	(2.3%)	0.2%	44.7%	2.6x	2.6x	5.9x	5.6x	10.9x	Data & Analytics
Median		\$11,039	\$9,898	64.7%	(14.7%)	66.7%	18.8%	9.9%	34.2%	8.0x	6.2x	25.6x	19.0x	43.6x	IT Operations
															Data Storage
															IT Security

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
HEALTHCARE IT															Software Bellwethers
Veeva Systems Inc	VEEV	\$22,307	\$23,339	88.4%	23.3%	204.9%	28.1%	25.9%	27.8%	20.2x	16.0x	72.6x	43.4x	77.5x	
Cerner Corporation	CERN	19,812	19,164	77.9%	10.1%	7.0%	6.1%	3.1%	20.2%	3.5x	3.4x	17.3x	10.7x	36.2x	Communication
Change Healthcare, Inc.	CHNG	3,031	3,011	56.9%	NA	NA	NM	NM	NA	NM	0.9x	NM	2.9x	NM	
Inovalon Holdings, Inc.	INOV	3,496	2,583	72.5%	34.0%	32.2%	21.7%	9.4%	27.7%	5.4x	5.0x	19.7x	14.9x	NM	Enterprise
Premier, Inc.	PINC	2,335	2,325	81.5%	(5.1%)	2.8%	26.1%	3.2%	43.9%	1.9x	1.8x	4.3x	4.0x	21.9x	
HMS Holdings Corp.	HMSY	2,349	2,226	62.1%	(14.7%)	24.3%	4.7%	12.6%	22.5%	3.8x	3.3x	16.7x	12.6x	25.5x	HCM
Allscripts Healthcare Solutions, Inc.	MDRX	2,050	1,145	58.6%	(26.2%)	(44.5%)	1.2%	0.3%	5.5%	1.2x	1.2x	21.2x	6.6x	NM	
Model N, Inc.	MODN	735	740	62.0%	26.6%	112.5%	(4.0%)	9.0%	NM	5.1x	4.7x	NM	54.6x	NM	Marketing
NextGen Healthcare, Inc.	QSII	746	686	NA	NA	NA	1.6%	3.4%	7.1%	1.4x	1.3x	19.6x	8.1x	43.8x	
Evolent Health Inc.	EVH	733	460	36.7%	(56.8%)	(75.7%)	35.0%	13.6%	NM	0.9x	0.8x	NM	25.9x	NM	
Median		\$2,342	\$2,276	62.1%	2.5%	15.7%	6.1%	9.0%	22.5%	3.5x	2.6x	19.6x	11.7x	36.2x	PLM & Engineering
EDTECH / PUBLIC SECTOR SOFTWARE															SCM & Logistics
Constellation Software Inc.	TSX:CSU	\$19,505	\$19,122	83.9%	12.9%	95.7%	14.1%	17.8%	18.7%	5.6x	4.7x	29.8x	17.6x	57.4x	
Tyler Technologies, Inc.	TYL	11,434	11,683	87.0%	45.1%	91.9%	16.2%	10.4%	18.7%	10.5x	9.5x	56.3x	34.4x	79.7x	
Blackbaud, Inc.	BLKB	3,209	2,657	57.1%	(30.3%)	(27.5%)	6.1%	3.8%	11.4%	3.6x	3.4x	31.3x	18.3x	NM	Energy
NIC Inc.	EGOV	1,357	1,560	94.3%	34.6%	13.9%	2.7%	8.9%	19.6%	3.8x	3.5x	19.5x	14.7x	30.9x	
2U, Inc.	TWOU	1,500	1,350	28.6%	(70.0%)	(46.5%)	39.6%	26.7%	NM	2.6x	2.1x	NM	NM	NM	Financial
K12 Inc.	LRN	577	740	50.4%	(44.7%)	(1.5%)	4.7%	6.2%	5.6%	0.6x	0.5x	10.0x	4.2x	22.7x	
Median		\$2,355	\$2,108	70.5%	(8.7%)	6.2%	10.1%	9.7%	18.7%	3.7x	3.5x	29.8x	17.6x	44.2x	HCM
EdTech / Public Sector															EdTech / Public Sector
Large-Cap SaaS															Large-Cap SaaS
Small-Cap SaaS															Small-Cap SaaS
Data & Analytics															Data & Analytics
IT Operations															IT Operations
Data Storage															Data Storage
IT Security															IT Security

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
LARGE-CAP SAAS (Market Cap > \$3Bn)															Software Bellwethers
salesforce.com, inc.	CRM	\$127,168	\$128,862	73.6%	(9.1%)	74.5%	28.7%	22.2%	13.3%	7.4x	6.1x	55.8x	20.9x	NM	
ServiceNow, Inc.	NOW	53,833	54,393	79.0%	16.3%	227.6%	32.6%	27.9%	8.5%	15.6x	12.2x	183.0x	42.8x	86.8x	Communication
Zoom Video Communications, Inc.	ZM	39,985	40,768	88.6%	NA	NA	88.4%	48.0%	4.7%	64.2x	43.4x	NM	NM	NM	
Atlassian Corp. Plc	TEAM	32,907	33,687	87.9%	22.1%	358.3%	36.5%	25.3%	0.8%	23.2x	18.5x	NM	72.3x	NM	Enterprise
Workday, Inc.	WDAY	29,836	30,211	57.4%	(32.5%)	56.4%	28.5%	19.0%	NM	8.2x	6.9x	NM	30.9x	NM	
Veeva Systems Inc	VEEV	22,307	23,339	88.4%	23.3%	204.9%	28.1%	25.9%	27.8%	20.2x	16.0x	72.6x	43.4x	77.5x	
RingCentral, Inc.	RNG	18,544	18,458	82.6%	96.6%	648.8%	34.0%	24.2%	0.5%	20.5x	16.5x	NM	128.0x	NM	HCM
DocuSign, Inc.	DOCU	16,759	16,767	93.9%	78.2%	NA	38.9%	29.4%	NM	17.2x	13.3x	NM	100.5x	NM	
Check Point Software Technologies Ltd.	CHKP	13,049	14,629	75.7%	(20.5%)	(2.1%)	4.1%	1.9%	45.1%	6.5x	6.4x	14.5x	13.3x	17.7x	Marketing
CrowdStrike Holdings, Inc.	CRWD	10,960	11,872	54.7%	NA	NA	92.7%	50.6%	NM	22.8x	15.1x	NM	NM	NM	
Paycom Software, Inc.	PAYC	11,573	11,645	59.1%	6.8%	251.3%	30.3%	22.3%	33.8%	15.7x	12.8x	46.4x	30.5x	64.5x	PLM & Engineering
Coupa Software, Inc.	COUP	9,074	9,058	78.5%	53.6%	450.1%	49.7%	25.5%	NM	23.3x	18.5x	NM	174.9x	NM	
Zendesk, Inc.	ZEN	7,361	7,256	67.5%	(24.7%)	128.3%	36.4%	28.0%	NM	9.0x	7.0x	NM	83.3x	NM	SCM & Logistics
Dynatrace, Inc.	DT	7,046	6,694	64.3%	NA	NA	28.5%	22.0%	NM	13.8x	11.3x	NM	39.8x	NM	
Guidewire Software, Inc.	GWRE	5,945	6,574	63.9%	(18.4%)	40.8%	(4.1%)	4.8%	0.6%	8.5x	8.1x	NM	63.1x	NM	Energy
Xero Limited	ASX:XRO	5,879	5,890	75.3%	39.6%	275.2%	26.0%	22.2%	7.0%	14.8x	12.1x	NM	56.0x	NM	
Proofpoint, Inc.	PFPT	5,763	5,848	76.8%	(15.5%)	38.0%	23.9%	19.1%	NM	6.5x	5.4x	NM	40.8x	NM	Financial
Avalara Inc	AVLR	5,419	5,820	76.9%	33.7%	NA	40.5%	22.3%	NM	14.2x	11.6x	NM	NM	NM	
HubSpot, Inc.	HUBS	5,412	5,766	64.0%	(19.9%)	120.0%	31.6%	23.0%	NM	8.0x	6.5x	NM	61.0x	NM	
Smartsheet, Inc.	SMAR	4,431	4,933	74.4%	1.8%	NA	52.4%	37.1%	NM	16.4x	11.9x	NM	NM	NM	HCIT
RealPage, Inc.	RP	5,977	4,895	80.3%	(12.8%)	51.7%	13.6%	18.5%	17.6%	6.0x	5.1x	34.4x	18.6x	84.1x	
Five9, Inc.	FIVN	4,612	4,709	93.6%	44.7%	364.5%	27.3%	16.2%	5.3%	14.1x	12.1x	NM	66.5x	NM	EdTech / Public Sector
Anaplan, Inc.	PLAN	3,885	4,140	47.5%	(23.1%)	NA	44.6%	31.9%	NM	11.2x	8.5x	NM	NM	NM	
AppFolio Inc	APPF	3,836	3,790	74.9%	39.7%	307.9%	34.7%	24.8%	5.9%	15.0x	12.0x	NM	75.1x	104.5x	Large-Cap SaaS
Qualys, Inc.	QLYS	3,154	3,401	90.6%	5.1%	129.5%	15.3%	13.0%	31.7%	9.8x	8.7x	30.9x	20.2x	49.0x	
CyberArk Software Ltd.	CYBR	2,707	3,262	57.5%	(28.1%)	68.2%	26.4%	15.7%	16.8%	6.2x	5.4x	37.1x	23.4x	51.7x	Small-Cap SaaS
Median		\$7,203	\$6,975	75.5%	5.1%	129.5%	30.9%	22.7%	8.5%	14.1x	11.8x	41.8x	43.4x	71.0x	
															Data & Analytics
															IT Operations
															Data Storage
															IT Security

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
SMALL-CAP SAAS (Market Cap < \$3Bn)															Software Bellwethers
Q2 Holdings, Inc.	QTWO	\$3,197	\$2,860	62.9%	(14.7%)	69.5%	30.9%	30.1%	NM	10.1x	7.8x	NM	182.3x	NM	Software Bellwethers
Medallia, Inc.	MDLA	2,348	2,683	44.8%	NA	NA	28.3%	17.9%	NM	5.8x	5.0x	NM	116.8x	NM	Communication
Mimecast Limited	MIME	2,258	2,207	64.7%	(25.4%)	57.7%	25.9%	20.1%	8.0%	5.6x	4.6x	69.6x	24.3x	NM	Enterprise
Rapid7 Inc.	RPD	2,201	2,176	65.6%	(14.4%)	189.3%	33.9%	21.4%	NM	6.7x	5.5x	NM	110.3x	NM	Enterprise
Box, Inc.	BOX	2,363	2,134	66.3%	(27.3%)	(13.9%)	14.4%	10.2%	NM	3.4x	3.1x	NM	20.9x	NM	Enterprise
Cornerstone OnDemand, Inc.	CSOD	1,896	1,946	49.3%	(42.0%)	(18.4%)	7.2%	7.8%	4.3%	3.3x	3.1x	76.1x	12.3x	NM	HCM
Alarm.com Holdings, Inc.	ALRM	1,896	1,897	54.4%	(40.0%)	26.6%	19.5%	9.7%	16.9%	3.8x	3.4x	22.3x	17.5x	35.4x	HCM
SPS Commerce, Inc.	SPSC	1,439	1,629	74.7%	(12.3%)	59.0%	12.4%	9.9%	19.6%	5.2x	4.7x	26.2x	17.3x	48.3x	Marketing
Workiva, Inc.	WK	1,352	1,521	50.4%	(36.2%)	106.6%	21.9%	14.4%	NM	4.5x	4.0x	NM	NM	NM	Marketing
LivePerson, Inc.	LPSN	1,483	1,461	50.3%	(21.6%)	232.1%	16.7%	19.2%	NM	5.1x	4.3x	NM	NM	NM	Marketing
PagerDuty, Inc.	PD	993	1,345	28.9%	NA	NA	41.2%	24.9%	NM	6.0x	4.8x	NM	NM	NM	PLM & Engineering
Yext, Inc.	YEXT	1,048	1,180	45.0%	(53.4%)	NA	30.9%	22.3%	NM	3.5x	2.9x	NM	NM	NM	PLM & Engineering
Model N, Inc.	MODN	735	740	62.0%	26.6%	112.5%	(4.0%)	9.0%	NM	5.1x	4.7x	NM	54.6x	NM	SCM & Logistics
Talend SA	TLND	685	702	42.2%	(55.6%)	(24.7%)	20.4%	11.5%	NM	2.8x	2.5x	NM	NM	NM	SCM & Logistics
Upland Software, Inc.	UPLD	1,035	677	48.9%	(36.7%)	68.8%	48.5%	21.6%	22.4%	4.6x	3.8x	20.7x	10.2x	NM	Energy
Eventbrite, Inc.	EB	235	630	29.2%	(61.9%)	NA	12.1%	(19.2%)	NM	0.7x	0.9x	NM	NM	NM	Energy
Ebix, Inc.	EBIX	1,198	463	28.1%	(69.3%)	(75.2%)	16.6%	13.7%	26.5%	2.1x	1.8x	7.8x	6.3x	4.8x	Financial
Benefitfocus, Inc.	BNFT	445	292	18.8%	(82.0%)	(68.1%)	14.3%	5.9%	NM	1.5x	1.4x	NM	18.5x	NM	Financial
Domo, Inc.	DOMO	279	277	24.1%	(75.4%)	NA	21.7%	9.9%	NM	1.6x	1.5x	NM	NM	NM	Financial
Castlight Health, Inc.	CSLT	69	108	18.1%	(80.7%)	(80.2%)	(8.4%)	(7.5%)	NM	0.5x	0.5x	NM	NM	NM	HClT
Median		\$1,896	\$1,946	54.4%	(25.4%)	59.0%	21.9%	17.9%	12.4%	5.2x	4.6x	47.9x	22.6x	41.9x	EdTech / Public Sector
															Large-Cap SaaS
															Small-Cap SaaS
															Data & Analytics
															IT Operations
															Data Storage
															IT Security

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise Value (\$mm)	Market Cap (\$mm)	% of 52 Week High	1-Year Stock Performance	3-Year Stock Performance	Revenue Growth		LTM EBITDA Margin	Enterprise Value /				Price / Earnings	
							LTM	NTM		LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA		
DATA & ANALYTICS															
Verisk Analytics Inc	VRSK	\$25,941	\$22,730	81.2%	4.8%	71.8%	8.9%	8.3%	40.5%	10.0x	9.2x	24.6x	19.6x	50.5x	Software Bellwethers
Splunk Inc.	SPLK	20,262	20,023	71.6%	1.3%	102.6%	30.8%	9.4%	NM	8.6x	7.9x	NM	188.3x	NM	Communication
Datadog, Inc.	DDOG	9,975	10,689	71.8%	NA	NA	83.2%	48.2%	NM	27.5x	18.6x	NM	NM	NM	Enterprise
Pegasystems Inc.	PEGA	5,674	5,674	69.1%	9.6%	62.4%	2.2%	19.6%	NM	6.2x	5.2x	NM	103.3x	NM	Enterprise
Verint Systems Inc.	VRNT	3,345	2,757	67.3%	(28.2%)	(0.9%)	6.0%	11.7%	12.2%	2.6x	2.3x	21.0x	9.1x	96.1x	Enterprise
Inovalon Holdings, Inc.	INOV	3,496	2,583	72.5%	34.0%	32.2%	21.7%	9.4%	27.7%	5.4x	5.0x	19.7x	14.9x	NM	HCM
Teradata Corporation	TDC	2,457	2,265	44.4%	(53.1%)	(34.2%)	(12.2%)	(1.5%)	6.5%	1.3x	1.3x	19.8x	7.6x	NM	HCM
PROS Holdings, Inc.	PRO	1,177	1,343	41.2%	(26.5%)	28.3%	27.1%	14.3%	NM	4.7x	4.1x	NM	NM	NM	Marketing
MicroStrategy Incorporated	MSTR	741	1,193	71.6%	(18.1%)	(37.1%)	(2.3%)	8.5%	3.2%	1.5x	1.4x	47.2x	10.2x	34.7x	Marketing
Talend SA	TLND	685	702	42.2%	(55.6%)	(24.7%)	20.4%	11.5%	NM	2.8x	2.5x	NM	NM	NM	Marketing
Median		\$3,420	\$2,670	70.3%	(18.1%)	28.3%	14.6%	10.4%	12.2%	5.1x	4.5x	21.0x	14.9x	50.5x	PLM & Engineering
IT OPERATIONS MANAGEMENT															
ServiceNow, Inc.	NOW	\$53,833	\$54,393	79.0%	16.3%	227.6%	32.6%	27.9%	8.5%	15.6x	12.2x	183.0x	42.8x	86.8x	SCM & Logistics
VMware, Inc.	VMW	54,368	50,621	58.6%	(32.9%)	31.4%	12.5%	8.6%	18.9%	5.0x	4.6x	26.7x	13.3x	7.9x	SCM & Logistics
Citrix Systems, Inc.	CTXS	17,730	17,320	96.7%	42.0%	69.7%	5.2%	(1.6%)	24.6%	5.6x	5.7x	22.9x	17.4x	23.0x	Energy
Arista Networks, Inc.	ANET	12,866	15,491	61.1%	(35.6%)	53.1%	12.1%	(4.0%)	34.8%	5.3x	5.6x	15.3x	15.5x	18.0x	Energy
Dynatrace, Inc.	DT	7,046	6,694	64.3%	NA	NA	28.5%	22.0%	NM	13.8x	11.3x	NM	39.8x	NM	Financial
F5 Networks, Inc.	FFIV	5,706	6,484	63.1%	(32.1%)	(25.2%)	3.9%	5.4%	25.4%	2.5x	2.4x	9.9x	6.9x	16.4x	Financial
SolarWinds Corp.	SWI	6,726	4,879	72.3%	(19.7%)	NA	11.9%	10.0%	23.5%	7.2x	6.6x	30.7x	14.2x	NM	HcIT
New Relic, Inc.	NEWR	2,496	2,740	42.5%	(53.2%)	24.7%	28.4%	16.3%	NM	4.4x	3.8x	NM	31.6x	NM	HcIT
Software AG	XTRA:SOW	1,979	2,219	77.9%	(9.5%)	NA	(0.3%)	(3.0%)	25.6%	2.0x	2.1x	7.9x	10.0x	13.9x	EdTech / Public Sector
Fastly, Inc.	FSLY	1,719	1,820	53.8%	NA	NA	38.7%	30.0%	NM	8.6x	6.6x	NM	NM	NM	EdTech / Public Sector
NetScout Systems, Inc.	NTCT	1,933	1,748	78.1%	(15.7%)	(37.6%)	(1.4%)	2.8%	17.2%	2.2x	2.1x	12.6x	10.6x	191.7x	Large-Cap SaaS
Micro Focus International plc	LSE:MCRO	5,876	1,663	15.9%	(83.4%)	(86.5%)	4.4%	(7.7%)	30.9%	1.8x	1.9x	5.7x	5.2x	1.1x	Large-Cap SaaS
Progress Software Corporation	PRGS	1,576	1,433	61.0%	(27.9%)	10.2%	16.2%	(0.3%)	32.8%	3.6x	3.6x	11.1x	7.9x	37.6x	Small-Cap SaaS
PagerDuty, Inc.	PD	993	1,345	28.9%	NA	NA	41.2%	24.9%	NM	6.0x	4.8x	NM	NM	NM	Small-Cap SaaS
Radware Ltd.	RDWR	829	988	78.1%	(19.4%)	30.4%	7.5%	6.1%	11.9%	3.3x	3.1x	27.6x	19.3x	43.8x	Small-Cap SaaS
Median		\$5,706	\$2,740	63.1%	(23.8%)	27.6%	12.1%	6.1%	24.6%	5.0x	4.6x	15.3x	14.2x	20.5x	Data & Analytics
IT OPERATIONS															
Data Storage															
IT Security															

Appendix: Software Sector Public Company Metrics (Cont'd)¹

Company	Ticker	Enterprise	Market	% of 52	1-Year Stock	3-Year Stock	Revenue Growth		LTM EBITDA	Enterprise Value /				Price /	
		Value (\$mm)	Cap (\$mm)	Week High	Performance	Performance	LTM	NTM	Margin	LTM Rev.	NTM Rev.	LTM EBITDA	NTM EBITDA	Earnings	
DATA STORAGE															Software Bellwethers
NetApp, Inc.	NTAP	\$8,193	\$9,221	53.2%	(39.9%)	(0.4%)	(9.6%)	(1.9%)	20.0%	1.5x	1.5x	7.3x	6.1x	9.0x	
Dropbox	DBX	7,429	7,581	69.1%	(17.0%)	NA	19.4%	13.5%	5.7%	4.5x	3.9x	79.0x	14.6x	NM	Communication
Iron Mountain, Inc.	IRM	17,338	6,839	64.9%	(32.9%)	(33.3%)	0.9%	2.7%	33.1%	4.1x	4.0x	12.3x	11.3x	25.6x	
Pure Storage, Inc.	PSTG	2,583	3,284	52.3%	(43.6%)	25.1%	20.9%	10.0%	NM	1.6x	1.4x	NM	20.7x	NM	Enterprise
Nutanix, Inc.	NTNX	2,892	3,076	36.1%	(58.1%)	(15.8%)	0.6%	17.2%	NM	2.3x	2.0x	NM	NM	NM	
Box, Inc.	BOX	2,363	2,134	66.3%	(27.3%)	(13.9%)	14.4%	10.2%	NM	3.4x	3.1x	NM	20.9x	NM	HCM
CommVault Systems, Inc.	CVLT	1,566	1,886	61.9%	(37.5%)	(20.3%)	(3.8%)	(0.1%)	4.8%	2.3x	2.3x	47.4x	NM	NM	
Median		\$2,892	\$3,284	61.9%	(37.5%)	(14.9%)	0.9%	10.0%	12.8%	2.3x	2.3x	29.8x	14.6x	17.3x	Marketing
IT SECURITY															PLM & Engineering
Cisco Systems, Inc.	CSCO	\$156,718	\$166,709	67.5%	(27.2%)	16.3%	1.4%	(2.3%)	31.4%	3.0x	3.1x	9.7x	8.3x	15.1x	
VeriSign, Inc.	VRSN	21,544	20,966	81.2%	(0.8%)	106.7%	1.3%	0.2%	69.3%	17.4x	17.4x	25.1x	23.5x	26.7x	
Fortinet, Inc.	FTNT	15,434	17,453	83.0%	20.5%	163.8%	19.7%	16.8%	18.8%	7.2x	6.1x	38.0x	23.2x	53.5x	SCM & Logistics
Palo Alto Networks, Inc.	PANW	15,083	16,348	65.3%	(32.5%)	45.5%	20.3%	16.4%	1.5%	4.8x	4.2x	NM	20.0x	NM	
CheckPoint Software Ltd.	CHKP	13,049	14,629	75.7%	(20.5%)	(2.1%)	4.1%	1.9%	45.1%	6.5x	6.4x	14.5x	13.3x	17.7x	
CrowdStrike Holdings, Inc.	CRWD	10,960	11,872	54.7%	NA	NA	92.7%	50.6%	NM	22.8x	15.1x	NM	NM	NM	Energy
Cloudflare, Inc.	NET	6,477	7,106	89.3%	NA	NA	49.0%	34.5%	NM	22.6x	16.8x	NM	NM	NM	
Trend Micro Incorporated	TSE:4704	5,304	6,907	87.5%	(0.9%)	7.9%	4.0%	6.2%	32.4%	3.5x	3.3x	10.8x	10.6x	26.9x	Financial
Proofpoint, Inc.	PFPT	5,763	5,848	76.8%	(15.5%)	38.0%	23.9%	19.1%	NM	6.5x	5.4x	NM	40.8x	NM	
Qualys, Inc.	QLYS	3,154	3,401	90.6%	5.1%	129.5%	15.3%	13.0%	31.7%	9.8x	8.7x	30.9x	20.2x	49.0x	HCIT
CyberArk Software Ltd.	CYBR	2,707	3,262	57.5%	(28.1%)	68.2%	26.4%	15.7%	16.8%	6.2x	5.4x	37.1x	23.4x	51.7x	
FireEye, Inc.	FEYE	2,380	2,320	57.7%	(37.0%)	(16.1%)	7.0%	4.7%	NM	2.7x	2.6x	NM	20.5x	NM	EdTech / Public Sector
Mimecast Limited	MIME	2,258	2,207	64.7%	(25.4%)	57.7%	25.9%	20.1%	8.0%	5.6x	4.6x	69.6x	24.3x	NM	
Rapid7 Inc.	RPD	2,201	2,176	65.6%	(14.4%)	189.3%	33.9%	21.4%	NM	6.7x	5.5x	NM	110.3x	NM	Large-Cap SaaS
Varonis Systems, Inc.	VRNS	1,893	1,949	68.3%	6.8%	100.2%	(6.0%)	11.0%	NM	7.4x	6.7x	NM	NM	NM	
Ping Identity Holding Corp.	PING	1,580	1,596	67.2%	NA	NA	20.5%	9.3%	9.9%	6.5x	6.0x	65.8x	55.2x	NM	Small-Cap SaaS
SailPoint Technologies	SAIL	1,278	1,370	52.1%	(47.0%)	NA	15.9%	8.7%	3.1%	4.4x	4.1x	142.6x	199.9x	NM	
SecureWorks Corp.	SCWX	786	938	57.5%	(37.4%)	21.2%	6.6%	0.5%	NM	1.4x	1.4x	NM	95.3x	NM	Data & Analytics
Tufin Software Technologies Ltd	TUFN	218	312	28.3%	NA	NA	21.5%	9.8%	NM	2.1x	1.9x	NM	NM	NM	
Cheetah Mobile, Inc.	CMCM	(38)	291	30.8%	(67.4%)	(80.5%)	(28.9%)	(12.1%)	NM	-0.1x	-0.1x	NM	NM	NM	
Symantec Corporation	SYMC	48	23	33.3%	(65.6%)	(86.0%)	6.1%	NM	43.2%	1.1x	NM	2.5x	NM	15.0x	IT Operations
Median		\$2,707	\$3,262	65.6%	(25.4%)	41.7%	15.9%	10.4%	25.1%	6.2x	5.4x	30.9x	23.4x	26.8x	Data Storage
															IT Security

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