

SaaS Software Cloud Update – March 2018

Public Markets and M&A Activity

The Navidar SaaS Software Cloud Index advanced +0.7% in March and +12.0% so far in 2018, compared with the NASDAQ's -2.9% and +2.3%, the Russell 2000's +1.0% and -0.3%, and the S&P 500's -2.7% and -1.2%, respectively. Following is a summary of the company-specific issues related to selected stocks in our coverage universe that meaningfully out- or under-performed as well as relevant M&A activity.

Oracle (NYSE: ORCL -9.7%) – the enterprise software provider's stock weakened on the reporting of mixed results for the third quarter and concerns over its cloud performance. The company beat street estimates on EPS, reporting 83 cents compared with consensus estimates of 72 cents, but reported \$9.77B in revenue compared with \$9.78B expected by analysts, dragged down by slow cloud revenue growth. Total cloud revenues were \$1.6B for 3Q18 and the company issued guidance for fourth-quarter cloud revenue that fell below street estimates. The company forecasted 19-23% growth in cloud revenues for 4Q18, against the analyst expectations of 25-27%. Third quarter performance raised concerns over ORCL's cloud performance in comparison to its peers (Microsoft, Salesforce and Amazon Web Services), which are reporting faster growth.

Facebook (NASDAQ: FB -10.4%) – the social network giant's stock declined as it faces multiple investigations in Europe and the U.S., along with potentially profit-crimping regulations and limits to its use of data, after revelations that data harvested from Facebook may have been used to influence Britain's vote to leave the EU and the U.S. presidential election. Research firm Cambridge Analytica improperly gained access to the data of more than 50 million Facebook users and used that data to build a massive targeted marketing database based on each users' individual likes and interests. The Federal Trade Commission (FTC) has opened a nonpublic investigation into Facebook's data privacy practices, which raises the risk of civil penalties on data privacy violations and could take multiple years to resolve.

MuleSoft (NYSE: MULE +42.4%) – Salesforce announced plans to acquire the data integration provider for an enterprise value of ~\$6.6B, representing a 36% prior-close premium and an EV/revenue multiple of 22.3x. The cash-and-stock deal represents another step in Salesforce's push to widen its presence in the cloud-services space. MULE's technology for pulling data from different cloud sources will be used to power the Salesforce Integration Cloud. Together, Salesforce and MULE will accelerate customers' digital transformations, enabling them to unlock data across legacy systems, cloud apps and devices to make smarter, faster decisions and create highly differentiated, connected customer experiences.



Upland Software (NASDAQ: UPLD +20.7%) – the enterprise work management software provider reported record 4Q17 and full year 2017 results, and provided strong 1Q18 and 2018 guidance. Total revenue increased by 44% to \$27.8M in 4Q17 and by 31% to \$98.0M in 2017. Adjusted EBITDA increased by 129% to \$9.7M in 4Q17 and by 140% to \$30.3M in 2017. The company made four strategic acquisitions across verticals that added \$48.5M in annualized gross revenues, increased adjusted EBITDA margins from 22% to 35% YOY. The company added 151 new customers and expanded 227 existing customer relationships during 4Q17. Furthermore, 2018 revenue guidance is \$120.4-124.4M, up about 28% and adjusted EBITDA guidance is \$42.0-44.M, a margin of 35%.

CommerceHub (NASDAQ: CHUB +18.1%) – Private equity firms GTCR and Sycamore Partners announced plans to acquire the distributed commerce network provider for ~\$1.1B in an all cash deal, representing a 24.5% prior-close premium to Series A stock and an EV/revenue multiple of 9.5x. Under the deal, all outstanding shares of CHUB’s Series A, B, and C common stock will be acquired for \$22.75 per share in cash.

Box (NYSE: BOX –14.6%) – the cloud storage provider’s stock declined on disappointing forecast estimates provided by the company. The stock plunged at the beginning of the month on the earnings report but recovered some of those losses before falling due to a successful IPO by rival Dropbox (NASDAQ:DBX). The company reported slowing paid user growth in 4Q18, along with lower guidance for 1Q19 and 2019, fueling concerns that the company may struggle to reach profitability with increased competition. The company’s forecast revenue for 1Q19 is \$139.0-140.0M as per new accounting standards, below analysts’ estimates of \$144.3M. 2019 revenue guidance is \$602.0-608.0M and adjusted loss per share is \$0.20-0.16 per share, as per new accounting standards, lower than analysts’ estimates of \$625.7M and adjusted loss per share of \$0.20.

Twilio (NYSE: TWLO +11.8%) – the cloud-based voice, messaging and video provider’s stock gained on coverage initiation by Bank of America Merrill Lynch, a buy rating on the stock with a target price of \$45, an increase of ~18% from the current price and an expectation of achieving \$1B revenue by 2021. The company reported a strong fourth quarter with revenue growing by 40% YOY and outpacing its own guidance.

WageWorks (NYSE: WAGE –13.8%) – the consumer-directed benefits provider’s stock declined on delay in filing of financials with the SEC. The company has officially postponed its 10K filing for 2017, along with its results and call for 4Q17. It has not been able to file its 10K within the extension period provided under SEC’s rule 12B-25.

Faster Growth
(2019E growth > 20%, excluding micro-caps)

Ticker	3/31 \$Price	Mar %ch	Ticker	3/31 \$Price	Mar %ch
AMZN	1447.34	-4.3	PAYC	107.39	8.6
APPF	40.85	1.9	PCTY	51.23	9.5
AYX	34.14	-0.1	QTWO	45.55	0.0
BL	39.21	-10.9	RNG	63.50	1.4
BOX	20.55	-14.6	SAIL	20.69	-1.6
CDLX	14.63	-19.6	SHOP	124.59	-9.9
COUP	45.62	2.3	SNAP	15.87	-8.4
EVBG	36.60	14.7	TEAM	53.92	-0.7
FB	159.79	-10.4	TWLO	38.18	11.8
HDP	20.37	13.3	TWOU	84.03	1.5
HUBS	108.30	-2.5	WDAY	127.11	0.3
INST	42.15	-2.9	WIX	79.55	6.0
MB	38.90	9.1	YEXT	12.65	-0.4
MULE	43.98	42.4	ZEN	47.87	10.9
NOW	165.45	2.8	ZS	28.07	0.0
OKTA	39.85	3.3			

Slower Growth
(2019E growth < 20%, excluding micro-caps)

Ticker	3/31 \$Price	Mar %ch	Ticker	3/31 \$Price	Mar %ch
AAPL	167.78	-5.8	GOOGL	1037.14	-6.0
ALRM	37.74	4.4	GWRE	80.83	0.6
AMBR	8.90	-2.2	IBM	153.43	-1.5
APPN	25.18	-6.9	INTU	173.35	3.9
APTI	28.34	-1.9	LOGM	115.55	0.0
ASUR	12.24	-14.1	LPSN	16.35	13.1
ATHN	143.03	2.4	MODN	18.05	5.6
BCOV	6.95	1.5	MSFT	91.27	-2.7
BNFT	24.40	0.8	ORCL	45.75	-9.7
CHUB.K	22.49	18.1	PEGA	60.65	4.6
CLDR	21.58	13.3	PYPL	75.87	-4.5
CRM	116.30	0.0	RP	51.50	-1.4
CSCO	42.89	-4.2	SAP	104.83	-0.7
CSLT	3.65	2.8	SREV	3.81	4.1
CSOD	39.11	-4.6	STMP	201.05	5.2
CTXS	92.80	0.9	TWTR	29.01	-8.9
DATA	80.82	-1.0	ULTI	243.70	2.2
DBX	31.25	0.0	UPLD	28.79	20.7
EBAY	40.24	-6.1	VEEV	73.02	4.8
EGAN	7.95	2.6	VRNS	60.50	7.7
ELLI	91.94	3.7	WAGE	45.20	-13.8
ENV	57.30	4.0	WEB	18.10	0.6
FNGN	35.00	4.5	WK	23.70	4.2
GDDY	61.42	2.7			

Indexes			
(% change in Mar)			
Faster SaaS	0.3	NASDAQ	-2.9
Slower SaaS	0.8	S&P 500	-2.7
Others	0.7	Russell2000	1.0
Overall SaaS	0.7	S&P Volatility	0.6

Data source: S&P Capital IQ. 3/31/2018 Prices. 3/1-31/2018 %Change. All investing involves risk, including the risk of losing the entire investment. Prices are subject to change without prior notice.

More M&A

- Mindbody (NASDAQ: MB +9.1)** acquired Booker Software for ~\$150M. Booker operates as a leading cloud-based business management platform for salons and spas and the provider of Frederick, an automated marketing software for wellness businesses. The deal expands MB's customer base and strengthens its position in the wellness space.
- Virtusa (NASDAQ: VRTU)** acquired eTouch Systems for ~\$126M. eTouch Systems provides digital engineering, digital marketing, cloud, analytics, and data security solutions, primarily to tech companies. The deal expands VRTU's digital engineering expertise and broadens its digital service offerings.
- Nutanix (NASDAQ: NTNX)** announced plans to acquire Netsil for ~\$70M. Netsil provides application discovery and operations management enabling state-of-the-art observability in modern distributed cloud environments. NTNX earlier announced plans to acquire Minjar, the maker of Botmetric, a service that provides customers with unified cost control and enhanced visibility into their workloads running in public clouds.
- Ensono** announced plans to acquire Wipro's (NYSE:WIT) hosted data center services business for ~\$405M. The business includes eight data centers and over 900 employees within hosted data center services. The deal expands Ensono's geographic footprint and global service capabilities. WIT also signed a long-term partnership agreement to invest \$55M in Ensono.
- Clarizen**, a provider of cloud-based work collaboration and project management solutions for organizations, was acquired from Benchmark, Goldman Sachs Private Capital Investing and others by the management team of the company and K1 Investment Management, for \$110M.

Select Horizontal Companies¹

Ticker	3/31 \$Price	Mar %ch	Ticker	3/31 \$Price	Mar %ch
AAPL	167.78	-5.8	MFON	1.09	-3.5
APPN	25.18	-6.9	MRIN	6.65	-14.7
APTI	28.34	-1.9	MSFT	91.27	-2.7
ASUR	12.24	-14.1	MULE	43.98	42.4
AYX	34.14	-0.1	NOW	165.45	2.8
BCOV	6.95	1.5	OKTA	39.85	3.3
BL	39.21	-10.9	ORCL	45.75	-9.7
BNFT	24.40	0.8	PAYC	107.39	8.6
BOX	20.55	-14.6	PCTY	51.23	9.5
CCUR	4.80	-10.3	PEGA	60.65	4.6
CHUB.K	22.49	18.1	PGOW.	0.08	0.0
CLDR	21.58	13.3	PYDS	1.81	9.0
COUP	45.62	2.3	PYPL	75.87	-4.5
CRM	116.30	0.0	RNG	63.50	1.4
CSCO	42.89	-4.2	SAP	104.83	-0.7
CSOD	39.11	-4.6	SHSP	6.37	28.4
CTXS	92.80	0.9	SMSI	1.75	-18.9
DATA	80.82	-1.0	SNAP	15.87	-8.4
DBX	31.25	0.0	SPRT	2.76	0.7
EGAN	7.95	2.6	SREV	3.81	4.1
EVBG	36.60	14.7	TEAM	53.92	-0.7
FNJN	3.25	13.6	TWLO	38.18	11.8
GDDY	61.42	2.7	ULTI	243.70	2.2
GOOGL	1037.14	-6.0	UPLD	28.79	20.7
GSB	3.68	5.7	VRNS	60.50	7.7
HDP	20.37	13.3	WAGE	45.20	-13.8
HUBS	108.30	-2.5	WDAY	127.11	0.3
IBM	153.43	-1.5	WEB	18.10	0.6
INTU	173.35	3.9	WK	23.70	4.2
LOGM	115.55	0.0	YEXT	12.65	-0.4
LPSN	16.35	13.1	ZEN	47.87	10.9
LVT	0.32	-12.8	ZS	28.07	0.0

Select Vertical Companies²

Ticker	3/31 \$Price	Mar %ch	Ticker	3/31 \$Price	Mar %ch
ACTA	1.15	4.5	INST	42.15	-2.9
AKDS	0.54	-0.9	INUV	0.92	5.5
ALRM	37.74	4.4	IPAS	0.38	-6.2
AMBR	8.90	-2.2	MB	38.90	9.1
AMZN	1447.34	-4.3	MODN	18.05	5.6
APPF	40.85	1.9	QTWO	45.55	0.0
ATHN	143.03	2.4	RP	51.50	-1.4
CDLX	14.63	-19.6	RST	13.15	-3.9
COYN	0.04	44.0	SAIL	20.69	-1.6
CSLT	3.65	2.8	SCIL	0.61	-12.9
CSTI	8.35	-7.6	SHOP	124.59	-9.9
CXDO	2.80	7.3	SNCR	10.55	13.0
EBAY	40.24	-6.1	SPSC	64.07	6.7
ECOM	9.10	2.8	STMP	201.05	5.2
ELLI	91.94	3.7	SVVC	11.29	16.0
ENV	57.30	4.0	TWOU	84.03	1.5
EVOL	4.81	-11.7	TWTR	29.01	-8.9
FB	159.79	-10.4	VEEV	73.02	4.8
FNGN	35.00	4.5	WIX	79.55	6.0
GSVC	7.54	-7.1	WSTL	3.35	3.4
GWRE	80.83	0.6			

Indexes

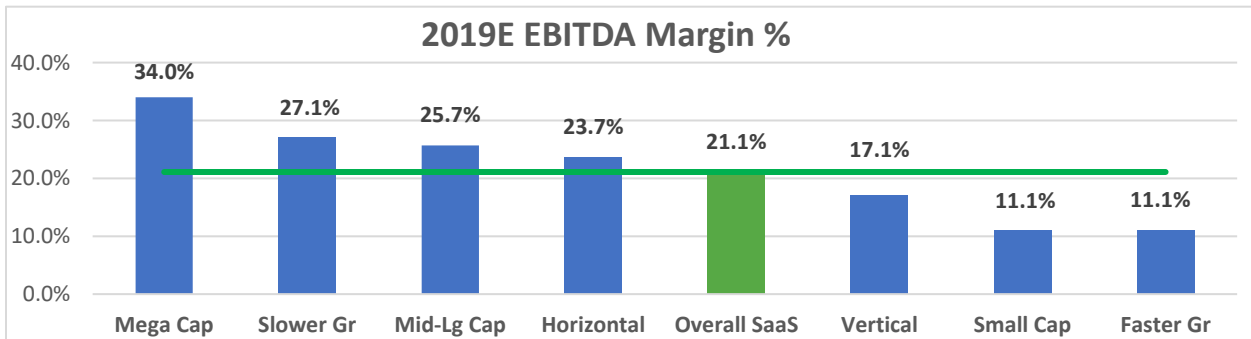
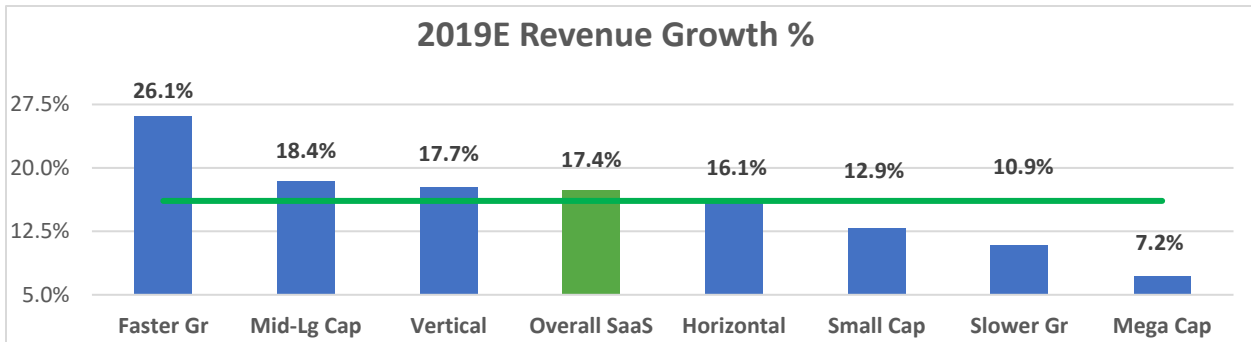
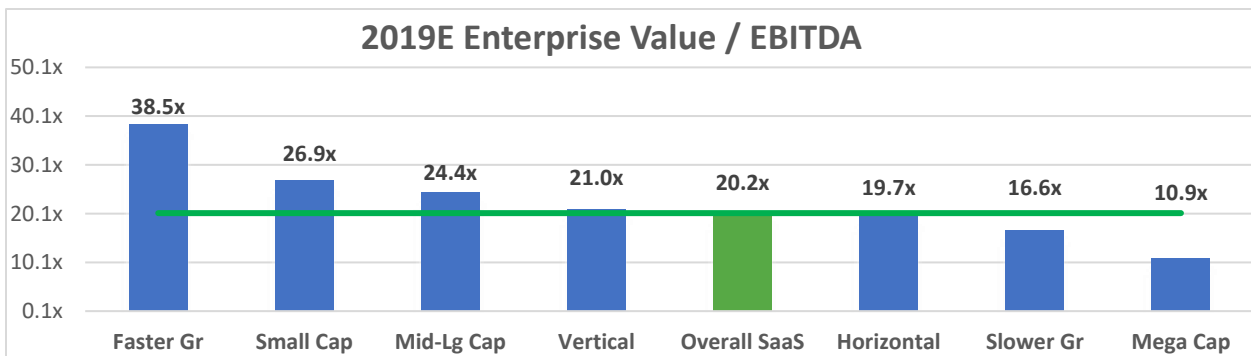
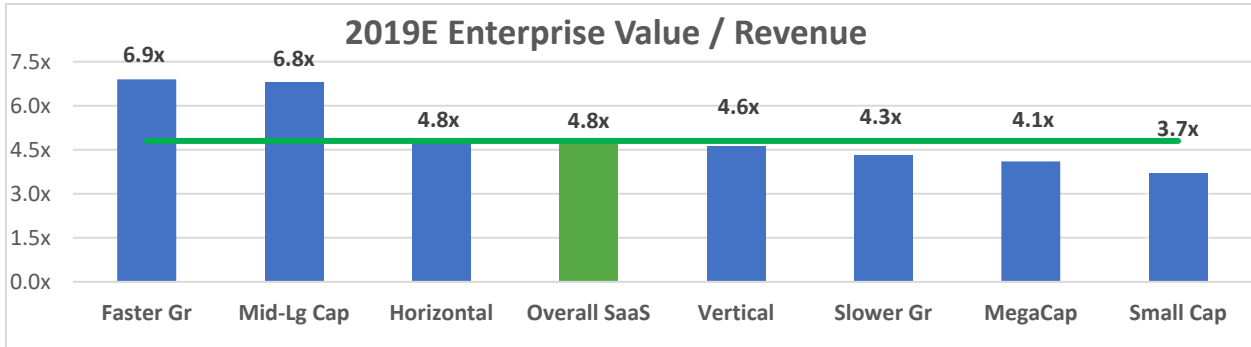
(% change in Mar)

Horizontal SaaS	0.5	NASDAQ	-2.9
Vertical SaaS	1.9	S&P 500	-2.7
Overall SaaS	0.7	Russell2000	1.0
		S&P Volatility	0.6

¹ Horizontal companies provide software

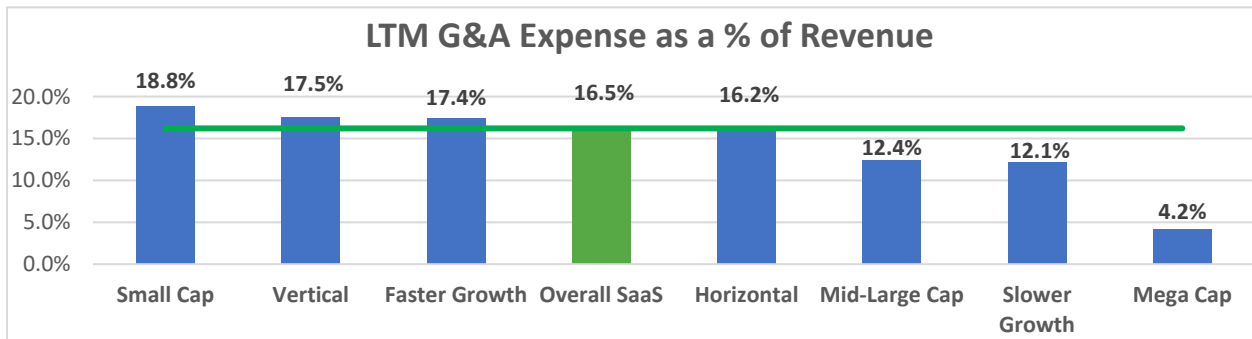
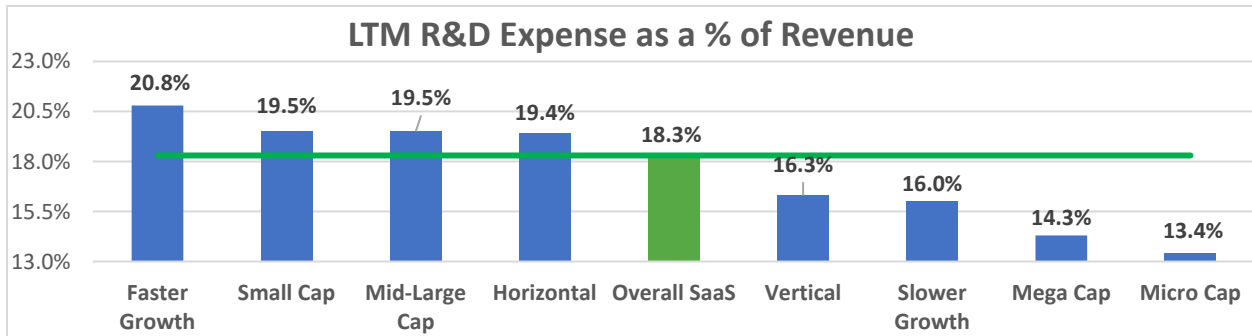
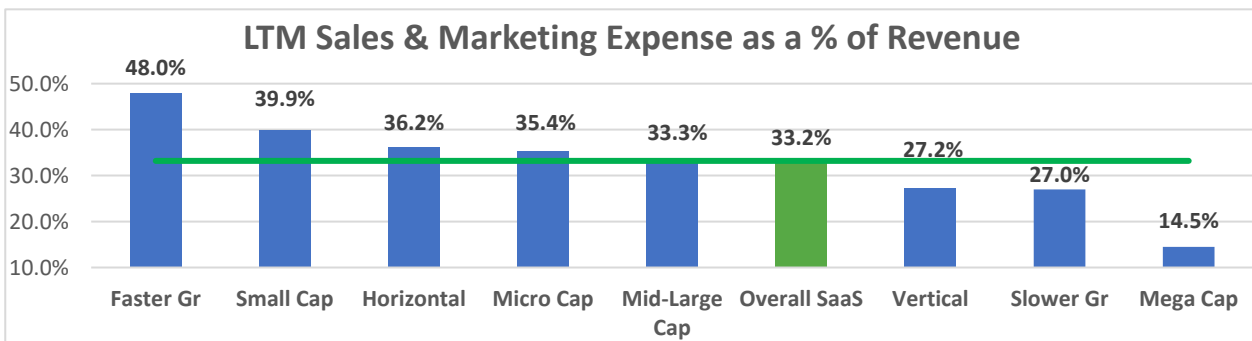
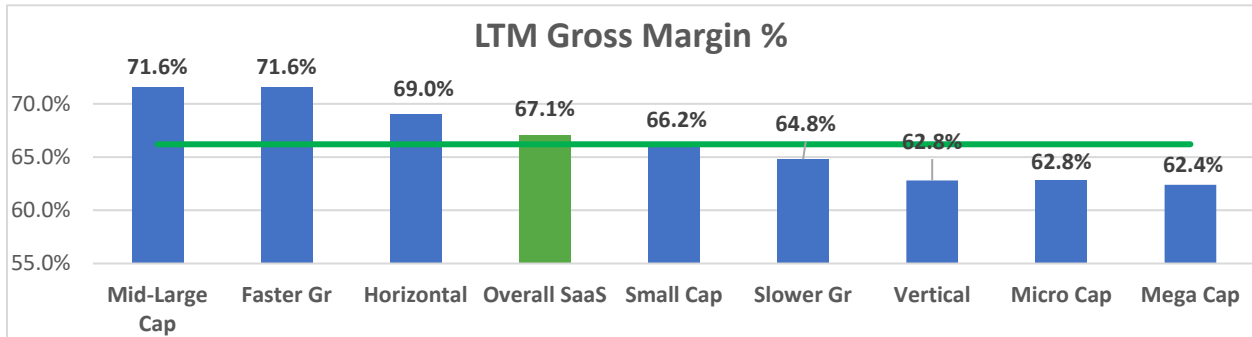
² Vertical companies provide software for
 Data source: S&P Capital IQ, 3/31/2018 Prices, 11/1-31/2018 %Change. All investing involves risk, including the risk of losing the entire investment. Prices are subject to change without prior notice.

Public Comparisons - Calendar Year (CY) 2019E Metrics - SaaS Software Cloud



Data Source: S&P Capital IQ | **Mega Cap** = \$100B+ mcap | **Mid-Large Cap** = \$3B-\$100B mcap | **Small Cap** = \$150M-3B mcap
Micro Cap = <\$150M mcap | **Fast Growth** = 2019E rev gr >20% | **Slow Growth** = 2019E rev gr <20% | **Horizontal** = Industry-neutral | **Vertical** = Industry-specific | **Overall SaaS** = median | **EBITDA** = earnings before int., tax, depr., amort.

Public Comparisons - Last Twelve Months (LTM) Metrics - SaaS Software Cloud



Data Source: S&P Capital IQ | **Mega Cap** = \$100B+ mcap | **Mid-Large Cap** = \$3B-\$100B mcap | **Small Cap** = \$150M-3B mcap | **Micro Cap** = <\$150M mcap | **Fast Gr** = 2019E rev gr >20% | **Slow Gr** = 2019E rev gr <20% | **Horizontal** = Industry-neutral solution | **Vertical** = Industry-specific solution | **Overall SaaS** = Group median

Selected Fast Growth - SaaS Software Cloud Public Company Valuation Metrics

(In \$ million, except per share values)

Ticker	Company Name	4/19/18 Price	Market Cap	Enterprise Value (EV)	2019E Street		EBITDA margin	2020E Growth	EV/Sales		EV/FCF		Price % Change From			60D avg \$Volume	Short as % of Float	Insider Ownership
					Sales	Growth			CY19E	CY20E	CY19E	CY20E	1M	3M	12M			
Fast Growth (2019E Revenue Growth > 20%, excluding Micro Caps)																		
AMZN	Amazon	\$1,556.91	\$755,054	\$768,215	\$284,320	22%	12.4%	20%	2.7x	2.3x	34.6x	25.8x	1%	20%	73%	9,092.98	1.0%	16%
APFF	AppFolio	50.30	1,716	1,670	223	23%	22.9%	20%	7.5x	6.2x	56.9x	na	24%	12%	96%	6.18	2.4%	44%
AYX	Alteryx	37.52	2,260	2,086	237	32%	na	34%	8.8x	6.6x	84.4x	48.8x	7%	33%	127%	22.47	14.5%	20%
BL	BlackLine	41.46	2,216	2,104	279	25%	5.8%	26%	7.6x	6.0x	na	62.8x	8%	20%	28%	29.22	3.8%	17%
BOX	Box	21.31	2,930	2,808	737	22%	6.2%	13%	3.8x	3.4x	35.1x	na	2%	-6%	26%	52.39	7.5%	8%
CDLX	Cardlytics	14.04	281	515	235	47%	4.4%	31%	2.2x	1.7x	na	25.8x	-15%	0%	0%	2.12	6.8%	7%
COUP	Coupa	47.31	2,679	2,429	286	24%	2.2%	20%	8.5x	7.1x	83.5x	na	2%	26%	52%	35.65	7.3%	1%
EVBG	Everbridge	38.30	1,093	1,036	172	26%	2.4%	23%	6.0x	4.9x	na	na	5%	17%	68%	12.47	12.1%	12%
FB	Facebook	168.10	487,383	445,672	69,334	25%	61.6%	23%	6.4x	5.2x	21.7x	16.2x	-3%	-7%	18%	6,543.85	1.3%	18%
HDP	Hortonworks	18.35	1,430	1,357	409	25%	na	18%	3.3x	2.8x	75.6x	na	-8%	-10%	73%	16.68	3.6%	3%
HUBS	HubSpot	115.70	4,380	4,174	602	24%	10.6%	25%	6.9x	5.6x	89.1x	na	-1%	17%	81%	62.77	10.0%	7%
INST	Instructure	41.70	1,430	1,388	263	26%	na	25%	5.3x	4.2x	na	63.1x	-7%	23%	84%	11.25	4.3%	10%
MB	MINDBODY	41.00	1,944	1,727	325	28%	13.1%	na	5.3x	na	51.5x	na	-1%	19%	52%	16.93	12.7%	7%
MULE	MuleSoft	44.61	5,958	5,754	544	32%	na	31%	10.6x	8.1x	na	na	35%	77%	98%	190.45	2.3%	7%
NOW	ServiceNow	172.99	30,221	29,615	3,280	28%	28.4%	26%	9.0x	7.1x	33.1x	22.8x	2%	22%	96%	322.70	5.4%	1%
OKTA	Okta	41.08	4,299	4,070	458	32%	na	53%	8.9x	5.8x	na	38.8x	8%	41%	76%	87.26	8.3%	11%
PAYC	Paycom	116.76	6,896	6,886	672	24%	39.7%	23%	10.3x	8.4x	41.1x	38.7x	8%	28%	96%	75.29	13.6%	17%
PCTY	Paylocity	56.46	2,970	2,859	496	22%	22.2%	na	5.8x	na	44.1x	na	7%	13%	44%	14.81	3.4%	35%
QTWO	Q2 Holdings	49.80	2,093	1,993	290	23%	11.6%	22%	6.9x	5.6x	92.8x	na	7%	30%	35%	19.73	4.0%	2%
RNG	RingCentral	67.90	5,342	5,161	776	23%	12.2%	23%	6.6x	5.4x	na	57.1x	1%	25%	131%	50.14	3.2%	21%
SAIL	SailPoint	24.02	2,095	2,047	276	24%	9.5%	20%	7.4x	6.2x	79.6x	41.6x	17%	52%	0%	17.52	4.2%	9%
SHOP	Shopify	126.67	13,388	12,445	1,370	37%	6.5%	30%	9.1x	7.0x	na	63.8x	-13%	10%	74%	246.10	7.0%	16%
SNAP	Snap	14.84	18,209	16,182	1,999	52%	na	44%	8.1x	5.6x	na	na	-10%	6%	-28%	329.69	13.4%	37%
TEAM	Atlassian	62.27	14,462	13,698	1,100	28%	32.4%	na	12.5x	na	32.3x	22.5x	6%	17%	96%	65.94	5.9%	34%
TWLO	Twilio	42.11	3,968	3,677	632	23%	4.9%	28%	5.8x	4.6x	na	na	4%	64%	33%	89.22	14.1%	13%
TWOU	2U	85.51	4,508	4,307	531	32%	5.3%	32%	8.1x	6.1x	na	52.0x	-3%	18%	98%	46.49	11.9%	1%
WDAY	Workday	131.97	27,978	26,201	3,301	23%	20.6%	21%	7.9x	6.5x	48.2x	42.8x	0%	16%	56%	227.41	10.6%	32%
WIX	Wix.com	86.45	4,054	3,821	749	26%	21.3%	21%	5.1x	4.2x	24.5x	17.4x	4%	49%	24%	51.08	8.2%	3%
YEXT	Yext	13.59	1,280	1,161	297	32%	na	28%	3.9x	3.1x	na	na	13%	6%	-3%	10.42	8.4%	27%
ZEN	Zendesk	50.48	5,263	5,016	723	28%	8.2%	27%	6.9x	5.5x	71.8x	na	10%	36%	80%	66.25	4.3%	4%
ZS	Zscaler	28.03	3,289	3,423	271	33%	3.1%	25%	12.6x	10.1x	na	na	0%	0%	0%	59.16	3.0%	54%
Select Faster Growth (2019E Rev. Growth >20%) Median					531	26%	11.1%	25%	6.9x	5.6x	49.9x	40.2x	2%	20%	73%	51.08	6.8%	12%

Data Source: S&P Capital IQ | EV = Enterprise value | EBITDA = Earnings before int, tax, depr., amort | FCF = Free cash flow

Selected Slower Growth - SaaS Software Cloud Public Company Valuation Metrics

(In \$ million, except per share values)

Ticker	Company Name	4/19/18 Price	Market Cap	Enterprise Value (EV)	2019E Street		EBITDA margin	2020E Growth	EV/Sales		EV/FCF		Price % Change From			60D avg \$Volume	Short as % of Float	Insider Ownership
					Sales	Growth			CY19E	CY20E	CY19E	CY20E	1M	3M	12M			
Slower Growth (2019E Revenue Growth < 20%, excluding Micro Caps)																		
AAPL	Apple	\$172.80	\$876,789	922,036	\$270,896	3%	30.4%	0%	3.4x	3.4x	14.1x	13.8x	-1%	-3%	23%	5,599.70	1.1%	0%
ALRM	AlarmCom	42.15	1,990	1,964	427	12%	22.8%	12%	4.6x	4.1x	32.4x	22.4x	9%	9%	33%	20.12	14.8%	3%
AMBR	Amber Road	8.50	232	245	95	10%	5.1%	na	2.6x	na	68.4x	na	-10%	2%	14%	0.80	1.9%	16%
APPN	Appian	28.43	1,727	1,653	239	19%	na	19%	6.9x	5.8x	na	na	8%	-20%	0%	10.40	15.5%	0%
APTI	Apptio	29.98	1,303	1,154	263	18%	6.1%	18%	4.4x	3.7x	53.9x	27.1x	0%	21%	156%	17.16	6.1%	18%
ASUR	Asure Software	15.18	191	239	100	12%	23.7%	na	2.4x	na	19.0x	na	11%	-3%	49%	2.75	25.0%	8%
ATHN	AthenaHealth	146.06	5,857	5,964	1,502	11%	27.4%	12%	4.0x	3.6x	33.4x	25.2x	1%	14%	27%	57.18	8.5%	1%
BCOV	Brightcove	7.45	260	235	181	9%	4.3%	na	1.3x	na	50.0x	na	6%	7%	-12%	1.59	1.2%	2%
BNFT	Benefitfocus	27.10	849	909	284	12%	7.3%	12%	3.2x	2.9x	71.2x	60.6x	13%	6%	-3%	5.95	18.8%	18%
CHUB.K	CommerceHub	22.64	988	968	135	11%	44.2%	6%	7.2x	6.8x	22.1x	18.8x	1%	9%	47%	19.09	1.1%	5%
CLDR	Cloudera	14.60	2,154	1,783	525	19%	na	20%	3.4x	2.8x	na	85.9x	-24%	-21%	0%	40.81	4.5%	3%
CRM	salesforce.com	124.06	91,770	89,481	15,147	19%	24.2%	18%	5.9x	5.0x	26.6x	23.3x	-1%	11%	49%	833.61	2.8%	5%
CSCO	Cisco	44.56	214,669	180,378	51,400	3%	33.6%	4%	3.5x	3.4x	12.5x	13.1x	1%	8%	36%	1,201.70	1.0%	0%
CSLT	Castlight Health	3.60	487	399	181	18%	4.2%	20%	2.2x	1.8x	40.5x	18.7x	0%	-10%	-10%	0.96	7.1%	5%
CSOD	Cornersone	44.45	2,548	2,518	557	10%	22.9%	11%	4.5x	4.1x	25.7x	na	4%	11%	23%	23.14	6.8%	9%
CTXS	Citrix	97.22	13,237	13,616	2,976	3%	31.2%	6%	4.6x	4.3x	14.9x	13.4x	3%	5%	17%	171.31	4.1%	1%
DATA	Tableau	84.39	6,881	6,026	1,097	14%	8.3%	19%	5.5x	4.6x	27.9x	27.8x	2%	14%	58%	57.30	4.5%	18%
DBX	DropBox	29.90	11,913	12,307	1,543	16%	20.4%	15%	8.0x	7.0x	30.9x	27.4x	0%	0%	0%	239.62	4.6%	34%
EBAY	eBay	42.11	41,849	46,001	11,950	9%	33.6%	9%	3.8x	3.5x	16.9x	14.8x	0%	10%	24%	407.22	2.9%	6%
EGAN	eGain	9.00	246	242	69	8%	na	na	3.5x	na	na	na	27%	53%	521%	1.63	1.2%	38%
ELLI	Ellie Mae	90.60	3,108	2,867	586	18%	28.7%	14%	4.9x	4.3x	33.0x	25.4x	-4%	-7%	-15%	42.40	13.0%	2%
ENV	Envestnet	55.60	2,523	2,704	912	11%	19.9%	14%	3.0x	2.6x	21.3x	18.6x	-4%	3%	62%	14.32	2.5%	4%
FNGN	Financial Engines	34.90	2,214	1,990	558	9%	33.4%	5%	3.6x	3.4x	12.1x	11.3x	1%	16%	-16%	15.23	5.1%	1%
GDDY	GoDaddy	64.87	9,520	11,639	2,905	12%	27.1%	11%	4.0x	3.6x	16.2x	14.4x	5%	26%	72%	106.94	3.1%	0%
GOOGL	Alphabet	1089.45	756,880	658,978	154,962	16%	38.9%	16%	4.3x	3.7x	18.1x	15.6x	-1%	-5%	27%	2,405.64	0.5%	12%
GWRE	Guidewire	86.36	6,901	6,396	809	17%	21.1%	na	7.9x	na	38.6x	na	2%	12%	46%	63.47	4.9%	0%
IBM	IBM	147.70	136,056	169,725	80,790	0%	24.4%	0%	2.1x	2.1x	13.4x	12.4x	-6%	-9%	-9%	726.72	1.7%	0%
INTU	Intuit	179.41	45,949	46,326	6,586	10%	36.6%	10%	7.0x	6.4x	21.9x	na	2%	7%	51%	285.85	1.3%	4%
LOGM	LogMeIn	121.85	6,377	6,125	1,229	7%	40.4%	5%	5.0x	4.8x	14.8x	13.2x	-2%	2%	16%	60.71	5.5%	2%
LPSN	LivePerson	16.40	986	930	265	11%	11.1%	na	3.5x	na	na	na	5%	37%	129%	7.84	2.6%	8%
MODN	Model N	17.65	520	529	158	4%	8.8%	na	3.4x	na	24.4x	na	-3%	11%	72%	4.24	2.1%	16%
MSFT	Microsoft	96.11	740,027	701,663	120,951	8%	42.7%	10%	5.8x	5.3x	18.5x	18.5x	3%	7%	48%	3,113.83	0.7%	1%
ORCL	Oracle	46.82	191,134	181,961	41,968	4%	47.2%	1%	4.3x	4.3x	11.5x	11.9x	-10%	-7%	6%	797.13	1.2%	28%
PEGA	Pegasystems	63.55	4,963	4,739	1,060	11%	16.4%	22%	4.5x	3.7x	32.3x	30.4x	5%	22%	43%	31.56	2.9%	52%
PYPL	PayPal Holdings	79.68	94,595	83,969	17,716	16%	27.1%	17%	4.7x	4.1x	22.1x	23.2x	-1%	-5%	84%	643.58	1.4%	5%
RP	RealPage	55.20	4,587	5,166	933	11%	28.1%	11%	5.5x	5.0x	27.0x	23.3x	5%	14%	50%	24.11	4.4%	4%
SAP	SAP	107.65	128,466	131,285	32,179	7%	34.0%	9%	4.1x	3.8x	23.8x	19.2x	2%	-5%	11%	0.67	0.0%	1%
SREV	ServiceSource	3.89	352	307	259	6%	10.5%	na	1.2x	na	35.4x	na	-1%	17%	7%	1.71	1.6%	4%
STMP	Stamps.com	221.65	3,893	3,825	640	17%	48.2%	na	6.0x	na	16.4x	na	14%	12%	104%	82.46	13.2%	6%
TWTR	Twitter	31.54	23,651	21,042	3,007	11%	37.1%	8%	7.0x	6.5x	29.1x	27.0x	-10%	33%	117%	878.79	3.9%	10%
ULTI	Ultimate Software	248.79	7,783	7,628	1,311	18%	25.7%	17%	5.8x	5.0x	40.5x	35.8x	1%	9%	22%	61.09	6.7%	4%
UPLD	Upland Software	28.21	586	676	142	6%	36.4%	na	4.8x	na	19.9x	na	-2%	20%	76%	8.32	1.0%	15%
VEEV	Veeva Systems	74.57	10,618	9,856	964	18%	32.9%	17%	10.2x	8.7x	32.8x	26.8x	-2%	27%	46%	97.96	2.6%	15%
VRNS	Varonis Systems	66.40	1,878	1,741	310	18%	5.0%	20%	5.6x	4.7x	63.6x	36.1x	13%	22%	112%	19.16	1.4%	2%
WAGE	WageWorks	45.00	1,784	1,136	565	8%	32.8%	na	2.0x	na	na	na	-3%	-26%	-38%	27.45	6.0%	1%
WEB	Web.com Group	18.65	808	1,443	787	3%	26.2%	3%	1.8x	1.8x	9.5x	10.1x	-2%	-20%	6%	8.28	5.4%	5%
WK	Workiva	24.70	1,051	994	267	13%	na	13%	3.7x	3.3x	99.2x	na	4%	12%	48%	6.88	6.3%	45%
Select Slower Growth (2019E Rev. Growth < 20%) Median					809	11%	27.1%	12%	4.3x	4.1x	25.0x	20.8x	1%	9%	40%	31.56	3.5%	5%

Data Source: S&P Capital IQ | EV = Enterprise value | EBITDA = Earnings before int, tax, depr., amort | FCF = Free cash flow

Selected Micro-Caps - SaaS Software Cloud Public Company Valuation Metrics

(In \$ million, except per share values)

Ticker	Company Name	4/19/18 Price	Market Cap	Enterprise Value (EV)	2019E Street		EBITDA margin	2020E Growth	EV/Sales		EV/FCF		Price % Change From			60D avg \$V volume	Short as % of Float	Insider Ownership
					Sales	Growth			CY19E	CY20E	CY19E	CY20E	1M	3M	12M			
Micro Caps and Those with No 2019E Revenue Estimates																		
ACTA	Actua	\$1.00	\$30	(\$302)	na	na	na	na	na	na	na	na	-10%	-94%	-93%	0.19	0.9%	4%
AKDS	Arkados Group	0.33	9	15	na	na	na	na	na	na	na	na	-42%	-54%	-76%	0.02	0.0%	12%
CCUR	Concurrent	5.37	53	(12)	na	na	na	na	na	na	na	na	0%	-6%	11%	0.29	1.6%	32%
COYN	COPSync	0.03	0	1	na	na	na	na	na	na	na	na	0%	-8%	-80%	0.00	0.0%	0%
CSTI	Costar	8.55	12	19	na	na	na	na	na	na	na	na	-1%	-14%	-20%	0.01	0.0%	0%
CXDO	Crexendo	2.50	36	35	na	na	na	na	na	na	na	na	-15%	-9%	72%	0.01	1.1%	74%
ECOM	ChannelAdvisor	11.15	302	250	138	7%	6.7%	5%	1.8x	1.7x	27.3x	18.7x	25%	22%	-2%	0.69	1.5%	5%
EVOL	Evolving Systems	3.76	47	48	na	na	na	na	na	na	na	na	-28%	-31%	-22%	0.05	0.1%	31%
FNJN	FinJan	2.97	82	60	68	-10%	na	na	0.9x	na	na	na	2%	31%	61%	2.19	2.8%	3%
GSB	GlobalSCAPE	3.77	81	68	na	na	na	na	na	na	na	na	6%	5%	-8%	0.12	0.1%	21%
G SVC	GSV Capital	7.08	149	158	1	0%	na	na	na	na	na	na	-19%	-10%	51%	3.40	0.0%	1%
INUV	Inuvo	0.93	27	28	114	20%	2.8%	na	0.2x	na	na	na	-9%	8%	-27%	0.06	1.3%	17%
IPAS	iPass	0.34	24	19	70	24%	8.8%	na	0.3x	na	na	na	-1%	-33%	-73%	0.16	1.2%	4%
LVT	LiveTiles	0.32	147	141	24	85%	na	na	5.8x	na	na	na	-2%	-29%	77%	0.20	0.0%	53%
MFON	Mobivity	1.04	39	40	na	na	na	na	na	na	na	na	-5%	-1%	65%	0.02	0.0%	19%
MRIN	Junein Software	7.50	43	19	na	na	na	na	na	na	na	na	6%	-27%	-40%	0.14	2.2%	28%
PGQW.F	1-Page	0.08	12	(7)	na	na	na	na	na	na	na	na	0%	0%	-35%	0.00	0.0%	12%
PYDS	Payment Data Sys	1.65	26	21	28	7%	na	na	0.8x	na	na	na	-7%	-23%	8%	0.31	5.3%	48%
RST	Rosetta Stone	13.76	309	269	195	12%	2.5%	23%	1.4x	1.1x	na	na	3%	11%	26%	2.04	1.6%	5%
SCIL	Scientific	0.55	13	na	na	na	na	na	na	na	na	na	-5%	-4%	-11%	0.01	0.0%	0%
SHSP	SharpSpring	6.36	54	48	22	27%	na	na	2.2x	na	na	na	18%	30%	44%	0.20	2.3%	21%
SMSI	Smith Micro	1.96	36	37	na	na	na	na	na	na	na	na	5%	-30%	135%	0.38	7.9%	12%
SNCR	Synchronoss	11.70	556	680	413	-1%	15.0%	na	1.6x	na	7.9x	na	16%	26%	-52%	8.45	14.4%	10%
SPRT	Support.com	2.75	52	2	na	na	na	na	na	na	na	na	-4%	-1%	24%	0.08	0.4%	8%
SPSC	SPS Commerce	65.71	1,124	961	267	10%	19.3%	9%	3.6x	3.3x	27.1x	na	5%	25%	9%	9.16	2.1%	1%
SVVC	First Technology	10.65	78	78	na	na	na	na	na	na	na	na	-13%	8%	30%	0.39	0.0%	4%
WSTL	Westell	3.23	50	24	na	na	na	na	na	na	na	na	-9%	-8%	26%	0.18	0.1%	32%
Select Micro Caps and Those with No Rev. Estimates Med					70	na	na	na	na	na	na	na	-1%	-6%	8%	0.18	0.9%	12%

Data Source: S&P Capital IQ | EV = Enterprise value | EBITDA = Earnings before int., tax, depr., amort | FCF = Free cash flow

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