

SaaS Software Cloud Update – February 2018

Public Markets and M&A Activity

The Navidar SaaS Software Cloud Index advanced 2.1% in February and 10.6% so far in 2018, well above the NASDAQ's -1.9% and 5.4%, respectively, amid volatile price swings—the S&P volatility index is up 80% this year. The sizable sell-off in the beginning of February was driven by inflation and interest-rate concerns, but markets recovered as a rally ensued over the rest of the month. 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.

SAP (NYSE: SAP -7.0%) – the large-cap software's stock weakness was related to its recently announced \$2.4B acquisition of Callidus (NASDAQ: CALD -0.1%), resulting in uncertainty about the impact on near-term profitability and SAP's cloud strategy. Even after absorbing CALD and model-transition headwinds, SAP's overall operating margin is expected to continue to improve. Also, quickening SAP's ability to achieve targeted ROI, it has had a reseller, customer, and technology partnership in place with CALD. Much like SAP's acquisition of Concur, SuccessFactors, and Ariba, we expect CALD to benefit from cross-selling. On a stand-alone basis, CALD generated about \$200M in SaaS revenue in 2017 with about 30% growth.

MuleSoft (NYSE: MULE +25.6%) – the data integration provider's stock performed well after reporting strong fourth-quarter results. MULE is benefiting from frequent usage alongside Amazon AWS. The company's stock had been in the penalty box since its March 2017 IPO due to subpar 2Q17 results and VC distributions (only half way through) that saturated the market. 4Q17 total revenue was \$88.7M (up 60% YOY) and 2018 guidance is \$405-415M (38% growth), both above consensus. By 2021, MULE is targeting revenue of \$1B, representing a CAGR of 35%. Calculated billings growth was 50% YOY in 4Q17, well above the Street's 30%, and operating cash flow was \$8.9M. Additional key metrics were also strong: dollar retention increased to 119% from 116% last quarter and customer count increased 20%, to 1,286.

Sailpoint (NYSE: SAIL +25.6%) – the SaaS and on-premise ID governance and administration provider reported strong 4Q17 results as it continues to displace legacy solutions. The stock has advanced 72% since its November 2017 IPO. Revenue of \$67.8M increased 53% YOY. Customer count ended the year at 933, up 35% YOY. It inked deals with five of the 15 largest federal agencies, bringing the total to 11. Cross-sell was also strong. Furthermore, SAIL launched a go-to-market partnership with Okta's access management solutions, which is complementary. SAIL has similar partnerships with others software leaders, including Microsoft.

Alteryx (NYSE: AYX +24.8%) – the data prep provider is capitalizing on the emergence of Chief Data Officers that are investing heavily in next-generation analytics solutions. 4Q18 billings grew 62% YOY, up from 40% last quarter, and free cash flow was \$11.1M. New customer growth accelerated and it experienced growing traction in the ML/data science market. Net dollar retention rate remained above 130%. Furthermore, 2018 revenue is guided to be \$176-179M, up about 35%.

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Okta (NASDAQ: OKTA +31.0%) – the identity management SaaS provider pre-released strong 4Q18 results. Revenue grew about 60% YOY, to \$77.0-77.5M, and calculated billings was about \$104M, 65% growth, up from mid-50% over the last few quarters. Non-GAAP operating loss was \$(12.3)-(11.3)M, above consensus. Also, total customers advanced by 400 to 4,350 total and customers with annual contract value over \$100,000 increased by 88 to 691. Furthermore, dollar-based retention rate also remained strong at 121%.

eGain (NASDAQ: EGAN +53.5%) – the customer engagement SaaS provider continues to make progress on its SaaS and recurring-revenue business model transition, which now represents 82% of total. Total revenue of \$15.3M grew 2% and SaaS revenue of \$7.7M grew 23.8% YOY while operating cash flow came in at \$2.6M. EGAN will continue investing in its channel ecosystem, building on the positive momentum with Cisco and renewed interest from Avaya.

LivePerson (NASDAQ: LPSN +20.9%) – the web-chat customer care SaaS provider reported strong year-end results. 4Q17 revenue exceeded consensus due in part to continued strength in its enterprise messaging solution, LiveEngage. Revenue was \$57.4M (up about 2% YOY) and free cash flow was \$1.5M. LPSN inked a record number of six- and seven-figure deals, plus its largest ever—\$20M total contract value. TTM average revenue per user increased about 10% YOY to more than \$220K. Interestingly, mobile now accounts for 40%+ of total interactions.

Wix.com (NASDAQ: WIX +22.9%) – the web builder for small businesses reported strong 4Q17 results. Revenue grew 41% YOY, to \$118.5M, and free cash flow was \$19.5M. Premium subscribers grew 31%, to 3.2M, and sequential net adds were 170k. Average revenue per premium user grew 1% sequentially to \$37.18. Also, WIX now has 140k users of its new product, Code (web application development platform), after only a few months of being live. 2018 revenue growth guidance is 40%, to \$591-595M, with free cash flow of \$98-100M. WIX also expended its reseller partnership with Google.

RingCentral (NYSE: RNG +15.4%) – the communications as a service provider reported growth acceleration and margin expansion. It landed 15 enterprise deals, up from 10 last quarter. SaaS revenue was \$129.7M, up 32% YOY, and non-GAAP EPS of \$0.07 came in a penny above consensus. Channel bookings increased more than 100% YOY for the seventh sequential quarter, contributing about 35% of overall bookings (up from 20% last year). 2018 total revenue is guided to be \$629-639M (about 25% growth). Non-GAAP operating margin is expected to be 7.8-8.2%.

Faster Growth

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

Ticker	2/28 \$Price	Feb %ch	Ticker	2/28 \$Price	Feb %ch
AMZN	1512.45	4.2	NOW	161.01	8.2
APPF	40.10	-5.3	OKTA	38.59	31.0
AYX	34.19	24.8	PAYC	98.92	7.9
BL	44.00	32.4	PCTY	46.77	-10.6
BOX	24.06	8.2	QWTO	45.55	7.6
CALD	35.90	-0.1	RNG	62.65	15.4
CLDR	19.05	1.8	SAIL	21.02	25.6
COUP	44.60	16.7	SHOP	138.21	8.0
EVBG	31.91	-1.1	SNAP	17.32	28.1
FB	178.32	-4.6	TEAM	54.29	0.6
HDP	17.98	-9.9	TWLO	34.16	30.2
HUBS	111.05	14.4	TWOOU	82.78	11.5
INST	43.40	20.9	WDAY	126.67	5.7
LVT	0.37	-16.6	WIX	75.05	22.9
MB	35.65	1.4	YEXT	12.70	5.4
MULE	30.88	25.6	ZEN	43.18	12.1

Slower Growth

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

Ticker	2/28 \$Price	Feb %ch	Ticker	2/28 \$Price	Feb %ch
ALRM	36.14	-5.8	GWRE	80.32	1.1
AMBR	9.10	25.3	IBM	155.83	-4.8
APPN	27.04	-12.8	INTU	166.86	-0.6
APTI	28.90	13.1	LOGM	115.55	-8.1
ASUR	14.25	-6.3	LPSN	14.45	20.9
ATHN	139.74	11.5	MODN	17.10	14.4
BNFT	24.20	-4.0	MSFT	93.77	-1.3
BSFT	0.00	0.0	ORCL	50.67	-1.8
BV	0.00	0.0	PEGA	58.00	14.1
CHUB.K	19.05	-1.2	PYPL	79.41	-6.9
CRM	116.25	2.1	RP	52.25	5.0
CSCO	44.78	7.8	SAP	105.56	-7.0
CSLT	3.55	-4.1	SPSC	60.02	14.1
CSOD	41.00	-0.3	SREV	3.66	7.6
CTXS	92.00	-0.8	STMP	191.05	-6.3
DATA	81.67	6.3	TWTR	31.86	23.4
EBAY	42.86	5.6	ULTI	238.46	2.4
ECOM	8.85	-2.7	UPLD	23.86	3.2
EGAN	7.75	53.5	VEEV	69.70	10.9
ELLI	88.67	-5.2	VRNS	56.15	3.4
ENV	55.10	2.5	WAGE	52.45	-13.4
FNGN	33.50	17.8	WEB	18.00	-22.6
GDDY	59.81	8.3	WK	22.75	2.0
GOOGL	1103.92	-6.6			

Indexes

(% change in Feb)

Faster SaaS	8.1	NASDAQ	-1.9
Slower SaaS	1.1	S&P 500	-3.9
Others	-2.4	Russell2000	-3.8
Overall SaaS	2.0	S&P Volatility	46.6

Data source: S&P Capital IQ. 2/28/2017 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.

Snap (NYSE: SNAP +28.1%) — the social media provider reported strong 4Q17 results driven in part by improvements with the Android version of SNAP. Ad impressions, ARPU, and user growth all exceeded expectations, as did revenue of \$285.7M, which increased 72% YOY. Global average daily users of \$187M grew 18% YOY, versus 16% in 3Q17, 21% in 2Q17, and 36% in 1Q17. Also, SNAP is attracting a broader set of advertisers as more than 50% of ad revenue was generated outside of Ad Age 100 advertisers. Furthermore, an increasing mix of programmatic ads, which now represents 90% of total, up from 80% last quarter, helped to drive Promoted Stories growth of 90% and a decline in ad pricing (down 15% sequentially). Still, the primary concerns with SNAP continue to be slowing growth, lack of visibility, and cost control (especially around development and sales/marketing).

Twitter (NYSE: TWTR +23.4%) – the social media juggernaut reported better than expected 4Q17 results. After four quarters of declines, revenue returned to growth, albeit just 2% YOY, reaching \$731M. Daily active users grew 12% YOY and video ad units, which are TWTR's largest ad format, continued to gain share. Self-serve advertising also performed well.

More M&A

- **Phunware is merging with Greece-based Stellar Acquisition (NASDAQ:STLR).** The transaction values Phunware at \$301M and will enable it to become publicly traded. Phunware provides a mobile app development platform, including lifecycle management, mobile marketing automation, analytics, and business intelligence.
- **Mindbody (NASDAQ: MB +1.4%) acquired FetMetrix,** which provides a performance tracking solution that helps wellness businesses increase retention with an engaging and interactive fitness experience. MB will integrate the technology into its solutions to provide interactive and personalized workouts that, through tracking, help individuals attain a better understanding of their personal health.
- **Carbonite (NASDAQ: CARB +11.7%) acquired Mozy** for \$145.8M from Dell EMC. Mozy provides online back up and data access solutions for home and business environments. The deal expands CARB's customer base and better positions its data-protection platform for every segment of the market.

Select Horizontal Companies¹

Ticker	2/28 \$Price	Feb %ch	Ticker	2/28 \$Price	Feb %ch
1PG	0.08	0.0	LVT	0.37	-16.6
AAPL	178.12	6.4	MFON	1.13	2.7
APPN	27.04	-12.8	MRIN	7.80	-16.1
APTI	28.90	13.1	MSFT	93.77	-1.3
ASUR	14.25	-6.3	MULE	30.88	25.6
AYX	34.19	24.8	NOW	161.01	8.2
BCOV	6.85	1.5	OKTA	38.59	31.0
BL	44.00	32.4	ORCL	50.67	-1.8
BNFT	24.20	-4.0	PAYC	98.92	7.9
BOX	24.06	8.2	PCTY	46.77	-10.6
CALD	35.90	-0.1	PEGA	58.00	14.1
CCUR	5.35	-6.5	PYDS	1.66	-17.0
CHUB.K	19.05	-1.2	PYPL	79.41	-6.9
CLDR	19.05	1.8	RNG	62.65	15.4
COUP	44.60	16.7	SAP	105.56	-7.0
CRM	116.25	2.1	SHSP	4.96	5.5
CSCO	44.78	7.8	SMSI	2.16	-15.7
CSOD	41.00	-0.3	SNAP	17.32	28.1
CTXS	92.00	-0.8	SPRT	2.74	2.2
DATA	81.67	6.3	SREV	3.66	7.6
EGAN	7.75	53.5	TEAM	54.29	0.6
EVBG	31.91	-1.1	TWLO	34.16	30.2
FNJN	2.86	47.4	ULTI	238.46	2.4
GDDY	59.81	8.3	UPLD	23.86	3.2
GOOGL	1103.92	-6.6	VRNS	56.15	3.4
GSB	3.48	-2.0	WAGE	52.45	-13.4
HDP	17.98	-9.9	WDAY	126.67	5.7
HUBS	111.05	14.4	WEB	18.00	-22.6
IBM	155.83	-4.8	WK	22.75	2.0
INTU	166.86	-0.6	YEXT	12.70	5.4
LOGM	115.55	-8.1	ZEN	43.18	12.1
LPSN	14.45	20.9			

Select Vertical Companies²

Ticker	2/28 \$Price	Feb %ch	Ticker	2/28 \$Price	Feb %ch
ACTA	1.10	-92.9	GWRE	80.32	1.1
AKDS	0.55	-12.6	INST	43.40	20.9
ALRM	36.14	-5.8	INUV	0.87	7.8
AMBR	9.10	25.3	IPAS	0.41	-30.7
AMZN	1512.45	4.2	MB	35.65	1.4
APPF	40.10	-5.3	MODN	17.10	14.4
ATHN	139.74	11.5	QWTO	45.55	7.6
BSFT	0.00	0.0	RP	52.25	5.0
BV	0.00	0.0	RST	13.69	7.1
COYN	0.03	-19.4	SAIL	21.02	25.6
CSLT	3.55	-4.1	SCIL	0.70	-14.6
CSTI	9.04	-2.8	SHOP	138.21	8.0
CXDO	2.61	-18.4	SNCR	9.34	16.2
EBAY	42.86	5.6	SPSC	60.02	14.1
ECOM	8.85	-2.7	STMP	191.05	-6.3
ELLI	88.67	-5.2	SVVC	9.73	-3.8
ENV	55.10	2.5	TWOU	82.78	11.5
EVOL	5.45	0.9	TWTR	31.86	23.4
FB	178.32	-4.6	VEEV	69.70	10.9
FNGN	33.50	17.8	WIX	75.05	22.9
GSVC	8.12	19.1	WSTL	3.24	-0.3

Indexes

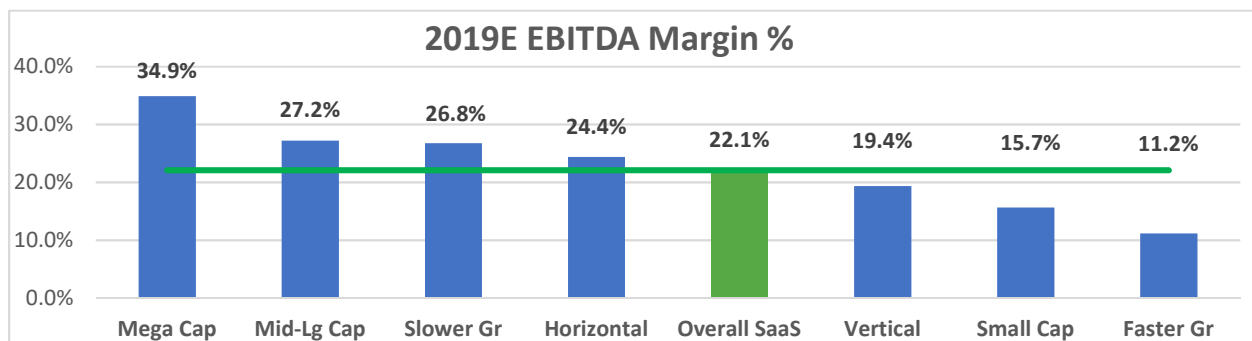
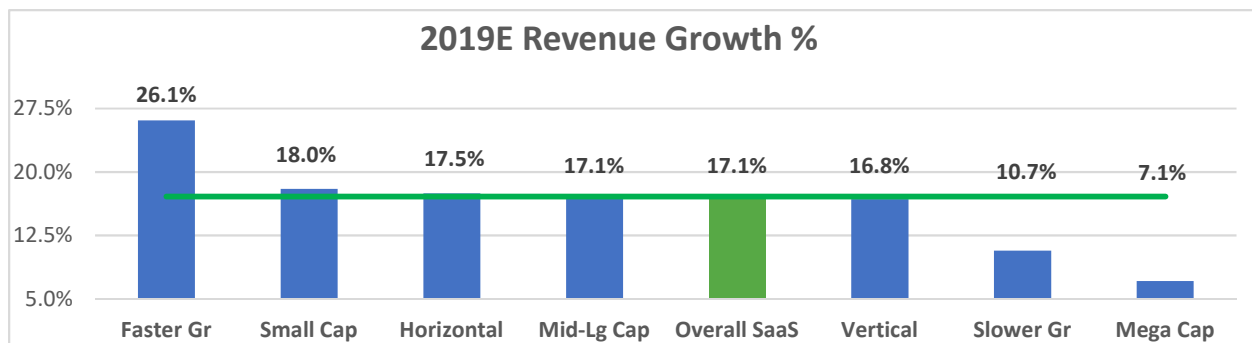
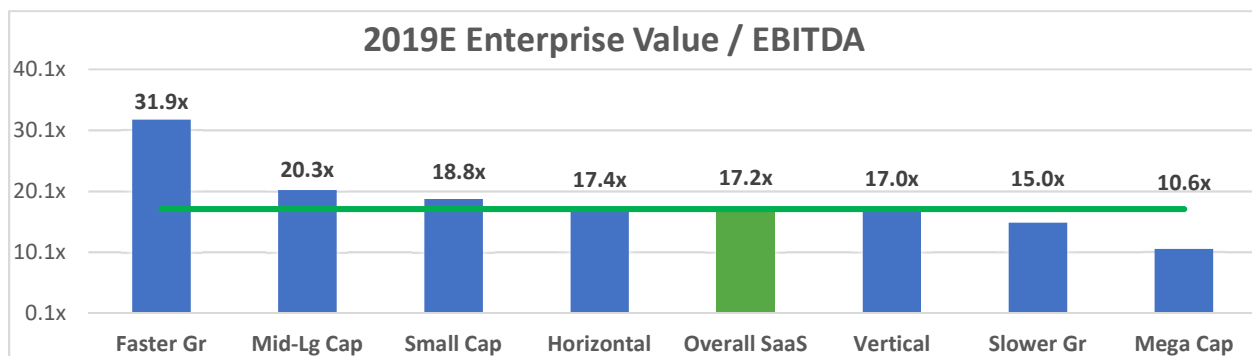
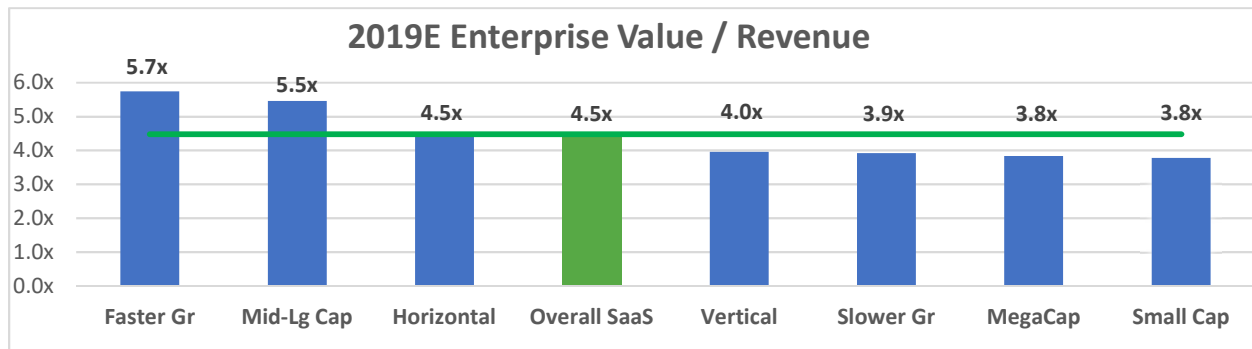
(% change in Feb)

Horizontal SaaS	2.1	NASDAQ	-1.9
Vertical SaaS	2.0	S&P 500	-3.9
Overall SaaS	2.1	Russell2000	-3.8
		S&P Volatility	46.6

¹ Horizontal companies provide software that can

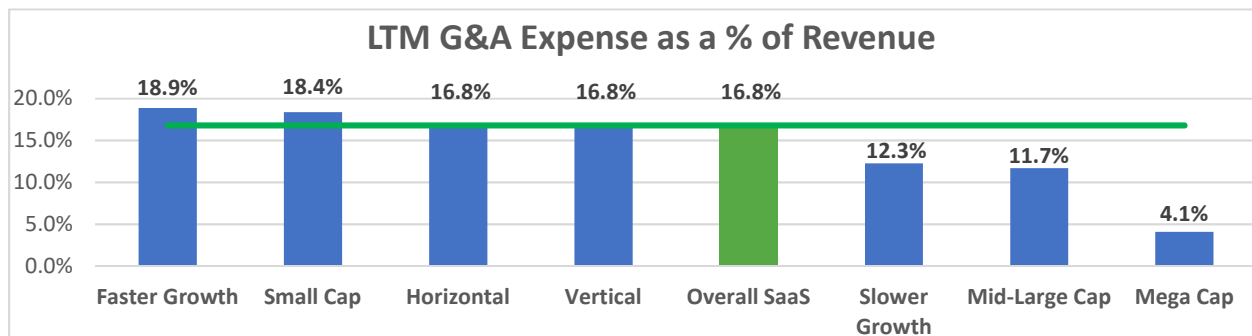
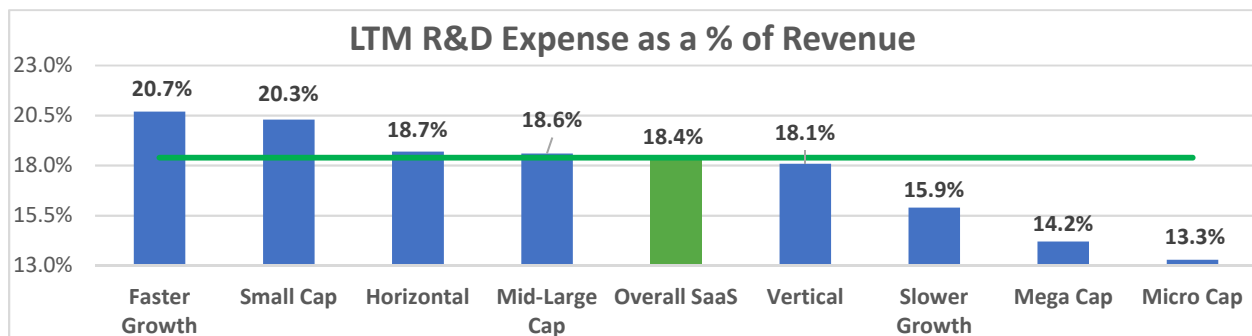
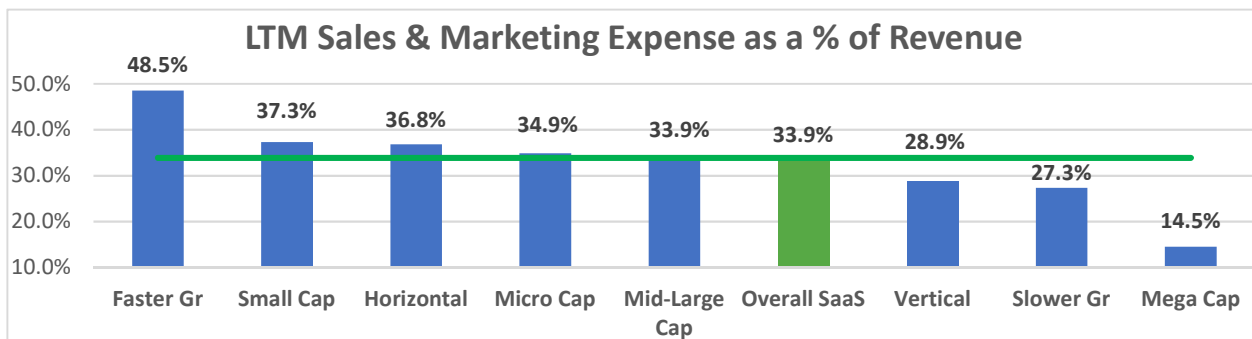
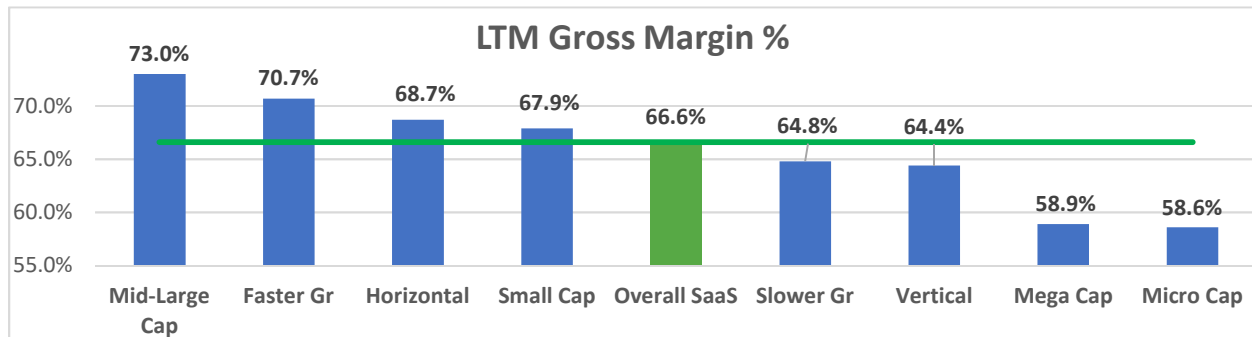
² Vertical companies provide software for specific
Data source: S&P Capital IQ, 2/28/2017 Prices.

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** = 2018E rev gr >20% | **Slow Growth** = 2018E 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** = 2018E rev gr >20% | **Slow Gr** = 2018E 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	3/8/18 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	\$1,435.39	\$684,774	697,935	\$283,365	22%	12.4%	20%	2.5x	2.1x	32.1x	25.4x	10%	26%	72%	7,424.63	1.3%	16%
APPF	AppFolio	40.78	1,373	1,330	232	28%	21.1%	na	5.7x	na	na	na	-4%	-6%	70%	4.35	2.6%	45%
AYX	Alteryx	27.68	1,563	1,406	233	32%	na	na	6.0x	na	55.3x	na	3%	11%	0%	16.46	9.9%	21%
BL	BlackLine	33.59	1,751	1,642	286	28%	5.6%	na	5.7x	na	73.5x	na	-4%	-6%	22%	12.19	3.3%	7%
BOX	Box	21.05	2,773	2,685	769	23%	7.0%	na	3.5x	na	31.0x	na	-5%	-4%	16%	31.17	4.2%	6%
CALD	CallidusCloud	35.75	2,364	2,213	362	20%	20.7%	20%	6.1x	5.1x	51.9x	34.6x	18%	28%	74%	53.71	1.5%	2%
CLDR	Cloudera	18.02	2,494	2,105	557	21%	na	27%	3.8x	3.0x	na	60.4x	-1%	18%	0%	24.23	5.4%	3%
COUP	Coupa	39.75	2,174	1,954	280	24%	0.7%	na	7.0x	na	94.2x	na	17%	20%	53%	23.56	6.8%	1%
EVBG	Everbridge	31.67	889	842	163	24%	4.9%	22%	5.2x	4.2x	68.2x	na	-2%	7%	64%	8.20	10.1%	12%
FB	Facebook	176.95	503,001	461,290	69,979	27%	60.5%	23%	6.6x	5.3x	21.6x	16.7x	-1%	-1%	32%	4,139.42	1.0%	18%
HDP	Hortonworks	17.92	1,272	1,200	409	25%	44.6%	18%	2.9x	2.5x	61.4x	na	-16%	-3%	70%	11.11	4.4%	5%
HUBS	HubSpot	101.70	3,625	3,419	600	24%	10.6%	25%	5.7x	4.6x	71.3x	na	10%	28%	77%	38.47	12.3%	7%
INST	Instructure	42.00	1,256	1,214	263	27%	na	23%	4.6x	3.7x	na	55.2x	23%	24%	79%	8.79	6.8%	11%
LVT	LiveTiles	0.38	158	155	19	63%	na	na	8.3x	na	na	na	15%	100%	163%	0.58	0.0%	59%
MB	MINDBODY	32.60	1,480	1,270	287	26%	13.9%	23%	4.4x	3.6x	44.4x	na	-2%	2%	32%	12.12	16.0%	7%
MULE	MuleSoft	25.37	3,270	3,088	519	31%	na	36%	5.9x	4.4x	na	52.5x	4%	10%	0%	28.87	5.2%	7%
NOW	ServiceNow	148.40	25,483	24,877	3,280	28%	28.4%	26%	7.6x	6.0x	27.9x	19.2x	7%	19%	60%	278.07	5.9%	2%
OKTA	Okta	33.14	3,218	2,994	444	33%	na	18%	6.7x	5.7x	na	na	23%	14%	0%	49.35	44.9%	35%
PAYC	Paycom	91.02	5,137	5,127	672	24%	39.7%	23%	7.6x	6.2x	30.7x	na	3%	14%	74%	64.34	16.1%	19%
PCTY	Paylocity	44.23	2,257	2,146	495	22%	21.5%	na	4.3x	na	33.1x	na	-11%	-7%	24%	10.73	3.1%	35%
QTWO	Q2 Holdings	44.00	1,800	1,711	300	25%	11.2%	25%	5.7x	4.6x	87.8x	na	16%	2%	38%	9.65	2.8%	2%
RNG	RingCentral	57.48	4,421	4,239	773	23%	12.2%	24%	5.5x	4.4x	na	50.7x	10%	22%	140%	24.44	1.2%	18%
SAIL	SailPoint	16.06	1,356	1,666	271	25%	7.6%	25%	6.1x	4.9x	66.2x	45.6x	-2%	0%	0%	4.19	0.8%	10%
SHOP	Shopify	133.62	12,625	11,698	1,300	36%	8.9%	31%	9.0x	6.9x	na	50.5x	18%	35%	138%	167.82	7.9%	17%
SNAP	Snap	18.64	22,709	20,665	2,039	54%	na	44%	10.1x	7.0x	na	na	32%	48%	0%	483.09	18.4%	35%
TEAM	Atlassian	51.40	12,030	11,351	1,235	27%	26.9%	na	9.2x	na	26.9x	18.6x	-2%	-2%	77%	53.21	7.2%	34%
TWLO	Twilio	31.43	2,460	2,169	628	23%	4.9%	na	3.5x	na	na	na	20%	22%	-7%	46.87	20.9%	13%
TWOU	2U	73.30	3,794	3,610	526	33%	5.1%	37%	6.9x	5.0x	na	42.9x	6%	14%	105%	23.30	12.5%	1%
WDAY	Workday	118.46	24,492	22,755	3,277	23%	18.7%	20%	6.9x	5.8x	42.2x	33.0x	5%	10%	37%	181.37	11.1%	33%
WIX	Wix.com	70.90	2,980	2,772	705	26%	23.3%	23%	3.9x	3.2x	18.1x	14.4x	14%	32%	34%	39.74	9.1%	3%
YEXT	Yext	11.29	998	885	299	33%	na	30%	3.0x	2.3x	na	na	-6%	-11%	0%	6.04	11.6%	24%
ZEN	Zendesk	41.72	4,180	3,933	720	28%	8.1%	27%	5.5x	4.3x	58.7x	42.3x	11%	19%	55%	36.87	3.4%	4%
Select Faster Growth (2019E Rev. Growth >20%) Median					523	26%	12.3%	24%	5.7x	4.6x	48.2x	42.3x	5%	14%	64%	26.66	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	3/8/18	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
		Price			Sales	Growth			CY19E	CY20E	CY19E	CY20E	1M	3M	12M			
Slower Growth (2019E Revenue Growth < 20%, excluding Micro Caps)																		
ALRM	Alarm.Com	36.86	1,735	1,723	435	14%	23.2%	14%	4.0x	3.5x	30.9x	22.9x	1%	-11%	29%	24.22	9.5%	3%
AMBR	Amber Road	\$9.52	\$258	272	\$97	11%	6.7%	na	2.8x	na	60.5x	na	28%	43%	4%	1.24	3.0%	16%
APPN	Apptian	29.55	1,853	1,781	234	19%	na	na	7.6x	na	na	na	-20%	33%	0%	21.70	39.3%	0%
APTJ	Apptio	25.15	1,015	866	263	18%	6.1%	18%	3.3x	2.8x	40.5x	20.4x	3%	15%	78%	13.06	6.1%	16%
ASUR	Asure Software	13.37	164	212	85	8%	24.2%	na	2.5x	na	27.6x	na	-10%	2%	7%	1.60	24.5%	9%
ATHN	AthenaHealth	134.18	5,229	5,336	1,505	11%	28.6%	13%	3.5x	3.2x	32.0x	23.2x	4%	8%	17%	69.72	11.0%	1%
BNFT	Benefitfocus	23.90	733	799	322	14%	12.1%	20%	2.5x	2.1x	45.0x	31.9x	-7%	-6%	-19%	3.80	19.4%	18%
BSFT	BroadSoft	54.90	na	na	na	na	na	na	na	na	na	na	0%	0%	27%	48.91	15.4%	0%
BV	Bazaarvoice	5.50	na	na	na	na	na	na	na	na	na	na	0%	24%	16%	6.38	1.0%	0%
CHUB.K	CommerceHub	18.35	800	791	145	13%	45.3%	13%	5.5x	4.8x	17.0x	14.0x	-9%	-8%	20%	3.19	0.3%	6%
CRM	salesforce.com	107.74	77,784	76,744	14,960	19%	22.7%	19%	5.1x	4.3x	24.2x	21.3x	-2%	1%	33%	445.15	2.1%	5%
CSCO	Cisco	41.98	203,826	168,163	50,329	3%	34.9%	na	3.3x	na	11.8x	na	3%	23%	30%	1,065.65	1.2%	0%
CSLT	Castlight Health	3.68	461	380	193	19%	6.5%	23%	2.0x	1.6x	7.4x	na	-15%	-2%	17%	1.32	6.9%	5%
CSOD	Cornerstone	39.04	2,258	2,228	556	11%	22.9%	13%	4.0x	3.5x	23.5x	na	0%	13%	-6%	19.28	7.4%	9%
CTXS	Citrix	88.21	13,089	13,469	2,958	3%	33.7%	6%	4.6x	4.3x	14.3x	15.8x	-2%	4%	12%	128.86	3.6%	1%
DATA	Tableau	81.38	6,364	5,509	1,097	14%	8.3%	19%	5.0x	4.2x	25.8x	25.4x	9%	14%	50%	77.82	7.3%	18%
EBAY	eBay	42.34	42,659	46,811	11,847	8%	33.7%	10%	4.0x	3.6x	17.0x	14.4x	11%	20%	26%	459.17	3.6%	6%
ECOM	ChannelAdvisor	8.80	249	196	138	7%	6.5%	5%	1.4x	1.3x	21.4x	14.7x	-7%	5%	-19%	0.72	1.3%	9%
EGAN	eGain	7.20	183	179	69	8%	na	na	2.6x	na	na	na	26%	112%	251%	1.38	0.4%	37%
ELLI	Ellie Mae	89.23	3,041	2,800	582	17%	30.0%	16%	4.8x	4.1x	31.8x	24.3x	-7%	1%	-6%	36.34	12.6%	2%
ENV	Envestnet	52.25	2,286	2,496	909	14%	21.2%	12%	2.7x	2.5x	17.7x	15.1x	-3%	0%	37%	11.95	2.9%	4%
FNGN	Financial Engines	28.55	1,770	1,572	561	9%	33.6%	2%	2.8x	2.8x	11.3x	10.6x	-4%	5%	-28%	12.71	7.0%	1%
GGDY	GoDaddy	53.89	7,225	9,365	2,824	11%	28.1%	11%	3.3x	3.0x	13.7x	12.2x	5%	11%	48%	59.47	4.3%	0%
GOOGL	Alphabet	1068.70	732,227	634,325	155,983	17%	38.6%	16%	4.1x	3.5x	17.2x	14.9x	-5%	3%	27%	2,092.45	0.5%	12%
GWRE	Guidewire	78.41	5,935	5,373	784	16%	19.4%	na	6.9x	na	28.8x	na	1%	-2%	42%	37.78	6.1%	0%
IBM	IBM	152.81	139,563	173,938	80,448	0%	24.6%	1%	2.2x	2.1x	14.3x	14.1x	-6%	3%	-15%	923.51	2.1%	0%
INTU	Intuit	160.82	40,740	40,838	6,502	9%	36.3%	10%	6.3x	5.7x	19.4x	na	-2%	4%	35%	195.43	1.0%	5%
LOGM	LogMeIn	128.65	6,630	6,354	1,218	6%	39.7%	5%	5.2x	4.9x	15.6x	14.2x	6%	12%	36%	65.16	5.7%	2%
LPSN	LivePerson	11.50	676	621	254	9%	11.5%	na	2.4x	na	50.9x	22.4x	-8%	4%	62%	4.14	2.3%	8%
MODN	Model N	17.43	512	521	165	8%	8.3%	na	3.2x	na	23.6x	na	10%	21%	68%	3.80	1.7%	20%
MSFT	Microsoft	89.80	691,672	646,325	120,570	8%	42.8%	10%	5.4x	4.9x	17.0x	17.0x	0%	7%	39%	2,685.36	0.7%	1%
ORCL	Oracle	48.76	200,729	190,257	42,436	5%	47.1%	na	4.5x	na	12.0x	na	-2%	-1%	19%	800.23	1.3%	27%
PEGA	Pegasystems	49.40	3,854	3,660	1,029	15%	15.1%	19%	3.6x	3.0x	28.5x	24.9x	-2%	-5%	22%	17.17	4.6%	52%
PYPL	PayPal Holdings	75.29	89,976	79,350	17,719	16%	27.2%	16%	4.5x	3.9x	20.6x	19.6x	-7%	1%	81%	755.97	1.1%	5%
RP	RealPage	48.25	3,953	4,242	931	11%	27.7%	10%	4.6x	4.2x	24.2x	21.4x	0%	10%	44%	20.47	4.5%	5%
SAP	SAP	103.47	123,329	123,408	32,182	7%	34.5%	9%	3.8x	3.5x	21.4x	17.4x	-6%	-8%	12%	1.03	0.0%	1%
SPSC	SPS Commerce	55.83	937	773	267	10%	19.3%	9%	2.9x	2.7x	21.8x	na	11%	20%	0%	7.77	2.7%	0%
SREV	ServiceSource	3.49	315	270	258	5%	10.8%	na	1.0x	na	31.1x	na	2%	26%	-39%	1.31	3.1%	4%
STMP	Stamps.com	180.20	3,130	3,095	615	15%	47.7%	na	5.0x	na	13.2x	na	-7%	3%	42%	61.19	16.4%	6%
TWTR	Twitter	33.19	24,734	22,124	2,969	10%	36.7%	8%	7.5x	6.9x	32.0x	29.6x	31%	66%	101%	1,051.21	6.3%	11%
ULTI	Ultimate Software	235.32	6,900	6,745	1,304	17%	25.6%	17%	5.2x	4.4x	35.5x	28.9x	4%	19%	20%	70.22	8.7%	5%
UPLD	Upland Software	22.40	464	503	128	5%	36.5%	na	3.9x	na	16.0x	na	-3%	7%	87%	3.65	1.3%	15%
VEEV	Veeva Systems	57.04	8,042	7,284	952	18%	32.9%	16%	7.6x	6.6x	24.7x	na	-2%	-6%	30%	55.27	3.3%	20%
VRNS	Varonis Systems	53.55	1,525	1,388	310	18%	4.4%	20%	4.5x	3.7x	51.8x	28.7x	3%	10%	95%	13.07	2.1%	1%
WAGE	WageWorks	56.25	2,200	1,552	579	10%	33.0%	na	2.7x	na	na	na	-8%	-10%	-23%	17.41	9.2%	0%
WEB	Web.com Group	18.00	855	1,490	791	4%	26.3%	3%	1.9x	1.8x	9.5x	10.5x	-25%	-19%	-13%	4.80	5.2%	4%
WK	Workiva	24.60	1,029	971	267	14%	na	16%	3.6x	3.1x	47.9x	na	13%	10%	87%	3.29	3.9%	46%
Select Slower Growth (2019E Rev. Growth < 20%) Median					784	11%	26.8%	13%	3.9x	3.5x	22.6x	19.6x	-2%	5%	27%	20.47	3.7%	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	3/8/18 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			
Micro Caps and Those with No 2019E Revenue Estimates																		
1PG	1-PAGE	0.08	12	(11)	na	na	na	na	na	na	na	na	0%	1500%	-35%	0.00	0.0%	9%
ACTA	Actua	\$0.85	\$26	8	na	na	na	na	na	na	na	na	38%	-93%	-92%	0.66	1.1%	9%
AKDS	Arkados Group	\$0.60	\$17	23	na	na	na	na	na	na	na	na	-6%	-9%	-15%	0.03	0.0%	12%
BCOV	Brightcove	6.78	234	212	na	na	na	na	na	na	na	na	7%	4%	-12%	0.90	1.5%	2%
CCUR	Concurrent	5.42	54	16	na	na	na	na	na	na	na	na	6%	-7%	12%	0.28	0.6%	26%
COYN	COPsync	0.02	0	1	na	na	na	na	na	na	na	na	-28%	55%	-91%	0.00	0.1%	12%
CSTI	Costar	9.00	13	22	na	na	na	na	na	na	na	na	-11%	-14%	-20%	0.01	0.0%	0%
CXDO	Crexendo	2.65	38	37	na	na	na	na	na	na	na	na	-7%	19%	86%	0.01	1.1%	75%
EVOL	Evolving Systems	5.55	69	71	na	na	na	na	na	na	na	na	1%	18%	16%	0.12	0.1%	31%
FNJN	FinJan	2.77	66	51	na	na	na	na	na	na	na	na	81%	45%	116%	1.10	2.2%	3%
GSB	GlobalSCAPE	3.50	73	60	na	na	na	na	na	na	na	na	5%	-2%	-9%	0.36	0.1%	21%
GSVC	GSV Capital	7.00	149	220	na	na	na	na	na	na	na	na	34%	48%	69%	1.57	0.0%	1%
INUV	Inuvo	0.85	24	25	114	20%	2.8%	na	0.2x	na	na	na	7%	17%	-35%	0.08	1.8%	16%
IPAS	iPass	0.44	29	22	74	19%	5.0%	na	0.3x	na	na	na	-15%	-35%	-69%	0.26	0.5%	3%
MFON	Mobivity	1.05	44	45	na	na	na	na	na	na	na	na	0%	-17%	22%	0.03	0.0%	20%
MRIN	Junein Software	8.75	48	22	na	na	na	na	na	na	na	na	-18%	-30%	-34%	0.07	2.5%	29%
PYDS	Payment Data Sy	1.71	22	20	na	na	na	na	na	na	na	na	22%	-6%	26%	0.68	3.5%	55%
RST	Rosetta Stone	12.85	284	247	na	na	na	na	na	na	na	na	13%	16%	86%	1.23	1.3%	4%
SCIL	Scientific Learnin	0.69	16	na	na	na	na	na	na	na	na	na	-21%	7%	0%	0.02	0.0%	0%
SHSP	SharpSpring	5.05	42	36	na	na	na	na	na	na	na	na	9%	21%	-3%	0.15	1.6%	21%
SMSI	Smith Micro Softv	2.39	34	34	na	na	na	na	na	na	na	na	-34%	-35%	16%	0.21	3.9%	40%
SPRT	Support.com	2.77	52	2	na	na	na	na	na	na	na	na	7%	14%	36%	0.13	0.2%	10%
SVVC	First Technology	9.43	70	63	na	na	na	na	na	na	na	na	24%	32%	37%	0.44	0.0%	8%
WSTL	Westell	3.15	49	23	na	na	na	na	na	na	na	na	4%	-17%	23%	0.19	0.1%	32%
Select Micro Caps and Those with No Rev. Estimates Media					94	na	na	na	na	na	na	na	4%	6%	6%	0.17	0.4%	12%

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