

SaaS Software Cloud Update – Aug 2018

Public Markets and M&A Activity

The Navidar SaaS Software Cloud Index increased by 11.1% in August and advanced 32.4% so far in 2018, compared with the NASDAQ's +5.7% and +17.5%, the Russell 2000's +4.3% and +13.5%, and the S&P 500's +3.0% and +8.5%, respectively. The following is a summary of the company-specific issues related to selected stocks in our coverage universe that meaningfully overperformed or underperformed as well as relevant M&A activity.

Apple (NASDAQ: AAPL +19.6%) – the iPhone maker reported strong 3Q18 earnings. AAPL witnessed their strongest growth rate in 11 quarters, with revenues growing by 17% YoY to \$53.3B, driven by continued strong sales of iPhone, services and wearables. The Company registered 40% YoY growth in earnings to \$2.34 per share, led by a boost from share repurchases and a lower tax rate as a result of the 2017 Tax Act. AAPL returned almost \$25B to investors through its capital return program during 3Q18, including \$20B in share repurchases. The Company provided a forecast for 4Q18, expecting revenues to be in the range of \$60-62B.

Alteryx (NYSE: AYX +48.9%) – the data analytics software provider reported strong 2Q18 results, with both revenues and earnings exceeding analyst expectations. AYX revenues jumped 54% YoY to \$46.8M and earnings per share came in at a loss of \$0.09, remaining flat compared to the prior-year period and \$0.01 above analyst expectations. The Company benefited from rising recurring revenue, saw its gross margins increase and experienced a significant jump in customer growth. AYX raised its revenue outlook for the full year, expecting revenues to be in the range of \$191-193M, greater than the earlier guidance of \$183-186M.

Paycom Software (NYSE: PAYC +46.0%) – the human capital management software provider reported strong 2Q18 results, with revenues growing YoY by 31% to \$128.8M, exceeding analyst estimates and management guidance. PAYC adjusted EBITDA increased 46.2% YoY to \$53.5M. The Company reported earnings of \$0.59, beating analyst estimates of \$0.49 per share. PAYC raised its guidance for 2018, with revenues now anticipated to be in the range of \$554-556M, up from the previous expectation of \$545-547M. Adjusted EBITDA is expected to be in the range of \$231-233M, up from previous guidance of \$220-222M.

Benefitfocus (NASDAQ: BNFT +46.5%) – the human resources software provider reported better than expected 2Q18 results. BNFT revenues exceeded analyst estimates by 7% to \$60.6M for the quarter. The Company reported a quarterly loss of \$0.24 per share versus the street estimate of a loss of \$0.40 per share. BNFT expects full-year earnings to fall between a loss of \$0.72-0.54 per share, with revenue ranging between \$253-258M.



Veeva Systems (NYSE: VEEV +38.0%) – the cloud-based software services provider reported better than expected 2Q19 results. VEEV revenues jumped 25% YoY to \$209.6M, beating analyst estimates and management guidance. Earnings per share grew 63% YoY to \$0.39, \$0.06 better than management prediction and ahead of analyst estimates. The Company boosted its guidance for the full year, with revenues now expected to grow 21% to \$828M; earnings per share is expected to grow 47% to \$1.37 per share.

Twilio (NYSE: TWLO +39.3%) – the in-app communications solutions provider reported strong 2Q18 results, with top line beating street expectations and management guidance. TWLO revenues grew 54% YoY to \$148M, beating the street expectation of \$131M and management guidance of \$130M. The Company reported a profit of \$0.03 per share, swinging from a loss of \$0.05 per share last year and street forecast of \$0.05 loss per share. TWLO raised its guidance for the full year, with revenues expected in the range of \$585-590M, up from the previous range of \$538-544M. The Company now expects to report 2018 full year earnings in the range of \$0.02-0.04 per share, versus its previous forecast of an adjusted net loss of \$0.07-0.10 per share.

Paylocity (NASDAQ: PCTY +37.0%) – the cloud-based payroll and human resources software services provider reported mixed results, with the top line surpassing consensus estimates and the bottom line falling share of forecast. PCTY revenues for 4Q18 increased by 27% YoY to \$96.6M, beating the average analyst estimate of \$93M. The Company reported earnings of \$0.11 per share, slightly missing the average analyst estimate of \$0.12 per share. PAYC is benefiting from its expanding sales force, continued investment in SaaS technology and mobile applications.

RingCentral (NYSE: RNG +26.3%) – the cloud-based phone system provider reported strong 2Q18 results, with both revenues and profits topping expectations, following large contract wins during the quarter. RNG revenues jumped 34% YoY to \$161M, exceeding consensus estimates of \$155.7M. Earnings jumped 90% YoY to \$0.19 per share, beating the average analyst prediction of \$0.15 per share. The Company expects full-year earnings to be in the range of \$0.66-0.70 per share and revenues to fall between \$649-656M.

Zendesk (NYSE: ZEN +26.5%) – the enterprise software provider reported strong 2Q18 earnings, with revenues continuing to grow at a near-40% rate and the adjusted bottom line swinging into positive territory. ZEN posted revenues of \$141.9M during the quarter, topping street forecasts. Adjusted earnings came at \$0.03 per share, better than the market estimate of a breakeven. ZEN dollar-based net expansion rate was 119% during 2Q18, up from 116% in 2Q17. The Company raised its full year revenue guidance by \$15M to \$582-586M versus the average analyst estimate of \$571M.

Faster Growth

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

Ticker	8/31 \$Price	Aug %ch	Ticker	8/31 \$Price	Aug %ch
AMZN	2012.71	13.2	OKTA	61.83	24.5
APPF	85.40	18.3	PAYC	155.12	46.0
AYX	58.05	48.9	PCTY	79.44	37.0
BL	52.76	23.6	QTTW	62.30	5.3
BOX	24.56	2.5	RNG	93.15	26.3
CDLX	20.39	8.3	SAIL	30.93	28.4
CRM	152.68	11.3	SEND	36.27	42.1
COUP	71.71	17.0	SHOP	145.67	5.4
DOMO	23.51	41.5	SNAP	10.90	-12.8
EVBG	60.21	33.9	TEAM	90.01	24.3
FB	175.73	1.8	TWLO	80.66	39.3
HDP	22.32	28.1	TWOU	89.36	18.1
HUBS	143.70	15.8	WDAY	154.54	24.6
INST	40.95	5.8	WIX	111.10	16.9
LVT	0.44	-8.3	YEXT	24.86	17.6
MB	37.10	-0.7	ZEN	68.89	26.5
NOW	196.36	11.6	ZS	42.79	21.2

Slower Growth

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

Ticker	8/31 \$Price	Aug %ch	Ticker	8/31 \$Price	Aug %ch
AAPL	227.63	19.6	IBM	146.48	1.1
ALRM	56.29	31.3	INTU	219.47	7.5
AMBR	8.73	2.7	LOGM	85.95	6.0
APPN	34.93	12.4	LPSN	26.90	15.9
APTI	38.80	15.6	MODN	17.00	-8.8
ASUR	15.03	6.7	MSFT	112.33	5.9
ATHN	153.90	2.1	ORCL	48.58	1.9
BCOV	8.20	-4.1	PEGA	63.70	14.6
BNFT	44.10	46.5	PYPL	92.33	12.4
CLDR	15.01	12.1	RST	15.80	7.5
CSCO	47.77	13.0	RP	62.40	13.2
CSLT	3.00	-9.1	SAP	119.81	2.7
CSOD	56.56	14.5	SPSC	98.27	14.5
CTXS	114.02	3.7	SREV	3.19	-8.9
DATA	111.86	8.5	STMP	248.45	-4.8
DBX	26.85	0.3	TWTR	35.18	10.4
EBAY	34.61	3.5	ULTI	309.67	11.8
ECOM	13.05	-6.1	UPLD	37.22	18.8
EGAN	14.30	10.0	VEEV	104.36	38.0
ELLI	105.37	6.2	VRNS	73.90	23.6
ENV	63.20	7.8	WAGE	53.50	1.3
GDDY	81.46	10.6	WEB	27.95	11.1
GOOGL	1231.80	0.4	WK	36.85	45.9
GWRE	100.57	16.7			

Indexes

(% change in Aug)

Faster SaaS	18.2	NASDAQ	5.7
Slower SaaS	8.5	S&P 500	3.0
Others	4.9	Russell2000	4.3
Overall SaaS	11.1	S&P Volatility	0.2

Data source: S&P Capital IQ. 8/31/2018 Prices. 8/1-31/2018 %Change. All investing involves risk, including the risk of losing the entire investment. Prices are subject to change without prior notice.

Alarm.com (NASDAQ: ALRM +31.3%) – the security service provider reported better than expected results for 2Q18, with revenues growing by 21.5% YoY to \$104.5M and beating analyst expectations of \$94.7M. ALRM earnings came in at \$0.34 per share, higher than analyst expectations of \$0.26 per share. The Company expects full-year 2018 revenues to be in the range of \$388-391M and earnings in the range of \$1.19-1.20 per share.

More M&A

- VMware (NYSE: VMW)** announced plans to acquire CloudHealth Technologies for an undisclosed consideration. CloudHealth delivers a cloud operations platform across AWS, Microsoft Azure, and Google Cloud, enabling customers to help analyze and manage cloud cost, usage, security and performance centrally for native public clouds. The proposed deal will allow VMW to simplify operations across multiple native public clouds.
- Cisco Systems (NASDAQ: CSCO)** announced plans to acquire Duo Security, for ~\$2.35B in cash and stock. Duo Security provides unified access security and multi-factor authentication through the cloud. The proposed deal will accelerate CSCO’s intent-based networking strategy, allowing customers to securely connect users to any application on any network.
- Amadeus** announced plans to acquire TravelClick from PE firm Thomas Bravo, for ~\$1.52B. TravelClick provides cloud-based software solutions for hoteliers worldwide, including a hotel central reservation system, guest management solutions, as well as business intelligence and media solutions. The proposed deal will significantly enhance Amadeus’ presence in the hospitality sector and enable reach to all segments of the market with an enhanced portfolio.
- Arista Networks (NYSE: ANET)** announced plans to acquire Mojo Networks for an undisclosed consideration. Mojo Networks develops and delivers cloud managed WiFi platform and WiFi access points for enterprises worldwide. The proposed deal will enhance ANET’s cognitive cloud networking offerings.

Select Horizontal Companies¹

Ticker	8/31 \$Price	Aug %ch	Ticker	8/31 \$Price	Aug %ch
AAPL	227.63	19.6	MFON	1.37	19.1
APPN	34.93	12.4	MRIN	3.35	-39.6
APTI	38.80	15.6	MSFT	112.33	5.9
ASUR	15.03	6.7	NOW	196.36	11.6
AYX	58.05	48.9	OKTA	61.83	24.5
BCOV	8.20	-4.1	ORCL	48.58	1.9
BL	52.76	23.6	PAYC	155.12	46.0
BNFT	44.10	46.5	PCTY	79.44	37.0
BOX	24.56	2.5	PEGA	63.70	14.6
CCUR	4.90	-4.5	PYDS	1.91	11.7
CLDR	15.01	12.1	PYPL	92.33	12.4
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DOMO	23.51	41.5	SREV	3.19	-8.9
EGAN	14.30	10.0	TEAM	90.01	24.3
EVBG	60.21	33.9	TWLO	80.66	39.3
FNJN	4.39	9.8	ULTI	309.67	11.8
GDDY	81.46	10.6	UPLD	37.22	18.8
GOOGL	1231.80	0.4	VRNS	73.90	23.6
GSB	3.95	7.6	WAGE	53.50	1.3
HDP	22.32	28.1	WDAY	154.54	24.6
HUBS	143.70	15.8	WEB	27.95	11.1
IBM	146.48	1.1	WK	36.85	45.9
INTU	219.47	7.5	YEXT	24.86	17.6
LOGM	85.95	6.0	ZEN	68.89	26.5
LPSN	26.90	15.9	ZS	42.79	21.2
LVT	0.44	-8.3			

Select Vertical Companies²

Ticker	8/31 \$Price	Aug %ch	Ticker	8/31 \$Price	Aug %ch
ACTA	0.73	-0.8	INST	40.95	5.8
AKDS	1.03	87.3	INUV	0.64	-3.0
ALRM	56.29	31.3	IPAS	2.00	-40.3
AMBR	8.73	2.7	MB	37.10	-0.7
AMZN	2012.71	13.2	MODN	17.00	-8.8
APPF	85.40	18.3	QTWO	62.30	5.3
ATHN	153.90	2.1	RP	62.40	13.2
CDLX	20.39	8.3	RST	15.80	7.5
CSLT	3.00	-9.1	SAIL	30.93	28.4
CSTI	11.25	10.8	SCIL	0.65	24.2
CXDO	2.30	-9.8	SHOP	145.67	5.4
EBAY	34.61	3.5	SPSC	98.27	14.5
ECOM	13.05	-6.1	STMP	248.45	-4.8
ELLI	105.37	6.2	SVVC	15.27	18.6
ENV	63.20	7.8	TWOU	89.36	18.1
EVOL	2.28	-12.5	TWTR	35.18	10.4
FB	175.73	1.8	VEEV	104.36	38.0
GSVC	7.27	5.4	WIX	111.10	16.9
GWRE	100.57	16.7	WSTL	2.87	4.4

Indexes

(% change in Aug)

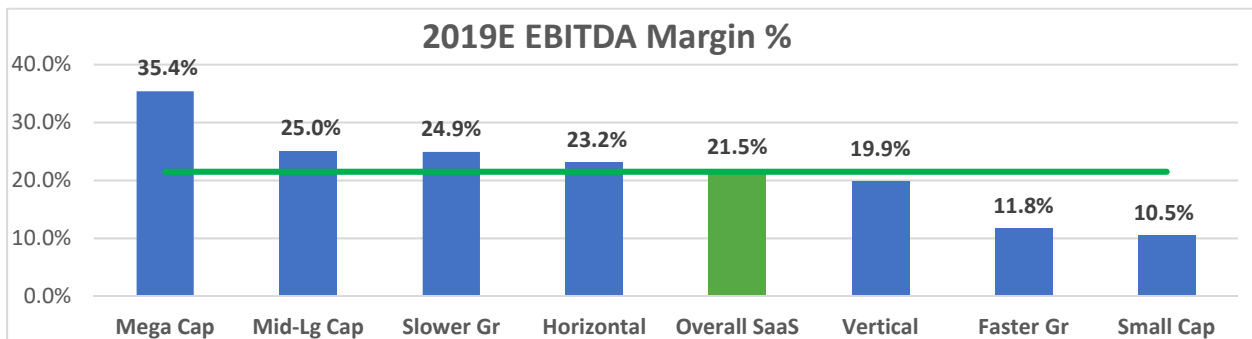
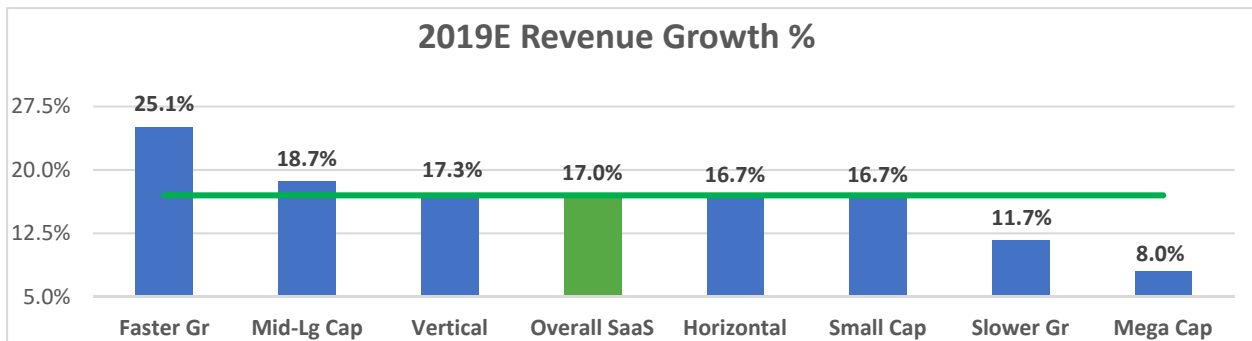
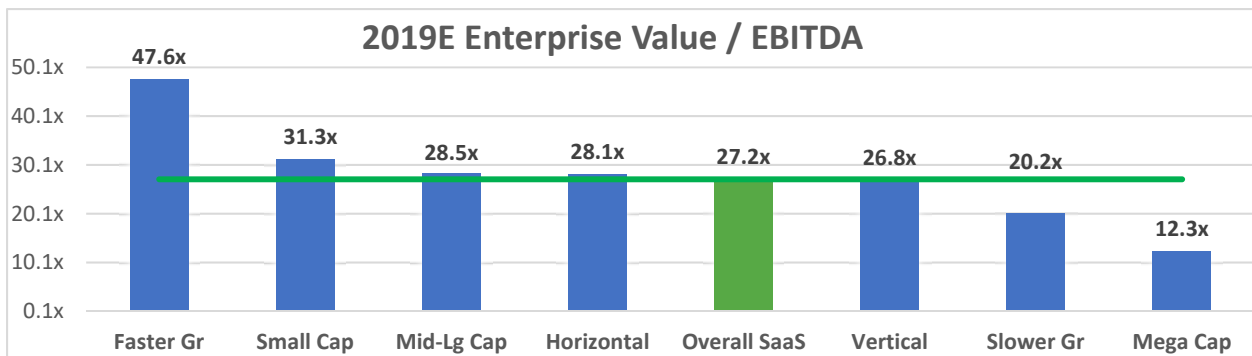
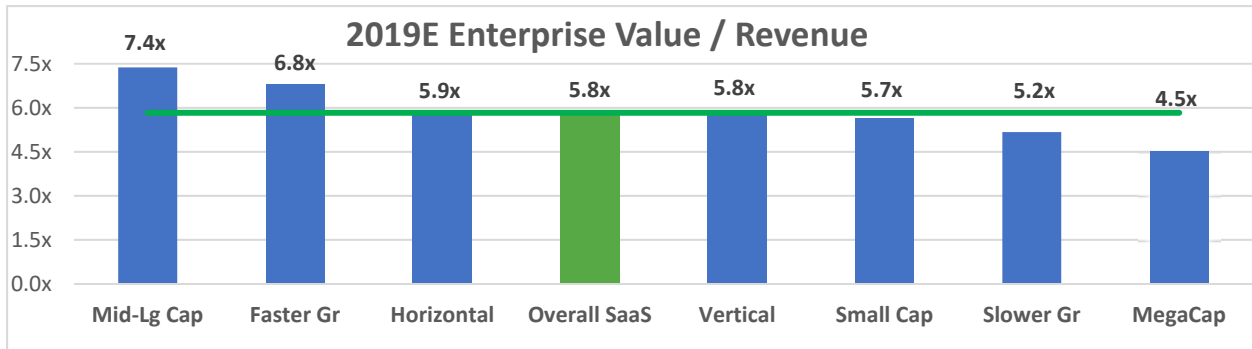
Horizontal SaaS	12.4	NASDAQ	5.7
Vertical SaaS	6.0	S&P 500	3.0
Overall SaaS	11.1	Russell2000	4.3
		S&P Volatility	0.2

Data source: S&P Capital IQ. 8/31/2018 Prices. 8/1-31/2018 %Change. All investing involves risk, including the risk of losing the entire investment. Prices are subject to change without prior notice.

¹ Horizontal companies provide software that can be used in almost all industries

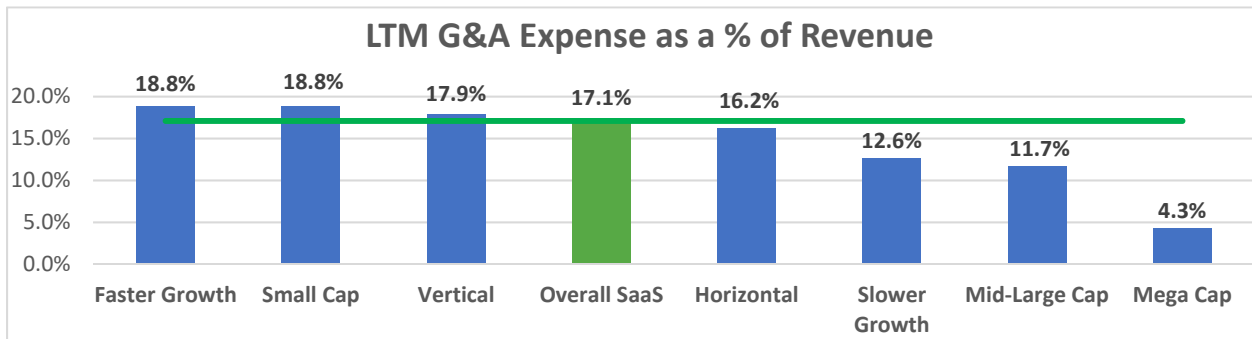
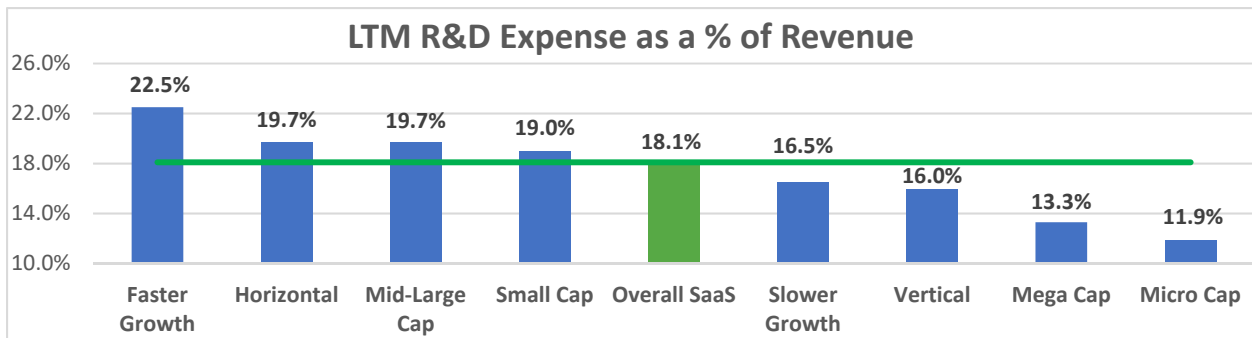
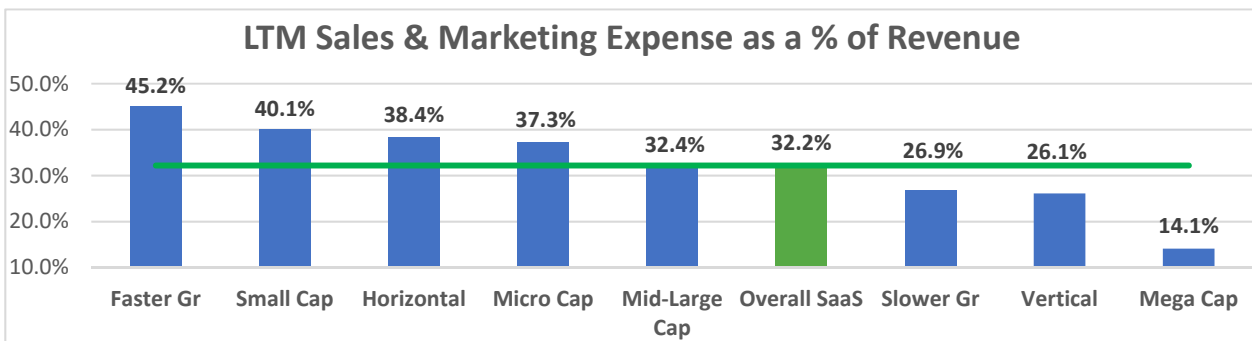
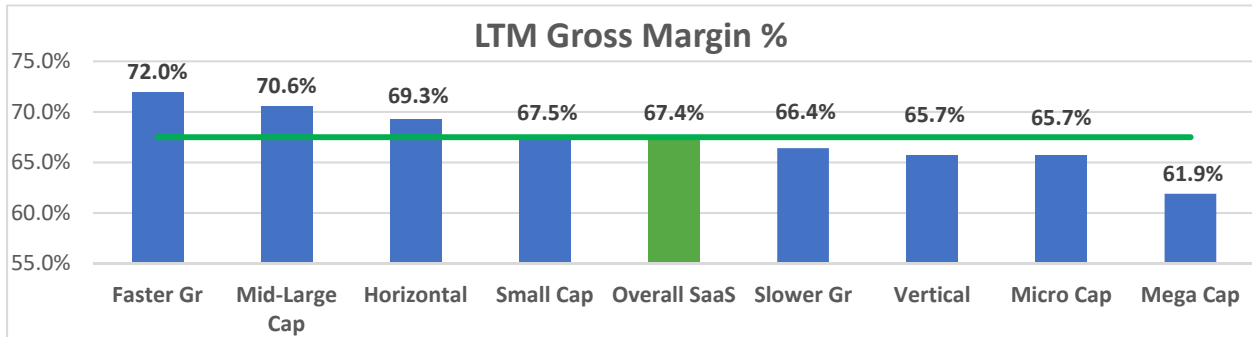
² Vertical companies provide software for specific industries

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

Ticker	Company Name	8/31/18 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	\$2,012.71	\$981,682	\$1,000,421	\$286,539	22%	14.8%	19%	3.5x	2.9x	37.0x	26.6x	13%	24%	105%	8,883.62	1.0%	16%
APPF	AppFolio	85.40	2,923	2,870	230	24%	28.0%	24%	12.5x	10.1x	64.6x	na	18%	44%	99%	11.21	4.9%	42%
AYX	A lteryx	58.05	3,534	3,371	258	34%	na	30%	13.1x	10.1x	na	90.0x	49%	71%	146%	52.10	27.1%	19%
BL	BlackLine	52.76	2,846	2,731	282	25%	6.7%	24%	9.7x	7.8x	na	93.1x	24%	27%	71%	18.58	4.9%	17%
BOX	Box	24.56	3,478	3,367	736	21%	7.0%	17%	4.6x	3.9x	41.7x	30.3x	3%	-4%	25%	71.74	7.5%	5%
CDLX	Cardlytics	20.39	434	431	207	34%	na	45%	2.1x	1.4x	na	70.7x	8%	0%	0%	3.02	12.6%	6%
COUP	Coupa	71.71	4,087	3,823	292	24%	4.5%	30%	13.1x	10.1x	na	84.5x	17%	34%	135%	44.03	8.5%	1%
CRM	salesforce.com	152.68	115,533	116,504	15,867	20%	24.4%	19%	7.3x	6.2x	34.1x	27.4x	11%	18%	60%	721.82	2.1%	5%
DOMO	Domo	23.51	587	611	160	21%	na	23%	3.8x	3.1x	na	na	42%	0%	0%	12.53	6.5%	14%
EVBG	Everbridge	60.21	1,769	1,755	182	26%	1.6%	19%	9.7x	8.1x	na	na	34%	31%	160%	17.69	8.0%	11%
FB	Facebook	175.73	507,371	465,183	69,498	25%	57.5%	21%	6.7x	5.5x	26.3x	19.8x	2%	-8%	2%	4,799.75	1.0%	17%
HDP	Hortonworks	22.32	1,816	1,734	416	22%	na	25%	4.2x	3.3x	53.2x	25.7x	28%	26%	31%	21.98	11.3%	3%
HUBS	HubSpot	143.70	5,575	5,333	620	24%	11.3%	22%	8.6x	7.0x	88.9x	68.8x	16%	19%	96%	64.21	10.0%	6%
INST	Instructure	40.95	1,426	1,310	261	26%	na	24%	5.0x	4.1x	na	na	6%	-5%	38%	17.38	5.7%	10%
LVTF	LiveTiles	0.44	225	212	18	119%	na	77%	11.9x	6.8x	na	na	-8%	44%	185%	0.62	0.0%	52%
MB	MINDBODY	37.10	1,771	1,691	311	25%	4.9%	24%	5.4x	4.4x	na	52.5x	-1%	-6%	57%	22.93	21.6%	4%
NOW	ServiceNow	196.36	34,941	34,049	3,353	29%	27.6%	27%	10.2x	8.0x	36.4x	27.4x	12%	11%	69%	331.88	6.4%	1%
OKTA	Okta	61.83	6,591	6,304	471	32%	na	30%	13.4x	10.3x	na	na	25%	10%	129%	83.40	8.1%	12%
PAYC	Paycom	155.12	9,094	9,075	685	23%	41.4%	21%	13.2x	11.0x	56.3x	46.0x	46%	47%	108%	116.31	13.3%	16%
PCTY	Paylocity	79.44	4,192	4,055	498	21%	28.9%	21%	8.1x	6.7x	43.8x	35.1x	37%	33%	62%	20.89	5.5%	34%
QTWO	Q2 Holdings	62.30	2,671	2,570	295	24%	11.8%	22%	8.7x	7.1x	na	57.6x	5%	9%	53%	17.15	4.3%	2%
RNG	RingCentral	93.15	7,416	7,210	805	23%	12.6%	23%	9.0x	7.3x	na	na	26%	23%	120%	80.30	4.7%	14%
SAIL	SailPoint	30.93	2,711	2,638	290	23%	10.3%	24%	9.1x	7.3x	64.1x	52.3x	28%	19%	0%	36.15	2.9%	9%
SEND	SendGrid	36.27	1,682	1,517	179	25%	12.8%	23%	8.5x	6.9x	na	79.8x	42%	37%	0%	32.96	4.0%	7%
SHOP	Shopify	145.67	15,506	13,932	1,430	38%	6.2%	31%	9.7x	7.5x	na	95.2x	5%	-2%	31%	203.26	11.5%	15%
SNA P	Snap	10.90	13,923	12,370	1,596	38%	na	37%	7.8x	5.6x	na	na	-13%	-4%	-25%	188.61	15.6%	36%
TEAM	Atlassian	90.01	21,181	20,267	1,298	29%	27.5%	26%	15.6x	12.4x	49.2x	41.1x	24%	41%	153%	114.10	8.9%	34%
TWLO	Twilio	80.66	7,860	7,488	745	27%	5.3%	28%	10.0x	7.9x	na	na	39%	49%	175%	177.00	7.8%	13%
TWOU	2U	89.36	5,131	4,667	548	33%	4.7%	33%	8.5x	6.4x	na	na	18%	-6%	78%	59.51	9.0%	1%
WDAY	Workday	154.54	33,381	31,524	3,329	23%	19.9%	22%	9.5x	7.7x	59.7x	46.2x	25%	18%	41%	249.70	9.3%	31%
WIX	Wix.com	111.10	5,372	5,022	758	27%	23.3%	24%	6.6x	5.3x	34.5x	24.5x	17%	28%	71%	65.98	7.4%	3%
YEXT	Yext	24.86	2,451	2,326	299	32%	na	31%	7.8x	6.0x	na	na	18%	62%	91%	28.57	10.8%	22%
ZEN	Zendesk	68.89	7,300	7,061	760	30%	9.5%	29%	9.3x	7.2x	na	59.6x	26%	23%	151%	88.50	4.9%	4%
ZS	Zscaler	42.79	5,118	4,831	281	32%	1.6%	27%	17.2x	13.6x	na	na	21%	63%	0%	46.69	16.3%	53%
Select Faster Growth (2019E Rev. Growth >20%) Median					484	25%	11.8%	24%	6.8x	7.1x	46.5x	49.3x	18%	23%	78%	55.80	7.8%	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

Ticker	Company Name	8/31/18 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	\$227.63	\$1,099,437	1,143,067	\$277,576	4%	30.0%	2%	4.1x	4.0x	20.7x	16.9x	20%	22%	39%	5,660.55	0.9%	0%
ALRM	Alarm.Com	56.29	2,685	2,648	438	12%	22.9%	14%	6.0x	5.3x	41.2x	31.6x	31%	27%	25%	23.50	18.2%	4%
AMBR	Amber Road	8.73	240	255	93	9%	4.8%	na	2.7x	na	45.2x	na	3%	-3%	8%	0.78	1.0%	9%
APPN	Appian	34.93	2,215	2,165	246	15%	na	18%	8.8x	7.5x	na	na	12%	10%	53%	19.07	16.0%	0%
APTI	Appio	38.80	1,730	1,588	271	17%	6.6%	18%	5.9x	4.9x	79.6x	39.3x	16%	17%	118%	16.21	8.4%	20%
ASUR	Asure Software	15.03	229	296	110	17%	23.2%	3%	2.7x	2.6x	28.7x	na	7%	-14%	30%	3.27	21.8%	6%
ATHN	AthenaHealth	153.90	6,233	6,275	1,482	10%	28.5%	11%	4.2x	3.8x	34.2x	21.8x	2%	2%	9%	69.77	4.5%	1%
BCOV	Brightcove	8.20	295	267	181	8%	4.7%	na	1.5x	na	na	na	-4%	-20%	16%	1.50	0.8%	2%
BNFT	Benefitfocus	44.10	1,406	1,481	287	12%	7.5%	15%	5.2x	4.5x	na	75.7x	47%	31%	43%	9.91	15.6%	18%
CLDR	Cloudera	15.01	2,224	1,795	526	19%	na	19%	3.4x	2.9x	na	na	12%	-7%	-23%	19.71	6.7%	3%
CSCO	Cisco	47.77	224,657	203,678	52,214	3%	35.4%	4%	3.9x	3.8x	13.4x	15.1x	13%	12%	48%	968.32	0.9%	0%
CSLT	Castlight Health	3.00	413	344	165	7%	6.5%	18%	2.1x	1.8x	na	22.6x	-9%	-17%	-23%	2.46	6.0%	5%
CSOD	Cornerstone	56.56	3,324	3,222	567	8%	23.3%	16%	5.7x	4.9x	36.8x	23.0x	14%	14%	62%	25.85	2.7%	9%
CTXS	Citrix	114.02	15,468	16,106	3,051	4%	36.1%	6%	5.3x	5.0x	16.4x	15.1x	4%	8%	46%	152.57	8.4%	1%
DATA	Tableau	111.86	9,278	8,366	1,135	16%	4.5%	22%	7.4x	6.1x	48.0x	34.5x	9%	13%	54%	82.30	4.9%	17%
DBX	DropBox	26.85	10,802	9,988	1,591	16%	22.0%	14%	6.3x	5.5x	22.9x	20.2x	0%	-10%	0%	148.60	17.2%	34%
EBAV	eBay	34.61	34,248	39,482	11,646	8%	33.2%	10%	3.4x	3.1x	14.7x	13.0x	3%	-8%	-4%	336.27	2.6%	6%
ECOM	ChannelAdvisor	13.05	356	307	140	7%	7.9%	6%	2.2x	2.1x	34.2x	17.4x	-6%	-12%	13%	1.13	0.8%	5%
EGAN	eGain	14.30	393	389	73	13%	7.5%	na	5.3x	na	26.0x	na	10%	12%	741%	8.05	13.2%	37%
ELLI	Ellie Mae	105.37	3,650	3,407	584	17%	29.8%	16%	5.8x	5.0x	34.9x	29.7x	6%	-1%	27%	48.63	20.9%	2%
ENV	Envestnet	63.20	2,868	3,187	923	13%	19.9%	14%	3.5x	3.0x	25.1x	20.8x	8%	19%	42%	17.66	6.7%	4%
GOGL	GoDaddy	81.46	13,512	15,299	2,972	12%	27.1%	11%	5.1x	4.6x	20.6x	17.6x	11%	14%	82%	145.50	4.0%	0%
GOOGL	Alphabet	1231.80	852,174	753,901	159,882	17%	38.3%	18%	4.7x	4.0x	22.6x	18.8x	0%	12%	29%	2,130.58	0.4%	12%
GWRE	Guidewire	100.57	8,072	7,380	832	18%	21.8%	19%	8.9x	7.4x	43.5x	na	17%	8%	33%	53.89	4.9%	0%
IBM	IBM	146.48	133,702	167,704	80,079	0%	24.9%	0%	2.1x	2.1x	13.6x	13.1x	1%	4%	2%	579.97	1.7%	0%
INTU	Intuit	219.47	56,313	55,035	6,877	9%	37.9%	13%	8.0x	7.1x	25.9x	21.7x	7%	9%	55%	289.29	1.2%	4%
LOGM	LogMeIn	85.95	4,458	4,459	1,274	7%	37.4%	6%	3.5x	3.3x	11.3x	10.4x	6%	-20%	-25%	78.58	5.8%	2%
LPSN	LivePerson	26.90	1,679	1,609	276	12%	10.5%	13%	5.8x	5.2x	na	na	16%	39%	101%	12.78	2.8%	8%
MODN	Model N	17.00	531	532	161	7%	10.5%	na	3.3x	na	32.0x	na	-9%	-5%	25%	4.33	1.5%	16%
MSFT	Microsoft	112.33	861,371	815,210	128,678	10%	42.1%	11%	6.3x	5.7x	21.8x	20.0x	6%	14%	50%	2,619.67	0.6%	1%
ORCL	Oracle	48.58	193,405	187,419	41,558	4%	47.0%	3%	4.5x	4.4x	12.0x	11.3x	2%	4%	-3%	811.30	1.4%	29%
PEGA	Pegasystems	63.70	5,010	4,766	968	9%	12.3%	13%	4.9x	4.4x	31.3x	27.8x	15%	3%	11%	26.21	2.3%	52%
PYPL	PayPal Holdings	92.33	109,288	100,901	17,936	16%	26.0%	17%	5.6x	4.8x	24.3x	21.6x	12%	13%	50%	643.75	1.2%	5%
RST	Rosetta Stone	15.80	360	341	194	12%	4.2%	6%	1.8x	1.7x	na	na	7%	-3%	72%	1.85	1.8%	8%
RP	RealPage	62.40	5,648	5,873	998	15%	28.3%	11%	5.9x	5.3x	29.6x	24.4x	13%	6%	45%	35.15	3.5%	3%
SAP	SAP	119.81	143,010	146,270	30,798	8%	33.9%	8%	4.7x	4.4x	28.7x	24.0x	3%	7%	14%	0.45	0.0%	1%
SPSC	SPS Commerce	98.27	1,717	1,545	268	9%	21.2%	10%	5.8x	5.3x	39.1x	38.4x	15%	32%	61%	16.15	1.2%	1%
SREV	ServiceSource	3.19	293	260	263	6%	10.8%	9%	1.0x	0.9x	30.0x	20.6x	-9%	-24%	-9%	0.83	1.1%	4%
STMP	Stamps.com	248.45	4,511	4,309	657	18%	47.9%	na	6.6x	na	17.3x	na	-5%	-1%	30%	68.95	11.6%	5%
TWTR	Twitter	35.18	26,559	23,594	3,292	13%	37.9%	12%	7.2x	6.4x	33.9x	26.0x	10%	1%	108%	1,021.18	6.9%	10%
ULTI	Ultimate Software	309.67	9,652	9,477	1,351	19%	25.0%	18%	7.0x	6.0x	48.9x	37.6x	12%	18%	54%	75.80	5.8%	4%
UPLD	Upland Software	37.22	802	942	152	7%	36.1%	0%	6.2x	6.2x	25.8x	27.3x	19%	4%	62%	8.02	4.7%	14%
VEEV	Veeva Systems	104.36	14,969	13,959	995	18%	35.5%	17%	14.0x	12.0x	43.0x	36.1x	38%	35%	75%	98.78	3.3%	10%
VRNS	Varonis Systems	73.90	2,159	2,001	315	18%	4.6%	18%	6.4x	5.4x	68.0x	44.2x	24%	-5%	90%	34.18	2.0%	2%
WAGE	WageWorks	53.50	2,121	1,473	542	6%	32.6%	7%	2.7x	2.5x	na	na	1%	13%	-9%	12.76	6.6%	1%
WEB	Web.com Group	27.95	1,352	1,965	766	1%	25.4%	2%	2.6x	2.5x	14.6x	15.0x	11%	43%	10%	15.24	2.5%	4%
WK	Workiva	36.85	1,596	1,534	271	13%	na	12%	5.7x	5.0x	na	58.3x	46%	42%	82%	7.05	3.7%	44%
Select Slower Growth (2019E Rev. Growth < 20%) Median					766	12%	24.9%	12%	5.2x	4.7x	28.7x	21.8x	9%	8%	40%	26.21	3.6%	4%

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

Ticker	Company Name	8/31/18 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																		
ACTA	Actua	\$0.73	\$22	\$5	na	na	na	na	na	na	na	na	-1%	0%	-94%	0.00	0.0%	4%
AKDS	Arkados Group	1.03	39	45	na	na	na	na	na	na	na	na	87%	164%	80%	0.24	0.1%	10%
CCUR	Concurrent	4.90	45	(16)	na	na	na	na	na	na	na	na	-4%	-6%	-22%	0.05	0.4%	43%
CSTI	Costar	11.25	18	26	na	na	na	na	na	na	na	na	11%	32%	2%	0.01	0.0%	0%
CXDO	Crexendo	2.30	33	32	na	na	na	na	na	na	na	na	-10%	-18%	39%	0.01	1.1%	74%
EVOL	Evolving Systems	2.28	28	26	na	na	na	na	na	na	na	na	-13%	-31%	-52%	0.03	0.2%	33%
FNJN	FinJan	4.39	120	55	81	-23%	na	23%	0.7x	0.5x	na	na	10%	51%	77%	2.45	2.7%	3%
GSB	GlobalSCAPE	3.95	87	70	na	na	na	na	na	na	na	na	8%	3%	9%	0.19	0.1%	21%
G SVC	G SV Capital	7.27	149	144	1	-1%	na	na	na	na	na	na	5%	8%	51%	0.55	0.0%	1%
INUV	Inuvo	0.64	21	21	99	13%	4.4%	na	0.2x	na	na	na	-3%	-14%	-37%	0.02	1.3%	15%
IPAS	iPass	2.00	17	15	61	33%	2.7%	14%	0.3x	0.2x	na	2.2x	-40%	-55%	-64%	0.31	2.1%	2%
MFON	Mobivity	1.37	63	60	na	na	na	na	na	na	na	na	19%	30%	41%	0.03	0.0%	21%
MRIN	Junein Software	3.35	19	6	na	na	na	na	na	na	na	na	-40%	-43%	-58%	0.07	3.7%	29%
PYDS	Payment Data Sys	1.91	31	28	30	15%	0.3%	na	0.9x	na	na	na	12%	14%	-19%	0.10	4.4%	45%
SCIL	Scientific	0.65	18	na	na	na	na	na	na	na	na	na	24%	-24%	35%	0.00	0.0%	0%
SHSP	SharpSpring	14.19	121	116	24	29%	na	19%	5.0x	4.2x	na	na	36%	76%	289%	1.25	1.4%	18%
SMSI	Smith Micro	2.48	62	56	na	na	na	na	na	na	na	na	-4%	20%	128%	0.51	17.0%	23%
SPRT	Support.com	2.76	52	3	na	na	na	na	na	na	na	na	0%	-4%	17%	0.05	0.2%	8%
SVVC	First Technology	15.27	112	111	na	na	na	na	na	na	na	na	19%	26%	103%	0.42	0.0%	4%
WSTL	Westell	2.87	45	19	na	na	na	na	na	na	na	na	4%	-1%	0%	0.09	0.3%	32%
Select Micro Caps and Those with No Rev. Estimates Medi					46	14.3%	2.7%	19.2%	0.7x	0.5x	na	2.2x	5%	1%	13%	0.08	0.2%	17%

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