

SaaS Software Cloud Update – December 2017

Public Markets and M&A Activity

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The Navidar SaaS Software Cloud Index advanced an impressive 29% for the full-year 2017 and was flat in December, roughly in line with the NASDAQ. 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 and Navidar events.

IBM (NYSE: IBM -0.4% in December), **RealPage** (NASDAQ: RP -2.3%), and **Bazaarvoice** (NASDAQ: BV +0.0%) – along with 10 privately-held companies participated in Navidar's **ARTIFICIAL INTELLIGENCE IN AUSTIN** conference in December. The well-attended event featured a keynote presentation by IBM Watson's Chief Technology officer as well as panel discussions and an overview of AI. Visit Navidar.com for a summary report and stay tuned for announcements about upcoming events that we are hosting in 2018.

HubSpot (NYSE: HUBS +9.2% in December) – the SaaS marketing and sales provider's stock was able to overcome a negative short report that called out operational issues such as pricing power, partnerships, and cross-selling. After investigating the matters more closely, many investors viewed these concerns as overblown and came away more enthusiastic about HUBS's story, driving the stock up. While the addition of a freemium approach has certainly pressured HUBS's average selling price, it serves to lower customer acquisition cost as the company has been successfully up and cross-selling clients. We also like that HUBS has successfully adopted a multi-product strategy, expanding to salesforce automation from its flagship marketing automation.

Q2 eBanking (NYSE: QTWO -11.9%) – the SaaS digital banking provider's stock declined due to investor concerns about growth and valuation. Due primarily to the law of large numbers, growth has naturally slowed—38% in 2016, ~29% in 2017E, and 23-25% in 2018E. Also, valuation has since come down a bit after December's pullback as 2018E EV/revenue is currently 5.0x, versus the group median of 4.5x. Also, we like that QTWO has a history of operational excellence and has been moving upstream to larger banks and credit unions. The company now has about 30 customers with over \$10 billion in assets, up from just one when it went public in March 2014.

Blackline (NASDAQ: BL -10.6%) – the SaaS accounting/finance automation providers' stock remained under pressure after reporting disappointing 3Q17 results in November. The adoption of ASC 606 (new revenue recognition rules for customer contracts) could be distracting accounting departments from focusing on their BL buying decision, in our opinion, contributing to a slowdown in selling activity. Guidance calls for billings growth to decelerate to 22% YOY in 4Q17 from 54% in 1Q17. That said, we continue to like that BL's solutions optimize its 2,100 customers' accounting/finance operations, including the financial close process, account reconciliation, and intercompany accounting.



Twitter (NYSE: TWTR +16.7%) – following a year of revenue declines, the social media provider is poised to return to growth and plans to produce a profit in 4Q17. We like recent improvements in video/live streaming and double-digit daily average user growth. Also, retweets and “tweet likes” are occurring at twice the rate since TWTR increased character limit to 280 from 140. This has also resulted in more followers and more time spent on the social media platform.

Yext (NYSE: YEXT -15.9%) – after spiking 25% in November, the Internet knowledge listing provider’s stock came under pressure again in December as investors digest its less-than-stellar guidance—the stock has been quite volatile since its April 2017 IPO. There are concerns about upside potential for gross margin because in 3Q17 it stood at 74.7%, which is already near YEXT’s long-term target of 75-80%. Also, investors are concerned about YP’s merger with Dex Media, which will reduce YEXT’s 2018 revenue growth by about one percentage point. Still, we like the company’s 30%-plus growth and ability to connect 100s of third-party maps, apps, search engines, intelligent GPS systems, digital assistants, vertical directories, and social networks.

Okta (NASDAQ: OKTA -12.3%) – the SaaS Identity management provider’s stock decline was due primarily to competitive concerns. Amazon AWS introduced a service that makes it easy to manage single sign-on (SSO) to multiple accounts and applications, building on its IAM (internal identity and access management capabilities) and Cognito (mobile experience) functionality. AWS joins other IaaS leaders, such as Microsoft and Google, that also have this feature. While competitive with OKTA’s SSO offering, the company continues to be differentiated by its 5,000 partner integrations and IaaS/platform independence.

Everbridge (NASDAQ: EVBG +12.2%) – the SaaS critical event response provider added a large state customer, Vermont for \$540,000 over four years, driving the stock higher. This represents its fifth statewide contract won, joining the likes of Connecticut, Florida, and New York. We like that state and local officials are able to use EVBG to notify the public during emergency situations, like roadway interruptions and severe weather.

Appian (NASDAQ: APPN +43.0%) – the low-code and business process management platform-as-a-service (PaaS) provider, which went public in May 2017, announced a new major customer, language-and-content-translator SDL. The company is using APPN to automate and digitize its core language services business. We like that more than 300 customers use APPN to enable subject-matter experts with limited programming skills to directly participate in the application development process. APPN is projected to generate \$234M of revenue in 2019E with subscription growth of 20%.

Faster Growth

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

Ticker	12/31 \$Price	Dec %ch	Ticker	12/31 \$Price	Dec %ch
AMZN	1169.47	-0.6	NOW	130.39	6.0
APPF	41.50	-3.8	OKTA	25.61	-12.3
AYX	25.27	1.2	PAYC	80.33	-2.0
BL	32.80	-10.6	PCTY	47.16	2.2
BOX	21.12	0.4	QTWO	36.85	-11.9
CALD	28.65	-2.1	RNG	48.40	2.7
CLDR	16.52	4.4	SHOP	101.00	-2.7
COUP	31.22	-11.9	SNAP	14.61	6.0
EVBG	29.72	12.2	TEAM	45.52	-2.5
FB	176.46	-0.4	TWLO	23.60	-11.5
HDP	20.11	5.8	TWOU	64.51	0.6
HUBS	88.40	9.2	WDAY	101.74	-1.2
INST	33.10	-4.7	WIX	57.55	4.8
MB	30.45	-6.6	YEXT	12.03	-15.9
MULE	23.26	1.4	ZEN	33.84	0.7

Slower Growth

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

Ticker	12/31 \$Price	Dec %ch	Ticker	12/31 \$Price	Dec %ch
ALRM	37.75	-7.9	GWRE	74.26	-0.2
AMBR	7.34	0.0	IBM	153.42	-0.4
APPN	31.48	43.0	INTU	157.78	0.4
APTI	23.52	5.4	LOGM	114.50	-3.8
ASUR	14.12	-1.7	LPSN	11.50	3.6
ATHN	133.04	0.1	MODN	15.75	-3.1
BNFT	27.00	-0.4	MSFT	85.54	1.6
BSFT	54.90	-0.2	ORCL	47.28	-3.6
BV	5.45	0.0	PEGA	47.15	-6.5
CHUB.K	20.59	-4.1	PYPL	73.62	-2.8
CRM	102.23	-2.0	RP	44.30	-2.3
CSCO	38.30	2.7	SAP	112.32	-0.7
CSLT	3.75	-3.8	SNCR	8.94	-11.0
CSOD	35.33	-4.4	SPSC	48.59	-3.7
CTXS	88.00	0.4	SREV	3.09	7.7
DATA	69.20	-1.6	STMP	188.00	11.6
EBAY	37.74	8.9	TWTR	24.01	16.7
ECOM	9.00	4.7	ULTI	218.23	3.4
EGAN	5.25	47.9	UPLD	21.66	-7.6
ELLI	89.40	1.1	VEEV	55.28	-8.2
ENV	49.85	1.4	VRNS	48.55	-3.5
FNGN	30.30	8.6	WAGE	62.00	-3.4
GDDY	50.28	3.4	WEB	21.80	-5.2
GOOGL	1053.40	1.7	WK	21.40	-1.6

Indexes

(% change in Dec)

Faster SaaS	-0.5	NASDAQ	0.4
Slower SaaS	-0.3	S&P 500	1.0
Others	1.0	Russell2000	-0.8
Overall SaaS	-0.2	S&P Volatility	-2.1

Data source: S&P Capital IQ. 12/31/2017 Prices. 12/1-31/2017 %Change. All investing involves risk, including the risk of losing the entire investment. Prices are subject to change without prior notice.

Twilio (NYSE: TWLO -11.5%) – the cloud-based voice, messaging, and video provider continues to face headwinds. TWLO is modifying its go-to-market and pricing models as well as managing through Uber’s transition to multiple providers (previously exclusivity). It is also battling competitive noise from Vonage and Amazon. That said, we expect TWLO to continue gaining market share from legacy vendors such as Avaya, AT&T, and Verizon.

eGain (NASDAQ: EGAN +47.9%) – the SaaS and on-premise B2C customer engagement solution benefitted from recognition that it has largely completed its transition to SaaS from on-premise software as less than \$1M of perpetual license revenue is expected in fiscal 2018E. EGAN has successfully migrated on-premise customers to SaaS and SaaS revenue growth is expected to accelerate in 2018. We also like its reseller OEM partnership with Cisco (about 13% of revenue) and opportunity to add similar relationships with other vendors.

Coupa (NASDAQ: COUP -11.9%) – while the SaaS spend management provider reported strong 3Q17 results, its beat-and-raise fell short of investors’ expectations given high valuation (currently 5.9x CY2019E revenue, versus the group median of 4.5x). 1Q18 growth is particularly concerning because it has three fewer days than 4Q17, a revenue-recognition headwind due to adoption of ASC 606 as some deferred revenue will be eliminated. That said, we like that Coupa Open Buy provides users with access to Amazon’s Business marketplace, enabling Amazon customers to easily find and subscribe to COUP.

Separately, in December, Coupa acquired Simeno, which creates localized content from third-party-supplier sites to power cross-catalog searches, including content from many of the leading B2B marketplaces. Coupa plans to grow its Open Buy Program with the addition of the marketplaces to deliver a best-in-class cross-catalog search capability that is competitively distinguished. The acquisition also increases COUP’s global footprint to Germany and Switzerland.

More Acquisitions

- **eBay** (NASDAQ: EBAY +8.9%) acquired **Terapeak**, which provides supply, demand, and pricing data to help ecommerce sellers know what to sell, when to sell it and at what price on various marketplaces including eBay. eBay will begin integrating certain functionality from Terapeak into its Seller Hub, which provides data insights to sellers.
- **Apple** (NASDAQ: AAPL -1.5%) acquired **Shazam**. It provides a song-recognition app to boost that will be used to boost AAPL’s music-subscription service. We expect that one of the immediate opportunities will be lead generation because Shazam’s 30 million users are currently directed to Apple Music or Spotify to listen to those songs.

Select Horizontal Companies¹

Ticker	12/31 \$Price	Dec %ch	Ticker	12/31 \$Price	Dec %ch
1PG	0.03	492.0	LVT	0.33	62.3
APPN	31.48	43.0	MFON	1.20	4.3
APTI	23.52	5.4	MRIN	10.95	15.3
ASUR	14.12	-1.7	MSFT	85.54	1.6
AYX	25.27	1.2	MULE	23.26	1.4
BCOV	7.10	-4.1	NOW	130.39	6.0
BL	32.80	-10.6	OKTA	25.61	-12.3
BNFT	27.00	-0.4	ORCL	47.28	-3.6
BOX	21.12	0.4	PAYC	80.33	-2.0
CALD	28.65	-2.1	PCTY	47.16	2.2
CCUR	5.76	-5.0	PEGA	47.15	-6.5
CHUB.K	20.59	-4.1	PYDS	2.53	11.5
CLDR	16.52	4.4	PYPL	73.62	-2.8
COUP	31.22	-11.9	RNG	48.40	2.7
CRM	102.23	-2.0	SAP	112.32	-0.7
CSCO	38.30	2.7	SHSP	4.40	1.0
CSOD	35.33	-4.4	SMSI	2.84	24.0
CTXS	88.00	0.4	SNAP	14.61	6.0
DATA	69.20	-1.6	SPRT	2.42	1.3
EGAN	5.25	47.9	SREV	3.09	7.7
EVBG	29.72	12.2	TEAM	45.52	-2.5
FNJN	2.16	-5.7	TWLO	23.60	-11.5
GDDY	50.28	3.4	ULTI	218.23	3.4
GOOGL	1053.40	1.7	UPLD	21.66	-7.6
GSB	3.55	-2.7	VRNS	48.55	-3.5
HDP	20.11	5.8	WAGE	62.00	-3.4
HUBS	88.40	9.2	WDAY	101.74	-1.2
IBM	153.42	-0.4	WEB	21.80	-5.2
INLX	0.18	19.3	WK	21.40	-1.6
INTU	157.78	0.4	YEXT	12.03	-15.9
LOGM	114.50	-3.8	ZEN	33.84	0.7
LPSN	11.50	3.6			

Select Vertical Companies²

Ticker	12/31 \$Price	Dec %ch	Ticker	12/31 \$Price	Dec %ch
ACTA	15.60	0.6	GSVC	5.45	-14.2
AKDS	0.56	-25.3	GWRE	74.26	-0.2
ALRM	37.75	-7.9	INST	33.10	-4.7
AMBR	7.34	0.0	INUV	0.81	-12.9
AMZN	1169.47	-0.6	IPAS	0.52	-18.8
APPF	41.50	-3.8	MB	30.45	-6.6
ATHN	133.04	0.1	MODN	15.75	-3.1
BSFT	54.90	-0.2	QTWO	36.85	-11.9
BV	5.45	0.0	RP	44.30	-2.3
CAFN	0.13	-34.2	RST	12.47	2.3
COYN	0.01	-60.1	SCIL	0.52	57.6
CSLT	3.75	-3.8	SHOP	101.00	-2.7
CSTI	9.40	-3.6	SNCR	8.94	-11.0
CXDO	2.10	7.7	SPSC	48.59	-3.7
EBAY	37.74	8.9	STMP	188.00	11.6
ECOM	9.00	4.7	SVVC	8.96	5.8
ELLI	89.40	1.1	TWOU	64.51	0.6
ENV	49.85	1.4	TWTR	24.01	16.7
EVOL	4.70	3.3	VEEV	55.28	-8.2
FB	176.46	-0.4	WIX	57.55	4.8
FNGN	30.30	8.6	WSTL	3.75	-8.1

Indexes

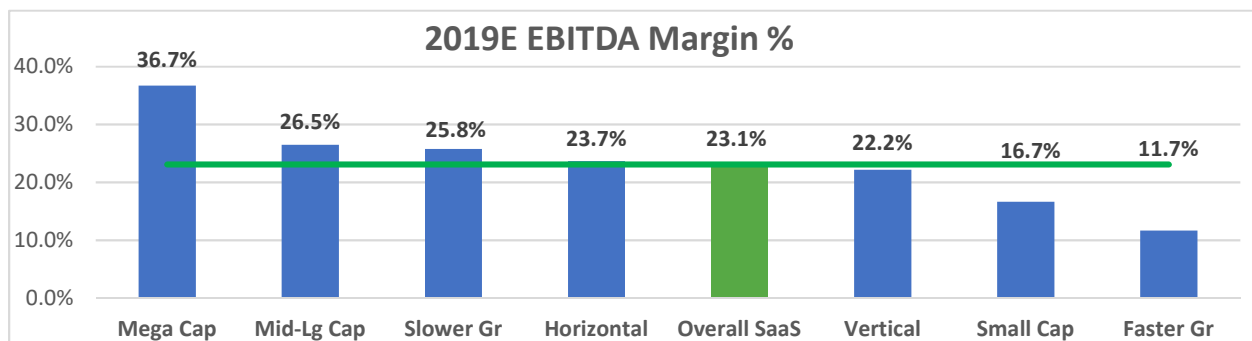
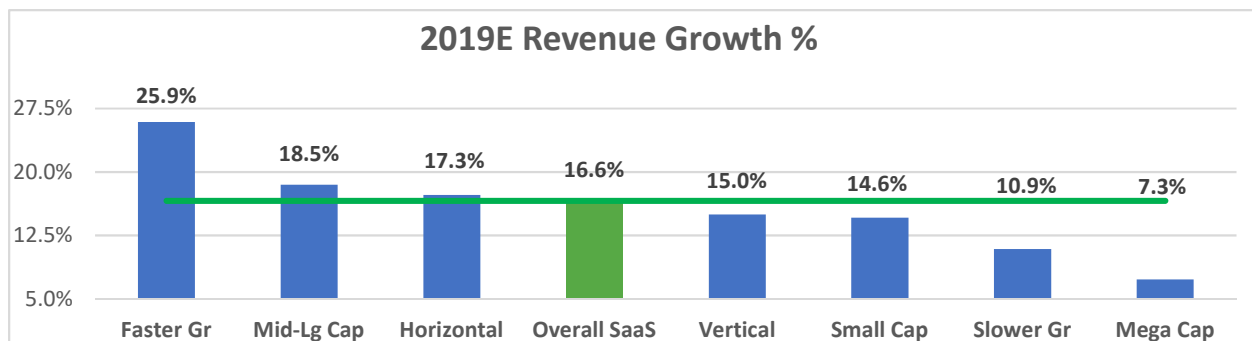
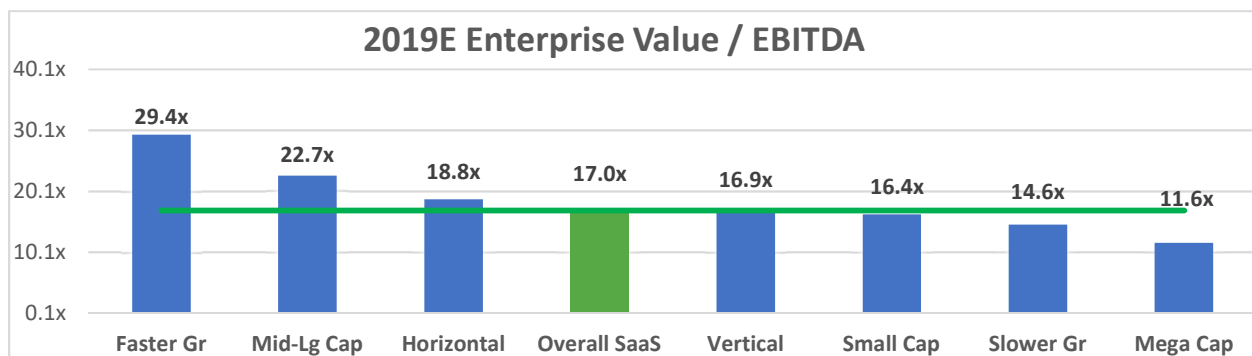
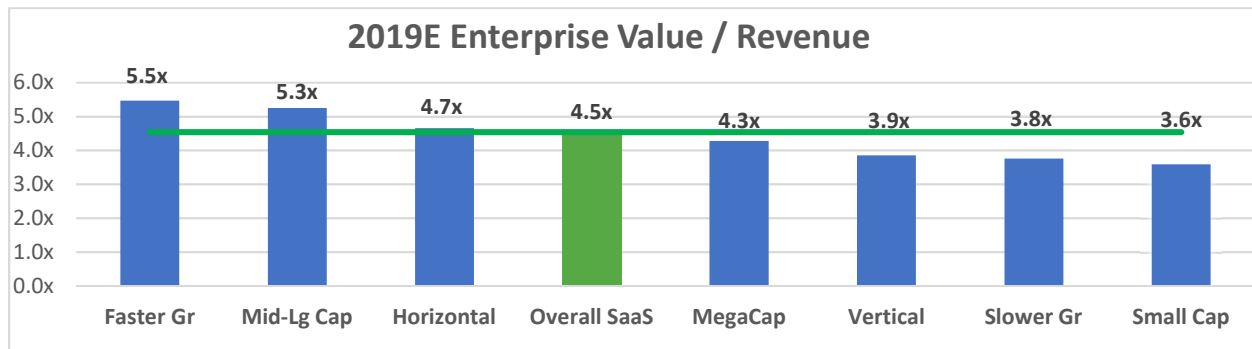
(% change in Dec)

Horizontal SaaS	0.4	NASDAQ	0.4
Vertical SaaS	-0.5	S&P 500	1.0
Overall SaaS	-0.2	Russell2000	-0.8
		S&P Volatility	-2.1

¹ Horizontal companies provide software that can

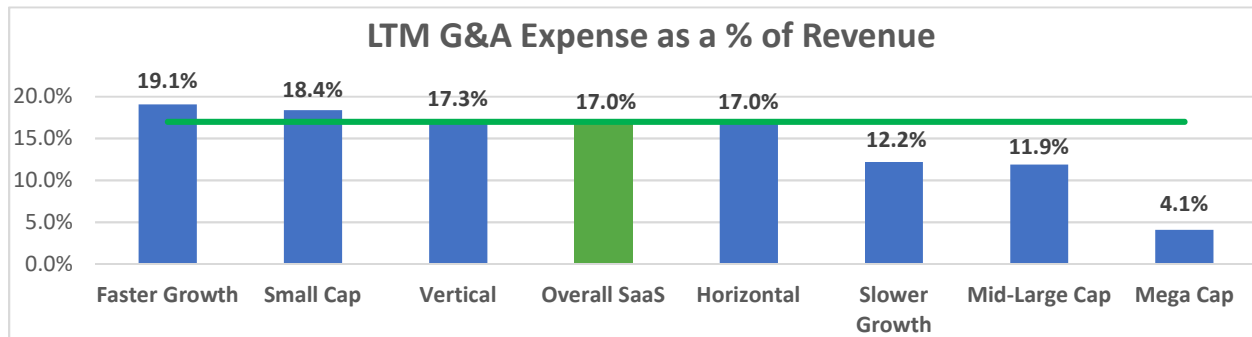
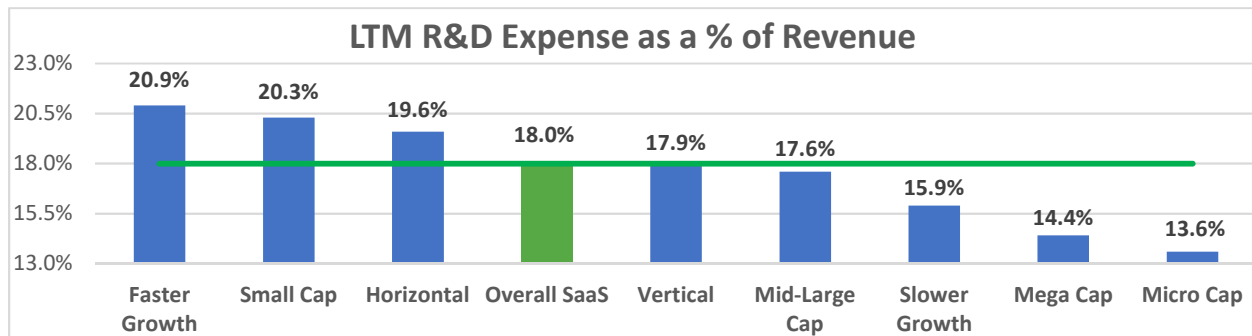
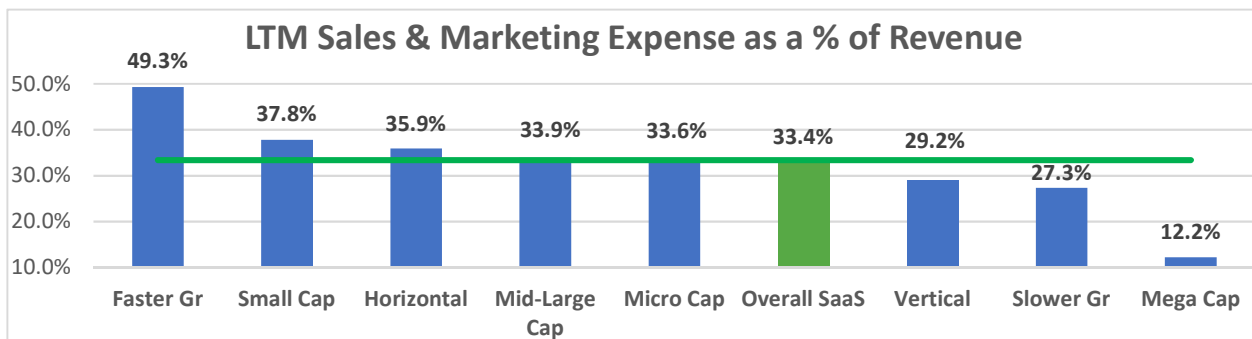
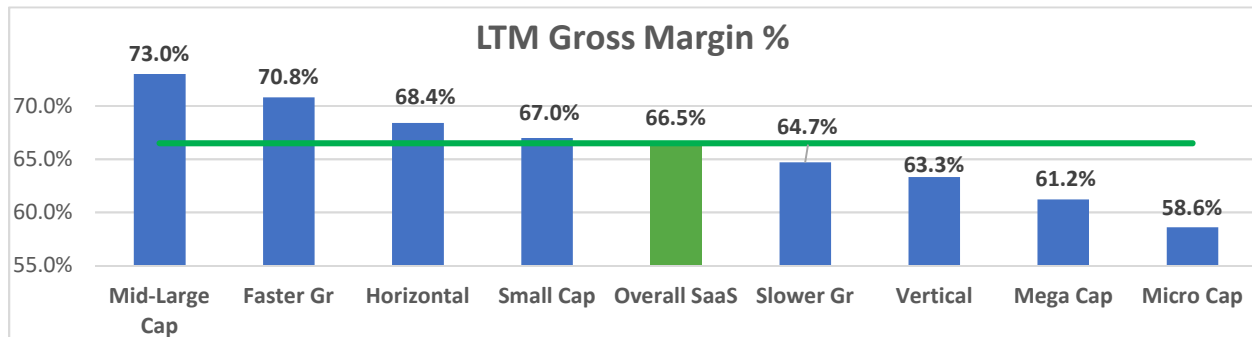
² Vertical companies provide software for specific
Data source: S&P Capital IQ. 12/31/2017 Prices.

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	1/15/18 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	\$1,305.20	\$628,940	647,816	\$275,848	21%	12.2%	19%	2.3x	2.0x	29.8x	25.0x	11%	30%	60%	4,375.74	1.3%	16%
APPF	AppFolio	42.55	1,444	1,401	232	28%	29.3%	na	6.0x	na	na	na	1%	-16%	90%	5.31	3.6%	45%
AYX	Alteryx	26.97	1,596	1,439	233	33%	na	na	6.2x	na	56.6x	na	-3%	29%	0%	17.69	7.5%	21%
BL	BlackLine	34.90	1,845	1,736	286	28%	5.6%	na	6.1x	na	77.7x	na	0%	4%	30%	12.37	3.9%	7%
BOX	Box	22.25	3,029	2,941	764	22%	7.7%	na	3.8x	na	33.9x	na	5%	10%	32%	48.23	5.3%	5%
CALD	CallidusCloud	30.25	2,060	1,884	361	21%	17.7%	20%	5.2x	4.3x	46.2x	na	4%	19%	76%	12.62	1.9%	2%
CLDR	Cloudera	18.14	2,562	2,172	569	24%	na	24%	3.8x	3.1x	na	62.3x	4%	15%	0%	41.04	7.0%	3%
COUP	Coupa	34.00	1,872	1,652	279	23%	1.6%	na	5.9x	na	78.6x	na	4%	-5%	34%	16.71	5.2%	1%
EVBG	Everbridge	32.24	911	863	161	23%	5.0%	23%	5.4x	4.3x	64.2x	na	12%	20%	70%	12.66	9.0%	12%
FB	Facebook	179.37	521,215	482,926	67,674	26%	59.5%	23%	7.1x	5.8x	23.2x	18.2x	0%	3%	40%	3,102.63	1.0%	18%
HDP	Hortonworks	21.34	1,505	1,442	401	23%	28.6%	26%	3.6x	2.9x	30.9x	na	7%	29%	129%	14.05	5.5%	5%
HUBS	HubSpot	92.65	3,462	3,264	585	24%	9.6%	na	5.6x	na	71.7x	23.3x	2%	12%	80%	49.60	12.7%	7%
INST	Instructure	34.25	1,036	969	253	26%	na	na	3.8x	na	na	44.1x	0%	0%	63%	5.39	7.3%	11%
MB	MINDBODY	33.10	1,546	1,336	287	26%	13.9%	23%	4.7x	3.8x	46.7x	na	3%	18%	33%	14.53	16.7%	7%
MULE	MuleSoft	24.40	3,171	2,990	515	30%	na	na	5.8x	na	na	81.5x	5%	6%	0%	39.51	6.9%	7%
NOW	ServiceNow	138.19	23,866	23,351	3,223	28%	28.3%	32%	7.2x	5.5x	26.0x	18.9x	7%	13%	65%	209.35	6.5%	2%
OKTA	Okta	27.00	2,752	2,528	447	33%	na	na	5.7x	na	96.0x	na	4%	-2%	0%	32.13	7.1%	12%
PAYC	Paycom	88.75	5,171	5,139	674	24%	31.4%	22%	7.6x	6.2x	36.6x	na	9%	11%	82%	46.84	16.0%	19%
PCTY	Paylocity	49.64	2,607	2,509	496	22%	20.8%	na	5.1x	na	39.2x	na	4%	-1%	48%	13.82	3.2%	35%
QTWO	Q2 Holdings	37.90	1,579	1,491	299	25%	11.2%	25%	5.0x	4.0x	76.5x	na	0%	-11%	26%	8.43	2.7%	2%
RNG	RingCentral	52.35	4,049	3,877	755	23%	8.5%	na	5.1x	na	na	47.9x	7%	20%	133%	24.19	1.8%	18%
SHOP	Shopify	112.80	11,266	10,340	1,281	34%	8.9%	33%	8.1x	6.1x	na	46.4x	7%	20%	135%	141.21	7.9%	17%
SNAP	Snap	14.11	16,992	14,710	2,001	55%	na	41%	7.4x	5.2x	na	na	-10%	-14%	0%	270.56	16.6%	36%
TEAM	Atlassian	52.57	11,872	11,258	1,219	27%	na	na	9.2x	na	29.0x	na	12%	33%	95%	46.67	8.3%	36%
TWLO	Twilio	26.16	2,434	2,150	598	24%	1.6%	na	3.6x	na	na	na	3%	-20%	-6%	42.89	18.9%	13%
TWOU	2U	69.32	3,620	3,435	527	33%	5.1%	37%	6.5x	4.8x	na	40.8x	6%	16%	99%	28.55	13.8%	2%
WDAY	Workday	112.90	23,709	21,971	3,270	23%	18.6%	20%	6.7x	5.6x	41.3x	31.9x	9%	3%	40%	250.59	10.8%	35%
WIX	Wix.com	61.90	2,814	2,606	704	26%	23.4%	23%	3.7x	3.0x	16.6x	13.4x	6%	-10%	22%	33.03	7.6%	3%
YEXT	Yext	12.06	1,100	987	299	33%	na	30%	3.3x	2.5x	na	na	-2%	-3%	0%	8.24	11.1%	25%
ZEN	Zendesk	37.51	3,808	3,581	710	28%	6.5%	43%	5.0x	3.5x	50.3x	30.1x	10%	25%	51%	25.27	3.5%	4%
Select Faster Growth (2019E Rev. Growth >20%) Median					548	26%	11.7%	24%	5.5x	4.3x	43.7x	31.9x	4%	11%	61%	30.34	7.0%	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	1/15/18 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)																		
ALRM	Alarm.Com	36.43	1,717	1,705	437	14%	23.1%	13%	3.9x	3.4x	37.1x	26.5x	-2%	-25%	26%	27.22	4.1%	3%
AMBR	Amber Road	\$7.43	\$202	217	\$97	11%	6.7%	na	2.2x	na	48.1x	na	1%	-12%	-21%	0.96	2.5%	16%
APPN	Appian	36.76	2,223	2,151	234	20%	na	na	9.2x	na	na	na	76%	55%	0%	28.61	31.5%	0%
APTI	Apptio	24.42	986	851	247	15%	7.0%	na	3.4x	na	68.1x	25.7x	7%	33%	47%	9.81	7.1%	16%
ASUR	Asure Software	14.87	185	234	85	8%	24.2%	na	2.7x	na	30.3x	na	5%	19%	35%	2.30	24.1%	9%
ATHN	AthenaHealth	129.47	5,181	5,335	1,491	11%	26.3%	14%	3.6x	3.1x	na	na	-5%	12%	7%	46.71	10.7%	1%
BNFT	Benefitfocus	25.75	805	870	323	15%	12.1%	19%	2.7x	2.3x	52.6x	34.8x	-5%	-19%	-19%	4.06	19.8%	18%
BSFT	BroadSoft	54.85	1,743	1,583	488	13%	na	na	3.2x	na	20.9x	14.8x	0%	3%	26%	57.53	16.8%	1%
BV	Bazaarvoice	5.50	473	408	226	4%	16.6%	8%	1.8x	1.7x	14.2x	11.3x	0%	11%	22%	11.20	0.5%	2%
CHUB.K	CommerceHub	20.06	890	882	145	13%	45.3%	13%	6.1x	5.4x	19.0x	15.6x	-8%	-9%	39%	2.34	0.3%	6%
CRM	salesforce.com	110.24	79,626	78,586	14,952	19%	23.2%	19%	5.3x	4.4x	24.9x	21.8x	5%	14%	46%	502.24	2.2%	5%
CSCO	Cisco	40.87	202,046	166,383	50,302	3%	33.6%	na	3.3x	na	12.1x	na	7%	22%	36%	894.97	1.0%	0%
CSLT	Castlight	4.30	575	493	194	19%	6.5%	28%	2.5x	2.0x	11.7x	10.1x	10%	-1%	8%	1.40	7.5%	6%
CSOD	Cornerstone	39.17	2,268	2,205	558	10%	20.2%	8%	4.0x	3.7x	20.4x	na	12%	0%	-6%	20.50	7.9%	9%
CTXS	Citrix	90.04	13,567	13,480	2,972	3%	31.6%	3%	4.5x	4.4x	14.1x	17.5x	3%	11%	-2%	131.44	3.9%	1%
DATA	Tableau	74.52	5,942	4,999	1,073	14%	11.8%	16%	4.7x	4.0x	26.5x	30.5x	6%	-4%	65%	47.69	8.1%	22%
EBAY	eBay	38.02	39,715	43,683	10,967	7%	36.1%	5%	4.0x	3.8x	15.1x	13.9x	-1%	-1%	26%	340.89	3.1%	6%
ECOM	ChannelAdvisor	9.45	251	198	146	8%	9.1%	6%	1.4x	1.3x	16.3x	13.2x	2%	-24%	-37%	1.51	1.0%	9%
EGAN	eGain	5.70	155	154	66	9%	na	na	2.3x	na	na	na	21%	68%	171%	1.08	0.3%	37%
ELLI	Ellie Mae	96.38	3,329	2,962	586	19%	30.1%	na	5.1x	na	36.0x	na	4%	11%	17%	31.95	12.5%	2%
ENV	Envestnet	53.90	2,388	2,598	908	15%	21.3%	12%	2.9x	2.6x	18.4x	15.7x	6%	0%	44%	12.53	3.2%	4%
FNGN	Financial Engin	29.60	1,874	1,676	561	9%	33.7%	2%	3.0x	2.9x	12.1x	11.3x	3%	-20%	-19%	16.03	9.3%	1%
GDDY	GoDaddy	51.43	6,982	9,122	2,824	11%	27.7%	11%	3.2x	2.9x	13.3x	11.9x	5%	16%	46%	73.99	4.7%	0%
GOOGL	Alphabet	1130.65	782,646	686,467	152,974	17%	39.8%	15%	4.5x	3.9x	18.6x	16.3x	5%	12%	36%	1,660.40	0.5%	12%
GWRE	Guidewire	77.35	5,941	5,380	781	16%	24.0%	na	6.9x	na	29.7x	na	4%	-1%	44%	50.68	5.9%	0%
IBM	IBM	163.14	151,034	185,291	78,711	0%	25.0%	2%	2.4x	2.3x	15.4x	14.9x	7%	11%	-3%	756.78	1.6%	0%
INTU	Intuit	164.51	42,057	42,155	6,493	9%	36.3%	10%	6.5x	5.9x	20.8x	na	3%	13%	40%	226.65	1.0%	5%
LOGM	LogMeIn	121.00	6,369	6,093	1,218	6%	39.7%	5%	5.0x	4.7x	14.9x	13.6x	2%	4%	21%	59.76	5.2%	2%
LPSN	LivePerson	12.55	747	693	254	9%	11.5%	na	2.7x	na	56.8x	25.0x	2%	-15%	61%	4.93	1.7%	8%
MODN	Model N	15.90	469	468	164	9%	7.3%	na	2.8x	na	21.6x	na	1%	9%	76%	4.30	1.5%	20%
MSFT	Microsoft	89.60	691,227	646,567	119,246	8%	42.4%	9%	5.4x	5.0x	16.9x	15.9x	3%	16%	43%	2,002.44	0.5%	1%
ORCL	Oracle	49.51	204,952	194,480	42,216	4%	47.4%	na	4.6x	na	12.2x	na	3%	2%	26%	829.48	1.0%	27%
PEGA	Pegasystems	50.30	3,916	3,722	1,029	15%	15.1%	19%	3.6x	3.0x	31.0x	25.4x	3%	-16%	27%	15.23	4.3%	52%
PYPL	PayPal Holding	80.54	96,802	86,196	17,976	17%	26.6%	20%	4.8x	4.0x	19.4x	19.0x	6%	17%	94%	736.68	1.5%	5%
RP	RealPage	48.45	4,016	4,304	918	11%	27.8%	10%	4.7x	4.3x	24.8x	22.3x	6%	13%	67%	22.35	4.9%	5%
SAP	SAP	110.58	132,579	133,289	32,774	7%	33.7%	9%	4.1x	3.7x	21.6x	18.3x	-3%	-2%	24%	0.56	0.0%	1%
SNCR	Synchronoss	9.58	455	579	371	-8%	17.5%	na	1.6x	na	12.3x	na	6%	-32%	-75%	8.40	23.4%	9%
SPSC	SPS Commerce	50.31	867	703	270	11%	16.8%	na	2.6x	na	26.1x	na	5%	-15%	-29%	7.63	2.4%	0%
SREV	ServiceSource	3.43	309	271	255	5%	10.8%	na	1.1x	na	80.4x	na	13%	-3%	-38%	1.13	3.2%	4%
STMP	Stamps.com	192.80	3,370	3,335	615	15%	47.7%	na	5.4x	na	13.9x	na	8%	-12%	61%	66.31	13.9%	6%
TWTR	Twitter	25.41	18,794	16,309	2,788	9%	34.5%	9%	5.8x	5.4x	28.0x	25.2x	14%	36%	47%	445.01	5.8%	11%
ULTI	Ultimate Softw	226.28	6,760	6,632	1,317	18%	25.3%	16%	5.0x	4.3x	41.3x	32.8x	4%	14%	12%	61.58	9.8%	5%
UPLD	Upland Softwa	23.03	478	517	128	5%	36.5%	na	4.0x	na	16.4x	na	5%	8%	120%	6.70	1.3%	15%
VEEV	Veeva Systems	58.37	8,250	7,492	952	18%	32.8%	16%	7.9x	6.8x	25.3x	na	4%	-1%	31%	68.21	3.6%	20%
VRNS	Varonis	52.05	1,449	1,321	293	17%	8.1%	13%	4.5x	4.0x	39.1x	22.5x	9%	16%	79%	15.37	2.0%	1%
WAGE	WageWorks	61.25	2,428	1,780	579	10%	33.1%	na	3.1x	na	na	na	1%	-4%	-16%	16.80	9.7%	0%
WEB	Web.com Grou	24.00	1,170	1,828	817	4%	27.0%	0%	2.2x	2.2x	11.0x	12.7x	6%	-4%	23%	6.28	4.8%	4%
WK	Workiva	21.80	914	856	267	14%	na	16%	3.2x	2.8x	42.2x	na	1%	-2%	59%	3.16	4.1%	43%
Select Slower Growth (2019E Rev. Growth < 20%) Media					600	11%	25.8%	12%	3.8x	3.8x	20.9x	16.9x	4%	3%	27%	21.43	4.1%	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	1/15/18 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	1500%	3536%	-34%	0.00	0.0%	9%
ACTA	Actua	\$15.85	\$476	459	na	na	na	na	na	na	na	na	2%	1%	9%	2.35	1.0%	9%
AKDS	Arkados Group	\$0.56	\$12	23	na	na	na	na	na	na	na	na	-12%	-15%	-56%	0.02	0.0%	20%
BCOV	Brightcove	7.10	246	224	na	na	na	na	na	na	na	na	1%	-1%	-11%	0.96	1.6%	2%
CAFN	Cachet	0.08	1	(3)	na	na	na	na	na	na	na	na	-45%	-84%	-98%	0.00	0.0%	33%
CCUR	Concurrent	5.68	56	18	na	na	na	na	na	na	na	na	0%	-2%	6%	0.15	0.9%	26%
COYN	COPsync	0.02	0	1	na	na	na	na	na	na	na	na	-9%	-58%	-97%	0.00	0.0%	12%
CSTI	Costar	10.00	14	23	na	na	na	na	na	na	na	na	6%	-5%	3%	0.01	0.0%	0%
CXDO	Crexendo	3.03	43	42	na	na	na	na	na	na	na	na	29%	78%	109%	0.01	0.0%	75%
EVOL	Evolving Syster	5.35	67	69	na	na	na	na	na	na	na	na	16%	15%	23%	0.14	0.2%	35%
FNJN	FinJan	2.30	64	48	na	na	na	na	na	na	na	na	1%	3%	68%	0.56	0.3%	3%
GSB	GlobalSCAPE	3.81	82	69	na	na	na	na	na	na	na	na	9%	-12%	-11%	0.33	0.0%	21%
GSVC	GSV Capital	7.92	169	240	na	na	na	na	na	na	na	na	38%	34%	47%	1.55	0.0%	1%
INLX	Intellinetics	0.18	3	5	na	na	na	na	na	na	na	na	16%	-33%	-81%	0.00	0.0%	56%
INUV	Inuvo	0.89	25	28	na	na	na	na	na	na	na	na	6%	5%	-45%	0.14	1.4%	18%
IPAS	iPass	0.48	32	25	na	na	na	na	na	na	na	na	-3%	-26%	-70%	0.24	1.5%	3%
LVT	LiveTiles	0.35	147	144	16	68%	na	na	8.8x	na	na	na	41%	53%	295%	0.31	0.0%	59%
MFON	Mobivity	1.12	41	42	na	na	na	na	na	na	na	na	0%	-10%	32%	0.04	0.0%	19%
MRIN	Junein Softwar	10.75	61	34	na	na	na	na	na	na	na	na	-5%	-25%	-35%	0.12	1.8%	29%
PYDS	Payment Data !	2.29	31	29	na	na	na	na	na	na	na	na	-20%	39%	30%	1.07	1.9%	57%
RST	Rosetta Stone	12.60	281	243	na	na	na	na	na	na	na	na	-4%	25%	47%	1.57	1.1%	4%
SCIL	Scientific Learr	0.58	14	na	na	na	na	na	na	na	na	na	16%	38%	5%	0.02	0.0%	0%
SHSP	SharpSpring	4.94	42	35	na	na	na	na	na	na	na	na	20%	16%	-10%	0.42	1.0%	20%
SMSI	Smith Micro So	2.74	39	39	na	na	na	na	na	na	na	na	-10%	53%	59%	0.29	3.5%	40%
SPRT	Support.com	2.60	49	(1)	na	na	na	na	na	na	na	na	6%	11%	8%	0.12	0.2%	10%
SVVC	First Technolog	10.09	75	68	na	na	na	na	na	na	na	na	13%	24%	28%	0.38	0.0%	8%
WSTL	Westell	3.75	58	34	na	na	na	na	na	na	na	na	-4%	33%	43%	0.34	0.1%	33%
Select Micro Caps and Those with No Rev. Estimates Me					16	na	na	na	na	na	na	na	2%	5%	6%	0.15	0.1%	19%

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