NAVIDAR®

SaaS Software Cloud Update - October 2017

Public Markets and M&A Activity

The Navidar SaaS Software Cloud Index advanced 4.4% in October and 29.4% in 2017 through the end of the month, compared with the NASDAQ's +3.6% and +25.0%, 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.

NICE (NASDAQ: NICE +2.5% in October) acquired Workflex – WorkFlex's innovative and proprietary workforce engagement SaaS solution provides significant strategic benefits to multinational enterprise customers. It addresses two of the most burning challenges facing customer service organizations – creating high workforce engagement and lowering attrition, and responding in real-time to changing customer needs. Its intelligent automation technology maximizes scheduling flexibility, optimizes intraday performance, and reduces administrative overhead. Workflex is integrated with NICE's market leading Adaptive WFO (workforce optimization) solution. Navidar represented Workflex as its sell-side M&A advisor for this transaction.

Ivalua acquired Directworks — Directworks developed a market leading direct materials sourcing SaaS solution that provides a better way for highly engineered product manufacturers to work collaboratively across teams and with suppliers to develop, launch, and deliver more profitable products. Directworks will be folded into Ivalua's leading global Spend Management solution. Navidar represented Directworks as its sell-side M&A advisor for this transaction.

Microsoft (NASDAQ: MSFT +11.7% in October) – the software titan announced that its commercial cloud business reached \$20B of annualized recurring revenue in calendar 3Q17, achieving this goal a quarter earlier than expected. Total revenue of \$23.6B (up 6%) and EPS of \$0.72 (down 5%) in 3Q17 exceeded expectations as Dynamics 365 grew 69% YOY, Office 365 commercial sales increased 42%, and Azure cloud services also performed well.

MSFT acquired AltspaceVR, a free virtual reality (VR) social network accessible through VR headsets, such as Oculus and htcVIVE. It hosts virtual events such as stand-up comedy and presidential debate-watching parties. While the network was temporarily closed in July after a loss in funding, MSFT plans to revive and build AltspaceVR into "the world's preeminent mixed reality community." Outside of VR, artificial intelligence (AI) is another fast-growth area that MSFT is investing in. It has acquired about 18 AI technology companies over the past few years.

Shopify (NYSE: SHOP -14.6%) — the ecommerce platform's stock was under pressure in October after a short-report compared SHOP's advertising practices to the "get rich quick" ads that got Herbalife in trouble with the FTC. Fueling concerns is that 3Q17 gross merchandise volume growth slowed a bit to 69% from 74% the prior quarter and management does not plan to provide 2018 guidance until February 2018, indicating some uncertainty with forecasting. But, offsetting a bit of the pressure, SHOP reported strong 3Q17 results as revenue of \$172M grew 72% YOY and exceeded expectations and it achieved non-GAAP EPS profitability a quarter earlier than expected. Also, the stock was up an impressive 132% in 2017 through October, despite this month's pull back.

Note that Navidar is hosting the "Artificial Intelligence in Austin" event on December 14th at The Capital Factory in Austin. A dozen publicly-traded and venture-backed companies will present on their Al initiatives. For more information and to register, please visit www.Navidar.com.

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Amazon (NASDAQ-AMZN +15.0%) – the e-commerce and data-services titan reported above-consensus revenue and GAAP EPS, which drove the stock higher. Revenue of \$43.7B increased 34% YOY, accelerating from the mid-20%s in the first half of 2017. AWS sales rose 42% to \$4.6B and Whole Foods contributed \$1.3B. Operating cash flow of \$17.1B increased 14% YOY. AMZN will account for nearly half of all U.S. e-commerce sales in 2017, according to eMarketer.

Atlassian (NASDAQ: TEAM +37.6%) – the IT team collaboration provider reported excellent CY3Q17 results. Revenue of \$193.8M grew 42% YOY and EPS of \$0.12 exceeded expectations. Management said that demand is the highest it has been since its December 2015 IPO. Besides general strength in demand, TEAM's enterprise customers are adopting its Data Center and Server products.

Apptio (NASDAQ: APTI +31.3%) — the IT business management SaaS provider reported strong 3Q17 results with accelerating growth. Revenue of \$47M grew 16% YOY and EPS of -\$0.02 exceeded Street consensus. The stronger-than-expected results were driven by improved net retention rates and a record quarter of new wins as well as healthy upselling and spend under management expansion. APTI also experienced early traction with its new ITFM (IT financial management) offering, representing an expansion from its core IT audience into the finance department.

Twitter (NYSE: TWTR +22.2%) — the social networking platform reported better-than-expected 3Q17 results. Although revenue of \$590M fell 4% YOY, it exceeded Street consensus due to increasing user engagement as monthly average users grew 4% to 330M. TWTR said that it expects to return to growth by 2018, due in part to its data and enterprise solutions business, which represented 15% of total revenue grew 22% in the quarter, somewhat offsetting pressure on the advertising business (8% decline in the period). Furthermore, despite aggressive spend to add new content and services, non-GAAP EPS of \$0.10 also exceeded consensus.

Mind Body (NASDAQ: MB +24.8%) – the spa and wellness vertical SaaS platform reported strong 3Q17 results. Revenue of \$46.6M grew 32% and EPS of \$0.01 exceeded expectations. While subscribers of 59,000 grew just 1%, average monthly revenue per subscriber of \$259 increased 27% and payments volume of \$2B advanced 23%. MB also experienced improvement in its API business.

Mulesoft (NYSE: MULE +16.1%) – the big-data integration platform reported strong 3Q17 results. Revenue advanced 57% YOY to \$77.6M, exceeding expectation while EPS was a penny shy due to higher-than-expected bonuses to its sales team (a good problem to have). MULE is competing effectively against TIBCO, IBM, Oracle, and Red Hat.

Faster Growth

(2018E growth > 20%, excluding micro-caps)

	10/31	Oct		10/31	Oct
Ticker	\$Price	%ch	Ticker	\$Price	%ch
AMZN	1105.28	15.0	MULE	23.39	16.1
APPF	45.90	-4.3	NOW	126.37	7.5
ASUR	11.28	-9.2	OKTA	28.92	2.5
AYX	22.59	10.9	PAYC	82.20	9.7
BL	35.52	4.1	PCTY	53.41	9.4
BOX	21.95	13.6	QTWO	42.55	2.2
CLDR	15.13	-9.0	SHOP	99.49	-14.6
COUP	34.75	11.6	TEAM	48.37	37.6
CSLT	3.85	-10.5	TWLO	31.95	7.0
EVBG	26.64	0.8	TWOU	63.63	13.5
FB	180.06	5.4	WDAY	110.99	5.3
HDP	16.51	-2.6	WIX	69.80	-2.9
HUBS	86.55	3.0	YEXT	11.48	-13.6
INST	34.80	5.0	ZEN	31.00	6.5
MB	32.25	24.8			

Slower Growth

(2018E growth < 20%, excluding micro-caps)

Ticker	10/31 \$Price	Oct %ch	Ticker	10/31 \$Price	Oct %ch
ACTA	15.45	1.0	INTU	151.02	6.2
ALRM	46.68	3.3	LOGM	121.05	10.0
AMBR	7.46	-2.9	LPSN	14.05	3.7
APTI	24.25	31.3	MODN	14.55	-2.7
ATHN	127.88	2.8	MSFT	83.18	11.7
BCOV	8.00	11.1	ORCL	50.90	5.3
BNFT	27.40	-18.6	PEGA	58.30	1.1
BSFT	54.85	9.0	PYPL	72.56	13.3
BV	4.83	-2.5	RP	43.30	8.5
CALD	25.35	2.8	RST	10.17	-0.4
CRM	102.34	9.5	SAP	113.71	3.9
CSCO	34.15	1.5	SNCR	11.33	21.4
CSOD	38.36	-5.5	SPSC	49.16	-13.3
CTXS	82.61	7.5	SREV	3.48	0.6
DATA	81.09	8.3	STMP	224.40	10.7
EBAY	37.64	-2.1	TWTR	20.62	22.2
ECOM	11.25	-2.2	ULTI	202.59	6.9
ELLI	89.95	9.5	UPLD	21.97	3.8
ENV	53.40	4.7	VEEV	60.94	8.0
FNGN	36.10	3.9	VRNS	43.60	4.1
GDDY	46.70	7.3	WAGE	63.75	5.0
GOOGL	1033.04	6.1	WEB	24.10	-3.6
GWRE	79.98	2.7	WK	22.35	7.2
IBM	154.06	6.2			

Indexes

(% change in Oct)

Faster SaaS	5.3	NASDAQ	3.6
Slower SaaS		S&P 500	2.2
Others		Russell2000	0.8
Overall SaaS	4.4	S&P Volatility	7.0

Data source: S&P Capital IQ. 10/31/2017 Prices. 10/1-31/2017 %Change. All investing involves risk, including the risk of losing the entire investment. Prices are subject to change without prior notice.





More M&A Transactions:

- Synchronoss (NASDAQ: SNCR +21.4%) the mobile solution provider announced plans to sell Intralinks to Siris Capital for \$1B.
 Siris had withdrawn its prior offer to purchase all of SNCR for \$835M. After the disposition of Intralinks, SNCR management plans to focus on its communications and media business.
- ServiceNow (NYSE: NOW +7.5%) purchased SkyGiraffe, a provider
 of mobile enablement technology. It will be used to enable
 consumer-like mobile experiences for applications built on
 ServiceNow's Now platform as well as its flagship IT Service
 Management (ITSM) solution. Integration is expected to be
 complete in 2018.
- RealPage (NASDAQ: RP +8.5%) for \$6.2M acquired PEX Software, which is a London-based provider of property management, online leasing, and resident software solutions. PEX serves clients, such as Greystar Europe, in the United Kingdom, European Union, and Australia that manage private rental sector (PRS) and student rental housing properties. The deal will help RP secure a leading market position in the non-U.S. PRS sector
- BroadSoft (NASDAQ: BSFT +9.1%) was acquired by Cisco (NASDAQ: CSCO +1.5%) for \$1.9B, reflecting valuation multiples of 4.4x EV/2018E revenue and 15.5x EV/2018E EBITDA. BSFT provides unified communication-as-a-service (UCaaS) solutions for telecommunication carriers. Its products include business phone systems, PBX, collaboration technologies, and contact center services. With mid-teens revenue growth, BSFT was losing market share to competitors such as RingCentral. Combined, they will provide a suite of collaboration solutions for multiple market segments—CSCO's technology for enterprises and BroadSoft's for small and midsize businesses delivered through service providers.
- Asure Software (NASDAQ: ASUR -9.2%) acquired Associated Data Services, which is another reseller of ASUR's SaaS payroll solution, Evolution HCM, based on its March 2016 purchase of Mangrove software for \$17.3M. Asure plans to continue cross-selling its suite of human capital management and space solutions into this customer base.

Select Horizontal Companies¹

	10/31	Oct		10/31	Oct
Ticker	\$Price	%ch	Ticker	\$Price	%ch
1PG	0.01	127.3	LPSN	14.05	3.7
APTI	24.25	31.3	LVT	0.21	30.9
ASUR	11.28	-9.2	MFON	1.20	20.0
AYX	22.59	10.9	MRIN	14.50	18.4
BCOV	8.00	11.1	MSFT	83.18	11.7
BL	35.52	4.1	MULE	23.39	16.1
BNFT	27.40	-18.6	NOW	126.37	7.5
BOX	21.95	13.6	OKTA	28.92	2.5
CALD	25.35	2.8	ORCL	50.90	5.3
CCUR	6.13	2.2	PAYC	82.20	9.7
CLDR	15.13	-9.0	PCTY	53.41	9.4
COUP	34.75	11.6	PEGA	58.30	1.1
CRM	102.34	9.5	PYDS	2.59	60.9
CSCO	34.15	1.5	PYPL	72.56	13.3
CSOD	38.36	-5.5	SAP	113.71	3.9
CTXS	82.61	7.5	SHSP	4.50	38.5
DATA	81.09	8.3	SMSI	1.65	47.3
EGAN	3.30	22.2	SPRT	2.30	-2.1
EVBG	26.64	8.0	SREV	3.48	0.6
FNJN	2.08	-11.5	TEAM	48.37	37.6
FUEL	0.00	0.0	TWLO	31.95	7.0
GDDY	46.70	7.3	ULTI	202.59	6.9
GOOGL	1033.04	6.1	UPLD	21.97	3.8
GSB	4.05	5.7	VRNS	43.60	4.1
HDP	16.51	-2.6	WAGE	63.75	5.0
HUBS	86.55	3.0	WDAY	110.99	5.3
IBM	154.06	6.2	WEB	24.10	-3.6
INLX	0.24	-20.7	WK	22.35	7.2
INTU	151.02	6.2	YEXT	11.48	-13.6
LOGM	121.05	10.0	ZEN	31.00	6.5

Select Vertical Companies²

	10/31	Oct		10/31	Oct
Ticker	\$Price	%ch	Ticker	\$Price	%ch
ACTA	15.45	1.0	GSVC	5.59	3.3
AKDS	1.18	84.4	GWRE	79.98	2.7
ALRM	46.68	3.3	INST	34.80	5.0
AMBR	7.46	-2.9	INUV	0.84	-15.4
AMZN	1105.28	15.0	IPAS	0.63	-5.3
APPF	45.90	-4.3	MB	32.25	24.8
ATHN	127.88	2.8	MODN	14.55	-2.7
BSFT	54.85	9.0	QTWO	42.55	2.2
BV	4.83	-2.5	RP	43.30	8.5
CAFN	0.40	-61.8	RST	10.17	-0.4
COYN	0.03	-66.7	SCIL	0.35	-22.2
CSLT	3.85	-10.5	SHOP	99.49	-14.6
CSTI	9.15	-0.5	SNCR	11.33	21.4
CXDO	1.90	15.2	SPSC	49.16	-13.3
EBAY	37.64	-2.1	STMP	224.40	10.7
ECOM	11.25	-2.2	SVVC	7.89	-1.4
ELLI	89.95	9.5	TWOU	63.63	13.5
ENV	53.40	4.7	TWTR	20.62	22.2
EVOL	4.65	-4.1	VEEV	60.94	8.0
FB	180.06	5.4	WIX	69.80	-2.9
FNGN	36.10	3.9	WSTL	2.90	-2.4

Indexes

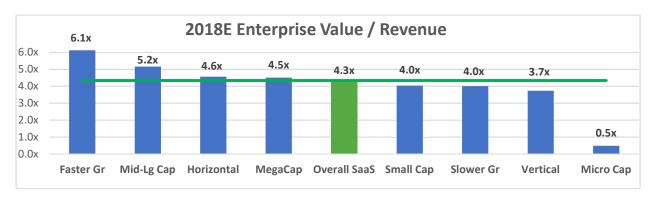
(% change in Oct)													
Horizontal SaaS		NASDAQ	3.6										
Vertical SaaS		S&P 500	2.2										
Overall SaaS	4.4	Russell2000	0.8										
		S&P Volatility	7.0										

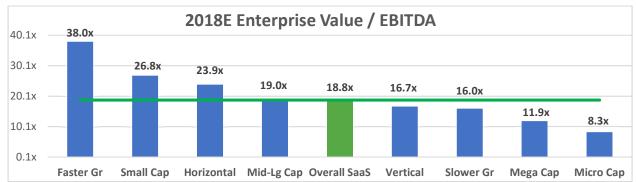
¹ Horizontal companies provide software that can ² Vertical companies provide software for specific Data source: S&P Capital IQ. 10/31/2017 Prices.

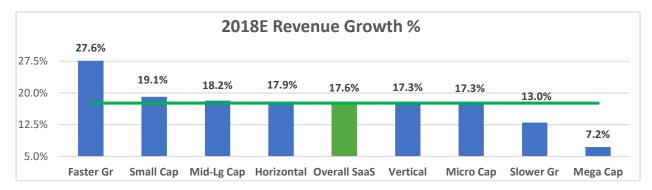


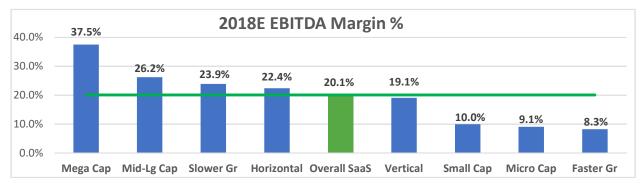


Public Comparisons - Calendar Year (CY) 2018E Metrics - SaaS Software Cloud









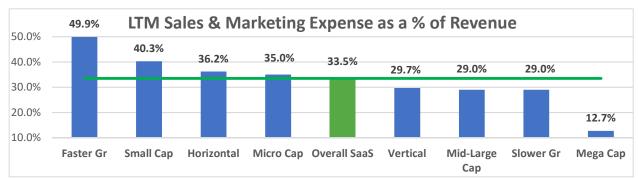
Data Source: S&P Capital IQ | Mega Cap = \$100B+ mcap | Mid-Large Cap = \$3B-\$100B mcap | Small Cap = \$150M-3B mcap | Micro Cap = <\$150M mcap | Fast Growth = 2018E rev gr >20% | Slow Growth = 2018E rev gr <20% | Horizontal = Industry-neutral | Vertical = Industry-specific | Overall SaaS = median | EBITDA = earnings before int., tax, depr., amort.

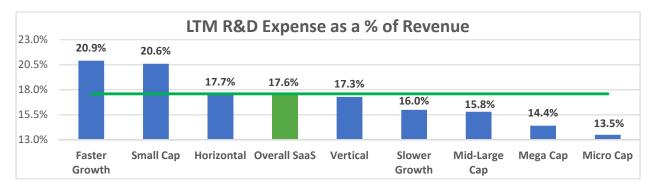


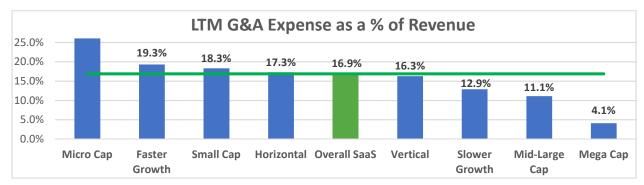


Public Comparisons - Last Twelve Months (LTM) Metrics - SaaS Software Cloud









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)

		11/27/17	Market	Enterprise	2018E	Street	EBITDA	2019E	EV/S	Sales	EV	FCF	Price 9	6 Change	From	60D avg	Short as	Insider Ownership
Ticker	Company Name	Price	Сар	Value (EV)	Sales	Growth	margin	Growth	CY18E	CY19E	CY18E	CY19E	1M	3M	12M	Volume	% of Float	
ast Gro	wth (2018E Reve	nue Grow	th > 20%, c	excluding Mi	cro Caps)													
AMZN	Amazon	\$1,195.83	\$576,237	595,113	\$228,116	29%	11.3%	21%	2.6x	2.2x	34.4x	26.8x	9%	27%	53%	\$4,097.75	1.4%	17%
APPF	AppFolio	43.50	1,477	1,434	181	28%	20.0%	28%	7.9x	6.2x	na	na	-6%	4%	102%	7.42	4.5%	45%
ASUR	Asure Software	14.82	185	233	71	29%	24.7%	24%	3.3x	2.7x	42.4x	28.1x	37%	34%	62%	2.92	15.5%	9%
AYX	Alteryx	27.32	1,616	1,460	176	36%	na	32%	8.3x	6.3x	na	60.2x	23%	20%	0%	10.61	11.5%	21%
BL	BlackLine	38.11	2,015	1,905	224	29%	4.1%	27%	8.5x	6.7x	na	85.3x	8%	29%	42%	7.23	7.2%	20%
BOX	Box	23.01	3,078	2,996	624	23%	3.9%	23%	4.8x	3.9x	75.9x	32.1x	6%	18%	50%	41.76	6.6%	5%
CLDR	Cloudera	16.35	2,277	1,883	453	26%	na	21%	4.2x	3.4x	na	na	10%	-11%	0%	26.82	5.0%	4%
OUP	Coupa	34.91	1,871	1,663	223	25%	na	22%	7.5x	6.1x	na	75.0x	1%	15%	6%	12.41	5.8%	1%
CSLT	Castlight Health	3.85	515	433	164	25%	na	18%	2.6x	2.2x	na	10.3x	-3%	5%	-23%	1.21	9.2%	6%
VBG	Everbridge	27.73	784	736	131	26%	2.9%	23%	5.6x	4.6x	na	54.7x	4%	23%	67%	8.48	2.9%	15%
FB	Facebook	183.03	531,850	493,561	53,389	33%	59.9%	25%	9.2x	7.4x	28.8x	25.1x	3%	10%	52%	2,690.54	1.0%	18%
HDP	Hortonworks	19.92	1,405	1,342	327	27%	na	23%	4.1x	3.3x	na	34.2x	22%	23%	111%	16.04	5.6%	5%
IUBS	HubSpot	80.50	3,008	2,810	473	27%	7.5%	24%	5.9x	4.8x	87.8x	61.7x	-7%	17%	39%	40.02	9.1%	7%
NST	Instructure	35.60	1,059	992	201	29%	na	27%	4.9x	3.9x	na	68.8x	8%	17%	83%	9.06	7.8%	11%
MB	MINDBODY	36.00	1,681	1,471	228	25%	9.1%	26%	6.4x	5.1x	na	54.4x	10%	63%	63%	16.43	24.7%	7%
1ULE	MuleSoft	23.62	3,070	2,888	396	36%	na	30%	7.3x	5.6x	na	na	-2%	15%	0%	32.32	0.0%	7%
NOW	ServiceNow	126.99	21,932	21,417	2,515	31%	25.1%	28%	8.5x	6.6x	32.2x	23.9x	1%	15%	45%	160.62	6.7%	1%
OKTA	Okta	30.83	2,947	2,734	332	36%	na	35%	8.2x	6.1x	na	95.5x	10%	24%	0%	30.58	7.0%	11%
PAYC	Paycom	84.13	4,902	4,870	543	26%	30.7%	24%	9.0x	7.2x	47.6x	34.7x	3%	16%	94%	42.73	22.4%	17%
PCTY	Paylocity	47.38	2,488	2,391	407	22%	20.7%	22%	5.9x	4.8x	57.1x	37.4x	-9%	2%	34%	12.16	5.5%	37%
OWTC	Q2 Holdings	42.80	1,784	1,695	240	24%	8.3%	25%	7.0x	5.7x	na	86.9x	1%	5%	36%	8.11	4.4%	2%
SHOP	Shopify	113.36	11,256	10,330	954	44%	5.1%	34%	10.8x	8.1x	na	na	6%	9%	162%	417.45	5.1%	17%
EAM	Atlassian	51.55	11,642	11,028	960	31%	27.8%	27%	11.5x	9.0x	36.9x	28.4x	10%	49%	88%	65.09	4.1%	36%
WLO	Twilio	25.82	2,402	2,118	481	24%	0.7%	23%	4.4x	3.6x	na	na	-19%	-11%	-26%	44.01	24.4%	14%
WOU	2U	67.29	3,514	3,329	395	39%	4.0%	34%	8.4x	6.3x	na	na	7%	39%	90%	24.80	15.8%	1%
VDAY	Workday	114.94	23,908	22,358	2,640	26%	17.1%	23%	8.5x	6.9x	57.9x	43.0x	6%	11%	37%	152.33	11.6%	35%
WIX	Wix.com	56.35	2,561	2,354	557	31%	19.5%	26%	4.2x	3.3x	22.4x	15.0x	-17%	-6%	9%	37.51	8.1%	3%
YEXT	Yext	13.92	1,256	1,129	226	33%	na	35%	5.0x	3.7x	na	na	18%	9%	0%	4.81	16.8%	25%
ZEN	Zendesk	34.75	3,527	3,301	553	30%	4.8%	28%	6.0x	4.7x	92.2x	51.8x	15%	28%	54%	33.12	5.9%	4%
lect F	aster Growth (201	L8E Rev. G	irowth >20)%) Median	396	29%	10.2%	25%	6.4x	5.1x	45.0x	40.2x	6%	16%	53%	26.82	6.9%	11%

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)

			Market	Enterprise	2018E	Street	EBITDA	2019E	EV/S	ales	EV,	/FCF	Price %	Change	From	60D avg	Short as	Insider
Ticker	Company Name	Price	Сар	Value (EV)	Sales	Growth	margin	Growth	CY18E	CY19E	CY18E	CY19E	1M	3M	12M	Volume	% of Float	Ownership
Slower (Growth (2018E Rev	enue Gro	owth < 20°	%, excluding	Micro Car	os)												
ACTA	Actua	15.55	467	450	149	16%	4.8%	na	3.0x	na	na	na	1%	25%	12%	2.63	2.6%	11%
ALRM	Alarm.Com	\$44.84	\$2,114	2,101	\$382	14%	21.9%	14%	5.5x	4.8x	54.2x	8.3x	-4%	3%	44%	\$19.50	4.1%	3%
AMBR	Amber Road	6.80	185	199	87	10%	3.9%	11%	2.3x	2.1x	na	19.3x	-8%	-8%	-42%	0.45	2.5%	16%
APTI	Apptio	22.76	919	784	215	15%	2.7%	15%	3.7x	3.2x	97.0x	17.2x	19%	34%	17%	9.35	1.9%	22%
ATHN	AthenaHealth	129.60	5,186	5,340	1,347	11%	25.3%	12%	4.0x	3.5x	51.8x	na	0%	-7%	27%	74.94	14.0%	1%
BCOV	Brightcove	7.60	263	242	165	6%	3.3%	na	1.5x	na	na	na	-3%	8%	-11%	1.31	4.1%	2%
BNFT	Benefitfocus	26.55	830	896	282	10%	9.9%	15%	3.2x	2.8x	na	17.0x	-4%	-6%	-6%	5.07	19.9%	17%
BSFT	BroadSoft	54.80	1,734	1,574	432	12%	23.6%	13%	3.6x	3.2x	22.3x	5.7x	0%	27%	28%	77.26	13.8%	1%
BV	Bazaarvoice	5.43	467	402	217	4%	12.3%	4%	1.8x	1.8x	19.1x	7.6x	12%	18%	6%	1.44	1.0%	2%
CALD	CallidusCloud	29.35	1,999	1,823	299	20%	15.5%	21%	6.1x	5.1x	62.2x	8.6x	16%	22%	76%	7.74	3.2%	2%
CRM	salesforce.com	106.58	76,983	75,942	12,524	20%	21.8%	19%	6.1x	5.1x	29.8x	4.0x	6%	13%	45%	446.01	2.7%	5%
CSCO	Cisco	36.87	182,271	146,608	48,958	2%	34.2%	3%	3.0x	2.9x	10.2x	3.6x	7%	17%	23%	650.58	1.2%	0%
CSOD	Cornerstone	37.26	2,157	2,094	513	6%	17.4%	10%	4.1x	3.7x	27.7x	4.7x	-6%	9%	0%	22.29	9.6%	9%
CTXS	Citrix	86.15	12,981	12,894	2,883	2%	32.0%	3%	4.5x	4.3x	14.7x	3.0x	4%	14%	-2%	142.93	3.4%	0%
DATA	Tableau	70.39	5,613	4,670	944	9%	7.9%	14%	4.9x	4.4x	28.7x	5.0x	-11%	-2%	50%	63.25	8.2%	22%
EBAY	eBay	35.99	37,594	41,562	10,250	7%	36.3%	6%	4.1x	3.8x	16.3x	3.5x	-2%	4%	24%	311.54	2.5%	6%
ECOM	ChannelAdvisor	8.75	232	179	135	10%	5.7%	7%	1.3x	1.2x	35.3x	11.1x	-22%	-11%	-41%	0.77	1.9%	9%
ELLI	Ellie Mae	87.98	3,038	2,672	494	20%	27.8%	21%	5.4x	4.5x	40.6x	5.4x	2%	8%	4%	43.42	10.2%	2%
ENV	Envestnet	49.65	2,200	2,410	786	16%	19.6%	14%	3.1x	2.7x	23.4x	6.4x	-7%	15%	27%	11.67	4.5%	3%
FNGN	Financial Engines	27.05	1,713	1,515	512	7%	32.8%	9%	3.0x	2.7x	13.6x	4.4x	-26%	-18%	-24%	12.62	13.3%	1%
GDDY	GoDaddy	50.89	6,450	8,589	2,541	14%	27.6%	11%	3.4x	3.0x	14.3x	3.8x	9%	20%	38%	65.35	5.4%	0%
GOOGL	Alphabet	1072.01	738,614	642,435	130,041	19%	40.2%	17%	4.9x	4.2x	19.0x	3.6x	4%	15%	37%	1,577.52	0.4%	12%
GWRE	Guidewire	81.60	6,268	5,695	666	21%	21.8%	20%	8.5x	7.1x	50.6x	na	5%	13%	39%	39.90	6.4%	0%
IBM	IBM	151.98	140,702	174,959	78,590	0%	25.3%	0%	2.2x	2.2x	14.8x	6.5x	-1%	6%	-7%	747.31	2.4%	0%
INTU	Intuit	154.77	39,567	39,665	5,933	9%	36.8%	9%	6.7x	6.1x	23.9x	3.0x	1%	13%	33%	181.75	1.2%	5%
LOGM	LogMeIn	119.45	6,288	6,012	1,166	14%	38.6%	9%	5.2x	4.7x	17.1x	2.7x	-2%	8%	10%	68.95	5.8%	2%
LPSN	LivePerson	11.25	670	615	234	7%	9.5%	7%	2.6x	2.5x	na	19.2x	-21%	-12%	32%	5.01	0.9%	9%
MODN	Model N	16.50	484	484	151	8%	4.4%	9%	3.2x	2.9x	na	21.7x	15%	23%	88%	3.07	5.1%	20%
MSFT	Microsoft	83.87	647,023	602,363	110,371	9%	40.1%	8%	5.5x	5.1x	17.8x	3.0x	0%	15%	39%	1,634.88	0.7%	1%
ORCL	Oracle	48.88	204,000	190,801	40,402	4%	46.6%	4%	4.7x	4.5x	13.1x	2.8x	-4%	-1%	21%	657.63	0.9%	27%
PEGA	Pegasystems	50.65	3,944	3,749	888	10%	13.1%	14%	4.2x	3.7x	33.7x	7.6x	-12%	-8%	38%	17.82	3.7%	52%
PYPL	PayPal Holdings	77.84	93,557	82,951	15,415	19%	26.1%	17%	5.4x	4.6x	22.4x	3.5x	10%	30%	93%	679.53	2.2%	6%
RP	RealPage	44.40	3,680	3,968	801	19%	25.9%	12%	5.0x	4.4x	29.1x	4.7x	3%	8%	55%	20.40	4.2%	27%
RST	Rosetta Stone	11.83	264	226	188	1%	7.6%	na	1.2x	na	na	na	19%	28%	42%	0.87	1.9%	9%
SAP	SAP	115.84	138,883	139,574	29,960	7%	33.8%	7%	4.7x	4.4x	26.5x	4.9x	2%	10%	36%	0.64	0.0%	1%
SNCR	Synchronoss	11.37	540	664	419	-12%	19.4%	-1%	1.6x	1.6x	29.6x	4.9x	-1%	-31%	-77%	24.00	14.4%	8%
SPSC	SPS Commerce	50.47	869	705	244	11%	15.8%	11%	2.9x	2.6x	35.0x	9.1x	4%	-15%	-26%	9.12	3.0%	0%
SREV	ServiceSource	2.99	270	232	243	3%	8.9%	5%	1.0x	0.9x	na	72.1x	-15%	-18%	-50%	0.81	4.3%	3%
STMP	Stamps.com	179.90	3,144	3,109	533	16%	51.4%	15%	5.8x	5.1x	15.3x	2.2x	-18%	-7%	59%	84.07	17.6%	6%
TWTR	Twitter	21.82	16,139	13,653	2,546	6%	33.1%	8%	5.4x	5.0x	24.3x	4.7x	1%	31%	21%	420.39	8.9%	12%
ULTI	Ultimate Softwar	195.93	5,854	5,725	1,112	19%	24.6%	18%	5.1x	4.3x	42.4x	6.9x	-1%	1%	-7%	59.06	12.4%	5%
UPLD	Upland Software	23.29	484	523	123	26%	35.5%	4%	4.2x	4.1x	20.5x	3.9x	6%	-1%	145%	3.76	0.8%	15%
VEEV	Veeva Systems	62.97	8,855	8,130	804	19%	33.0%	17%	10.1x	8.6x	36.7x	3.0x	6%	13%	36%	64.13	5.4%	20%
VRNS	Varonis Systems	51.05	1,421	1,293	250	19%	5.2%	17%	5.2x	4.4x	60.9x	7.0x	15%	34%	66%	15.04	2.0%	2%
WAGE	WageWorks	63.50	2,517	1,869	526	9%	31.8%	8%	3.6x	3.3x	na	na	-1%	8%	-15%	20.17	8.8%	1%
WEB	Web.com Group	23.05	1,088	1,746	783	4%	26.2%	4%	2.2x	2.1x	11.4x	4.8x	-6%	-3%	38%	6.92	4.7%	4%
WK	Workiva	22.85	958	900	235	14%	na	14%	3.8x	3.4x	98.8x	11.6x	2%	16%	43%	3.19	4.8%	40%
Select S	lower Growth (201	L8E Rev. 0	Growth < 2	20%) Median	533	10%	24.1%	11%	4.1x	3.8x	25.4x	4.9x	0%	8%	27%	20.40	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)

		11/27/17	Market	Enterprise	2018E	Street	EBITDA	2019E	EV/S	ales	EV/	/FCF	Price %	6 Change	From	60D avg	Short as	Insider Ownership
icker	Company Name	Price	Сар	Value (EV)	Sales	Growth	margin	Growth	CY18E	CY19E	CY18E	CY19E	1M	3M	12M	Volume	% of Float	
elect M	icro Cap (<\$150M	mcap)																
1PG	1-PAGE	0.01	1	(23)	na	na	na	na	na	na	na	na	22%	138%	-96%	0.00	0.7%	9%
AKDS	Arkados Group	0.77	17	27	na	na	na	na	na	na	na	na	26%	20%	-27%	0.04	0.0%	19%
CAFN	Cachet	0.17	2	(2)	24	67%	16.3%	na	na	na	na	na	-60%	-84%	-98%	0.03	6.8%	33%
CCUR	Concurrent	6.09	60	22	na	na	na	na	na	na	na	na	-6%	-3%	11%	0.29	1.5%	25%
COYN	COPsync	0.04	1	1	na	na	na	na	na	na	na	na	40%	-71%	-95%	0.00	0.0%	12%
CSTI	Costar	9.75	14	23	na	na	na	na	na	na	na	na	7%	-11%	15%	0.01	0.0%	0%
CXDO	Crexendo	1.87	27	26	na	na	na	na	na	na	na	na	-7%	14%	34%	0.01	1.1%	74%
EGAN	eGain	3.60	98	97	61	5%	4.1%	na	1.6x	na	na	na	18%	106%	53%	0.67	0.2%	36%
EVOL	Evolving Systems	4.25	53	55	na	na	na	na	na	na	na	na	-10%	-13%	6%	0.11	0.1%	35%
FNJN	FinJan	2.23	62	46	31	-44%	53.9%	na	1.5x	na	na	na	16%	-11%	77%	0.40	0.8%	3%
FUEL	Rocket Fuel	2.60	na	na	na	na	na	na	na	na	na	na	0%	0%	30%	0.00	0.0%	0%
GSB	GlobalSCAPE	3.71	80	67	na	na	na	na	na	na	na	na	-7%	-3%	-7%	0.16	0.1%	22%
SSVC	GSV Capital	6.58	140	211	1	8%	na	na	na	na	na	na	16%	42%	28%	0.79	0.0%	1%
NLX	Intellinetics	0.17	3	4	na	na	na	na	na	na	na	na	-33%	-51%	-74%	0.00	0.0%	54%
NUV	Inuvo	1.00	28	31	95	21%	3.4%	na	0.3x	na	na	na	18%	-3%	-19%	0.11	1.5%	18%
IPAS	iPass	0.63	42	35	63	16%	na	na	0.6x	na	na	na	2%	5%	-62%	0.25	1.8%	6%
LVT	LiveTiles	0.19	80	77	9	na	na	68%	8.3x	5.0x	na	na	-6%	29%	74%	0.09	0.0%	59%
1FON	Mobivity	1.06	39	40	na	na	na	na	na	na	na	na	-16%	23%	51%	0.01	0.0%	19%
MRIN	Junein Software	9.40	53	27	na	na	na	na	na	na	na	na	-34%	22%	-45%	0.27	1.4%	29%
PYDS	Payment Data Sy:	2.31	31	29	na	na	na	na	na	na	na	na	60%	58%	28%	2.49	0.8%	60%
SCIL	Scientific Learnin	0.35	8	na	na	na	na	na	na	na	na	na	-3%	-34%	-27%	0.00	0.0%	0%
HSP	SharpSpring	4.25	36	30	17	26%	na	na	1.8x	na	na	na	-6%	15%	-18%	0.43	0.8%	14%
SMSI	Smith Micro Softv	2.00	29	28	na	na	na	na	na	na	na	na	12%	83%	27%	0.18	2.9%	15%
SPRT	Support.com	2.39	45	(5)	na	na	na	na	na	na	na	na	4%	-3%	6%	0.08	0.3%	4%
SVVC	First Technology	8.41	62	56	na	na	na	na	na	na	na	na	6%	13%	3%	0.21	0.0%	8%
_	Westell	4.51	70	46	67	4%	6.0%	na	0.7x	na	na	na	55%	48%	109%	0.24	0.1%	32%
lect M	icro Cap (<\$150M)	Median			31	16%	6.0%	68%	1.5x	5.0x	na	na	4%	13%	6%	0.11	0.8%	19%

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



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