



GP.Bullhound

Global Software Market Perspectives

Q2 2019

Important disclosures appear at the back of this report

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Software Perspectives – Executive Summary

- **GP Bullhound** is a leading technology advisory and investment firm, providing transaction advice and capital to category leaders with a robust focus on Software globally
- We publish this quarterly SaaS market report to provide quantitative insights into public and private market valuations across the transaction spectrum and qualitative insights into company business models, technology and customer trends
- We also feature many of the leading SaaS companies & CEOs across interesting sub-sectors
- Based in our San Francisco office, Jonathan Cantwell is the head of our Software practice with over 15 years of experience and has completed over 50 transactions with public and private tech companies globally
- We have completed 12 Software deals in the last year; several of our recent Software advisory transactions and investments are showcased below



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Appendix C: GP Bullhound Software Report Overview, Software Credentials & Team

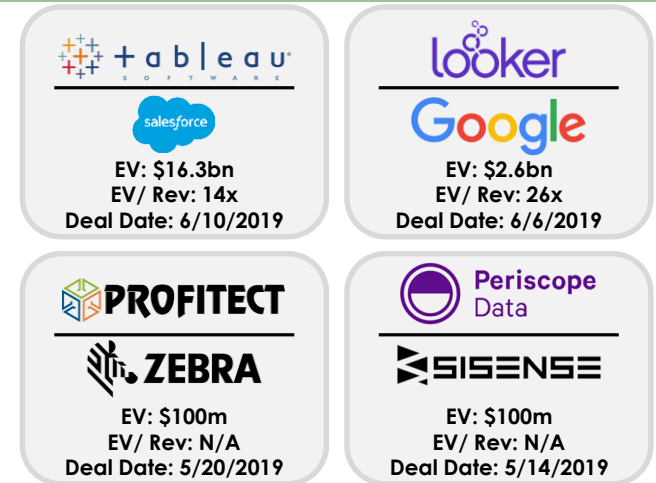
GP Bullhound's Views on Current Trends in Software

- ① *Tech giants double down on business analytics as a core strategy to expand TAM*
- ② *Rise of multi-cloud solutions & infrastructure management*
- ③ *Financial service providers dig deeper to enable true digital transformation*
- ④ *SaaS valuations see increased variance based on quality*
- ⑤ *Convenience and affordability drive Edtech further*
- ⑥ *Accelerating cloud spend in the enterprise*

GP Bullhound's Views on Current Trends in Software

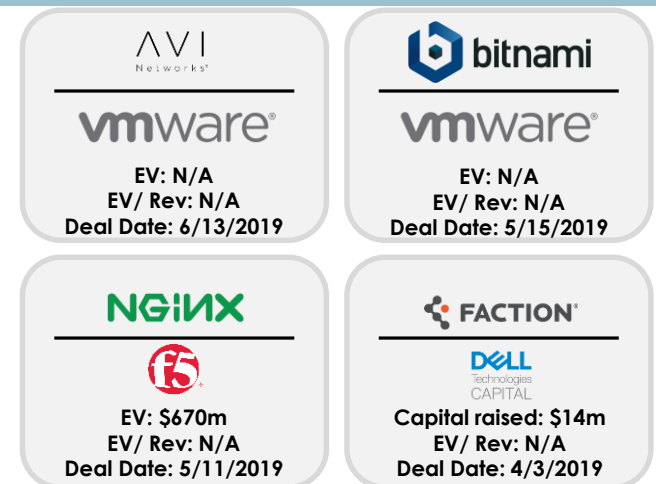
① *Tech giants double down on business analytics as a core strategy to expand TAM*

- Businesses generate and store massive amounts of data in a variety of enterprise applications, but current limitations make it impractical to easily work with and fully realize the value of that data. End users are precluded from quickly running reports and tapping into insights across different data stores, which ultimately negatively impacts customer experience
- In response, enterprise software providers are quickly expanding business analytics capabilities in order to grow market share and offer a one-stop business intelligence tool for customers. This was most recently evidenced by Salesforce and Google's high-profile acquisitions of business intelligence platforms Tableau and Looker
- The trend promises to democratize everyday utilization of data analytics within the enterprise, resulting in better experiences across the board



② *Rise of multi-cloud solutions & infrastructure management*

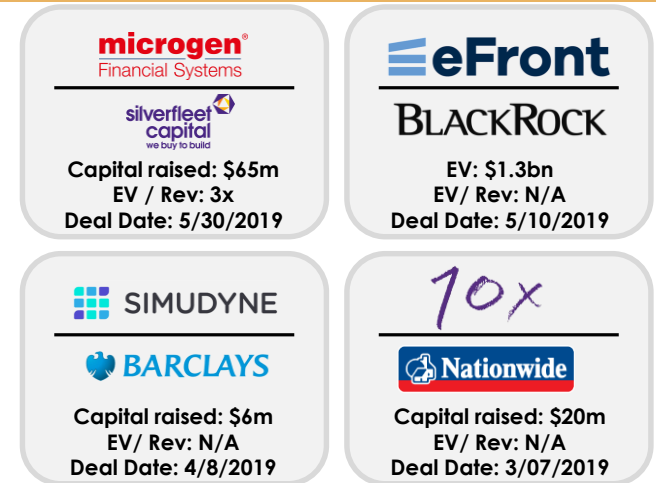
- As businesses mature in their cloud strategy, they are challenged with reducing IT cost, standardizing applications and maintaining security. Now, many companies are beginning to adopt a multi-cloud strategy
- A multi-cloud strategy allows businesses to select different cloud services from a variety of vendors based on the specific business, technical, regulatory and cost requirements
- While a multi-cloud strategy has many advantages, it invariably adds an extra layer of IT management complexity which is increasingly addressed by Cloud Management Platforms. By offering IT managers the flexibility to customize an infrastructure specific to their requirements, businesses can reduce vendor lock-in, enhance security, and provide the level of resilience that is expected to service both internal and customer-facing needs



GP Bullhound's Views on Current Trends in Software (Cont'd)

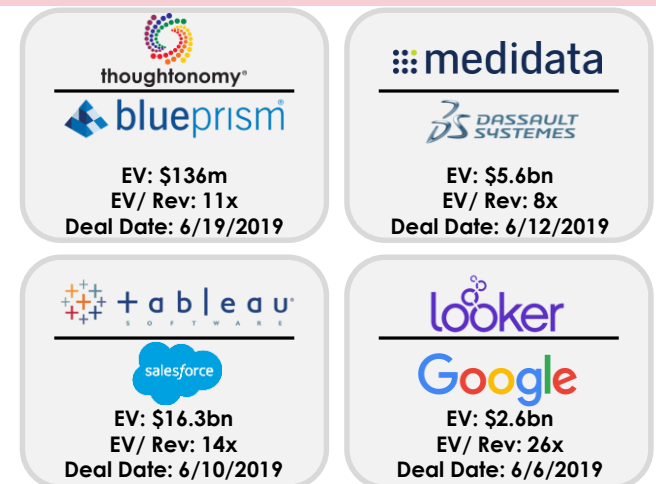
③ *Financial service providers dig deeper to enable true digital transformation*

- Traditional financial service providers are under attack by digital-first fintechs. Digital transformation is a key priority for executives and legacy financial institutions who now realize they must dig deeper to innovate and update the legacy technology stack
- To be able to deliver a customer experience and product fit for the current age, it is not enough to merely tack on new applications and deploy "non-core" business processes in the cloud. Robotic Process Automation (RPA) and the ability to integrate traditionally siloed data stores allow an organization to make informed decisions and drive increased efficiency
- We expect deal activity to accelerate as digital transformation becomes more important to the future success of financial service providers through changing regulation and falling security concerns about cloud deployment



④ *SaaS valuations see increased variance based on quality*

- The public software market is seeing an increasing gap in valuation multiples between the best of breed players in the space and the rest of the constituents merely modeled after a traditional "SaaS" model
- Recurring revenue is now the expectation and investors are placing more emphasis on differentiated businesses with strong margins, solid unit economics, and demonstrable capital efficiency
- Lofty multiples in the public markets and an intense appetite to protect those multiples have enabled incumbents to raise money cheaply and bid up valuations of top performers in the private SaaS M&A market
 - » This valuation environment has made buying innovation more attractive than building it, and we expect to see more marquee deals in Q3








GP Bullhound's Views on Current Trends in Software (Cont'd)

⑤ *Convenience and affordability drive Edtech further*

- The number of adults seeking online education courses is on the rise as traditionally routine tasks increasingly require technical sophistication; however, formal higher education and advanced training programs are costly and time-consuming
- Online learning platforms offer on-demand and low-cost alternatives. Compared to traditional classrooms, online learning provides access to a greater variety of courses that enable job seekers to design a curriculum that is tailored for their specific needs
- The demand for convenient and low-cost education has also attracted substantial capital investment as businesses rethink the development of their human capital and employee job satisfaction









 ADTALEM <small>GLOBAL EDUCATION</small> EV: \$121m EV/ 18A Rev: 4x Deal Date: 6/3/2019	 2U EV: \$750m EV/19 E Rev: 8x Deal Date: 5/22/2019
  Capital raised: \$291m EV/ Rev: N/A Deal Date: 5/16/2019	 ADVANCE PUBLICATIONS EV: \$1.7bn EV/ Rev: 11x Deal Date: 4/30/2019

⑥ *Accelerating cloud spend in the enterprise*

- Cloud pricing is complex, and companies struggle to effectively address their own compute resource needs under current cloud pricing models. This has resulted in a significant amount of wasted cloud spend due to idle or overprovisioned cloud resources
- As a result, managing cloud spend has rapidly become one of the primary pain points and top priorities for businesses as reliance on cloud services continues to increase
- Third-party automated cloud management platforms have entered the market to meet this demand. They promise enhanced visibility into businesses' cloud spend and resource utilization, allowing IT managers to optimize their cloud strategy and reduce unnecessary spend



 FLEXera EV: N/A EV/ Rev: N/A Deal Date: 6/4/2019	  EV: N/A EV/ Rev: N/A Deal Date: 5/31/2019
 turbonomic EV: N/A EV/ Rev: N/A Deal Date: 5/10/2019	  EV: N/A EV/ Rev: N/A Deal Date: 4/18/2019

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Appendix C: GP Bullhound Software Report Overview, Software Credentials & Team


Notable Software M&A Deals & Private Financings

(Q2 2019)

Selected M&A Transactions

Announce Date	Target	Buyer	Target Description	Value (\$m)	Implied EV/LTM Rev
Jun 19	 thoughtonomy	 blueprism	SaaS based robotic process automation	136	10.6x
Jun 12	 medidata	 DASSAULT SYSTEMES	Cloud-based solutions for clinical development programs	5,593	8.5x
Jun 10	 tableau	 salesforce	Data visualization and data analysis software platform	16,309	13.7x
Jun 6	 looker	 Google	Developer of a business intelligence and big data analytics platform	2,600	26.0x
May 29	 Twistlock	 paloalto NETWORKS	Developer of a comprehensive cloud native security platform	410	-
May 29	 drawbridge	 LinkedIn	Developer of identity management platform	-	-
May 15	 bitnami	 vmware	Cloud hosting platform that simplifies the management of multi-cloud	-	-
May 14	 Periscope Data	 SISENSE	Data visualization and analytics platform	100	-
May 11	 NGINX	 f5	Developer of an open sourced enterprise application platform	670	-
Apr 17	 MapAnything	 salesforce	Map-based workflow application	262	-
Apr 11	 kyriba	 Bridgepoint	Cloud-base treasury and cash management	1,200	10.9x
Apr 1	 TELEMATICS	 BRIDGESTONE	Provider of fleet management solutions for transport, healthcare, etc.	1,021	-
Median				10.9x	

Selected Private Financings

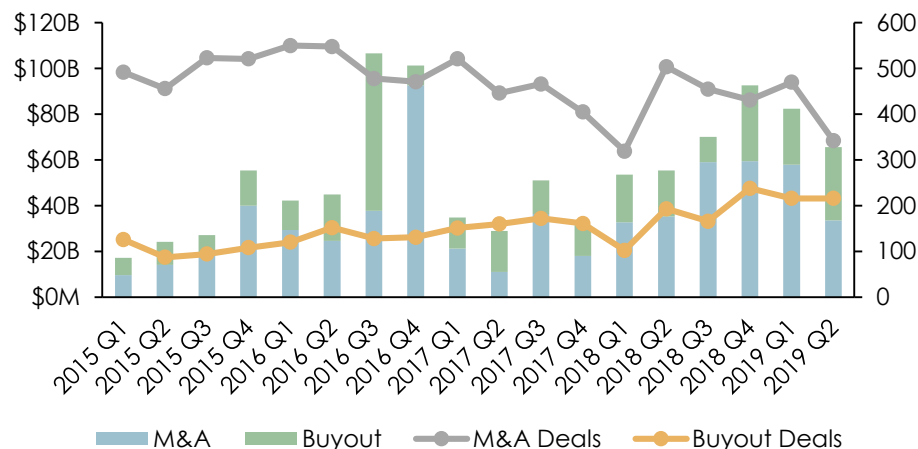
Announce Date	Issuer	Lead Investor	Issuer Description	Capital Raised (\$m)
Jun 20	 druva	 Viking Capital Investors LP	SaaS based data protection and management platform	130
Jun 12	 KnowBe4	 KKR	Provider of security awareness training	72
Jun 5	 Allyo	 SAPPHIRE PARTNERS	Online recruitment platform	45
Jun 4	 SentinelOne	 INSIGHT PARTNERS	AI-based endpoint security solution	120
May 30	 BlueVoyant	 fiserv	Analytics-driven cybersecurity	83
May 20	 WAGESTREAM	 Northzone	Wage Management Platform	51
May 8	 sumologic	 Battery	Data Analytics Platform	110
May 6	 carta	 ANDREESSEN HOROWITZ	Digital ownership and equity management platform	300
Apr 23	 KEEP TRUCKIN	 GREENOAKS CARRINGTON	Electronic fleet management platform	149
Apr 16	 Outreach	 LONE PINE CAPITAL	Sales engagement platform	114
Apr 8	 KLAVIYO	 SUMMIT PARTNERS	Online marketing platform	150
Apr 5	 FLEXPOR	 SoftBank Group	SaaS freight forwarding platform	1000
Apr 2	 Segment	 Accel	Customer data platform	175

Source: Capital IQ, Pitchbook

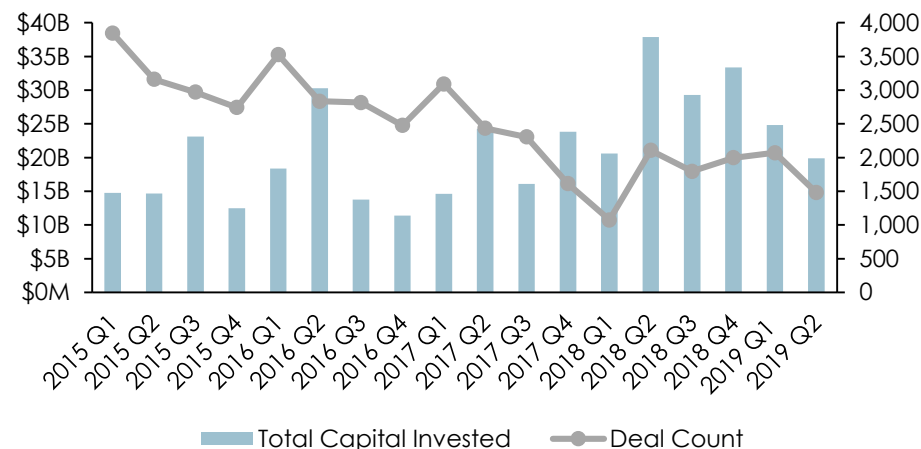
Global Software Transaction Trends

M&A and Private Placement Activity by Quarter

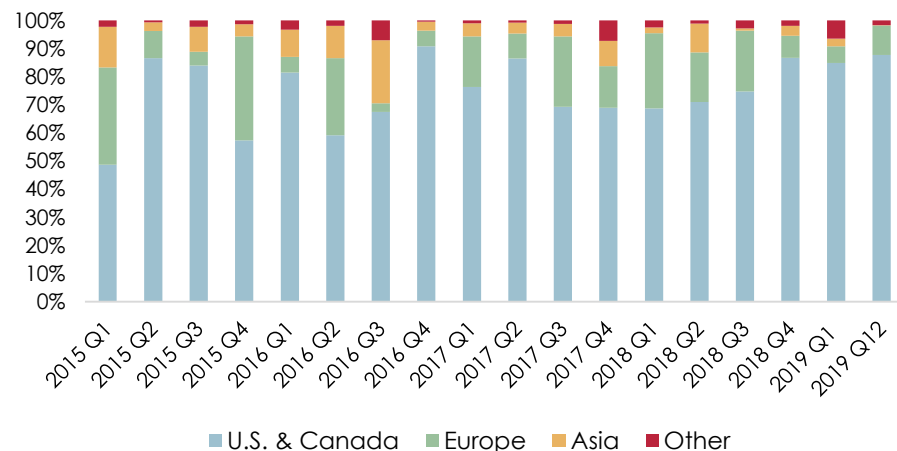
Transaction Deal Value & Buyout Volume Up YoY



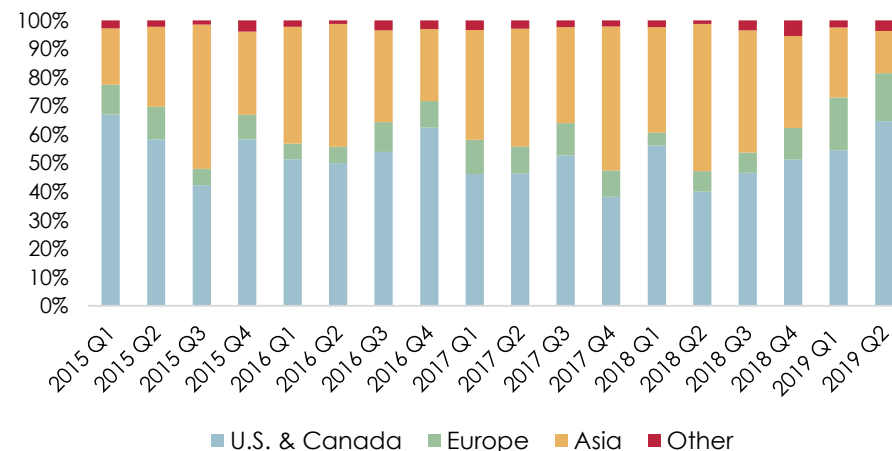
Private Placement Deal Volumes Declined



The US and Europe Continue to Dominate M&A Deal Volume



Private Placement Deal Volume Declining in Asia



Software IPOs

Listed in 2019



- **Description (HKG:2013):** Developer of CRM software designed to help businesses to build m-commerce platforms on WeChat
- **Listing Date:** 01/15/2019
- **Offering Amount:** \$107.8m
- **Offering Price/Share:** \$0.36
- **% Change/IPO Price:** 84.0%
- **LTM Revenue:** \$125.8m
- **LTM EV/Revenue:** 13.7x
- **Selected Metrics:**
 - 2.7m registered merchants
 - Paying customers: +50,000



- **Description (NYSE:PD):** Operations performance platform delivering visibility and actionable intelligence across the entire incident lifecycle
- **Listing Date:** 04/11/2019
- **Offering Amount:** \$218m
- **Offering Price/Share:** \$24.00
- **% Change/IPO Price:** 96.0%
- **LTM Revenue:** \$130.1m
- **LTM EV/Revenue:** 24.9x
- **Selected Metrics:**
 - Net dollar retention: 140%
 - Customer base: 11,000



- **Description (NASDAQ:ZM):** Cloud-native video conferencing platform
- **Listing Date:** 04/18/2019
- **Offering Amount:** \$751.3m
- **Offering Price/Share:** \$36.00
- **% Change/IPO Price:** 146.6%
- **LTM Revenue:** \$392.4m
- **LTM EV/Revenue:** 59.9x
- **Selected Metrics:**
 - 50,800 customers with 10+ employees
 - 30% of customers generate \$100k+ in revenue



- **Description (NASDAQ:ZM):** Cloud-native enterprise collaboration platform
- **Listing Date:** 06/18/2019
- **Offering Amount:** Direct listing
- **Offering Price/Share:** \$26.00
- **% Change/IPO Price:** 44.2%
- **LTM Revenue:** \$454.5m
- **LTM EV/Revenue:** 43.0x
- **Selected Metrics:**
 - 10m+ daily active users
 - 88k+ paid customers
 - Net dollar retention rate 138%

Filed in Q2 2019



- **Description (NYSE:DT):** Software performance monitoring intelligence
- **Listing Date:** TBD
- **Offering Amount:** \$300m proposed
- **Offering Price/Share:** TBD
- **LTM Revenue:** \$431.0m
- **Selected Metrics:**
 - 1,364 paying customers
 - \$403m ARR
 - Net dollar retention rate 140%



- **Description (NYSE:MDLA):** Customer experience management SaaS
- **Listing Date:** TBD
- **Offering Amount:** \$300m proposed
- **Offering Price/Share:** TBD
- **LTM Revenue:** \$290.7m
- **Selected Metrics:**
 - 565 customers
 - \$263m subscription revenue
 - Net dollar retention rate 119%



- **Description (NYSE:PHR):** Healthcare provider patient registration and payment platform
- **Listing Date:** TBD
- **Offering Amount:** \$150m proposed
- **Offering Price/Share:** TBD
- **LTM Revenue:** \$104.3m
- **Selected Metrics:**
 - \$54k average revenue per provider
 - \$1,446m patient payment volume
 - Net dollar retention rate 107%



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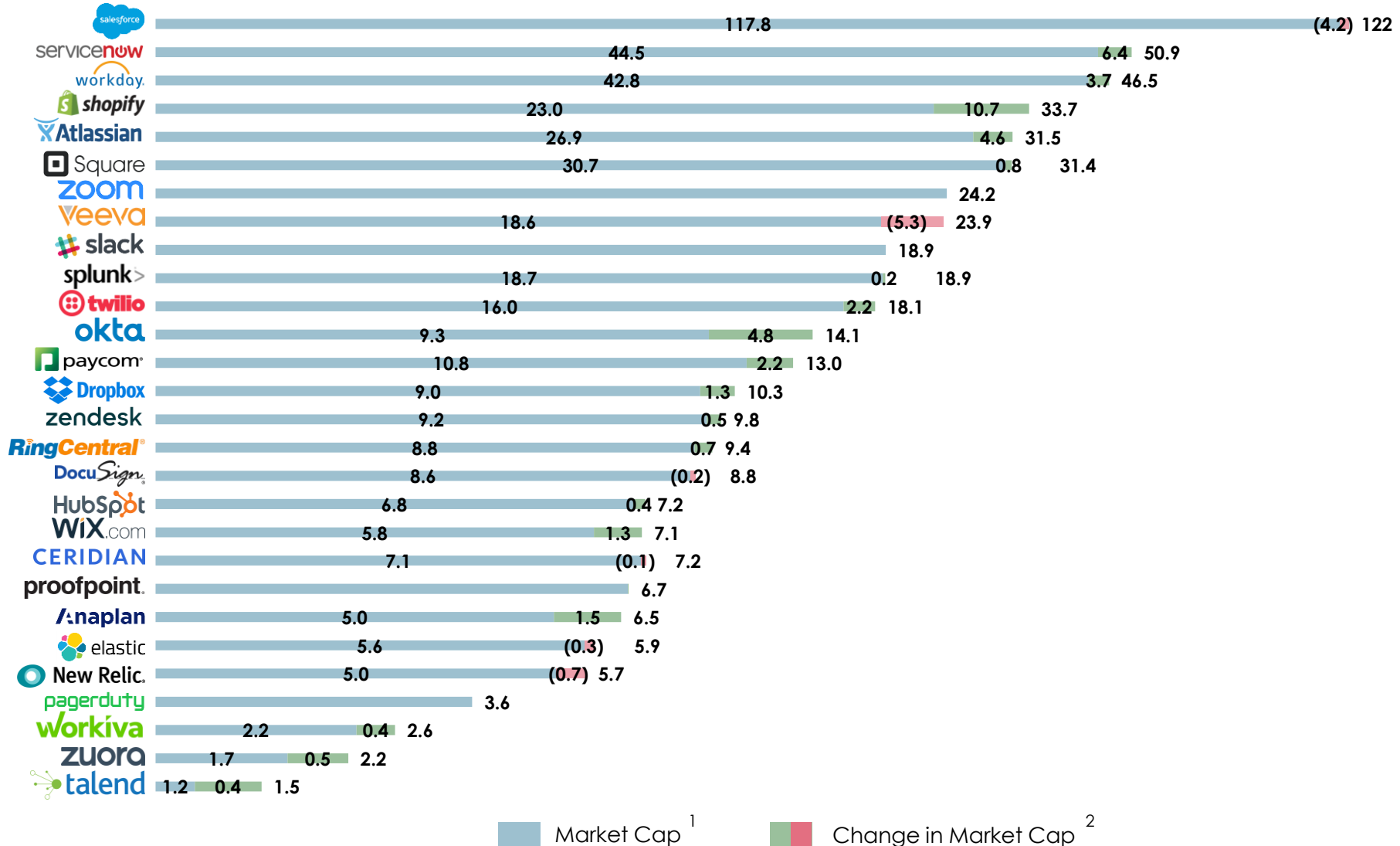
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GP Bullhound Selected SaaS Companies Market Valuations

(Market Cap Values in \$ in billions)

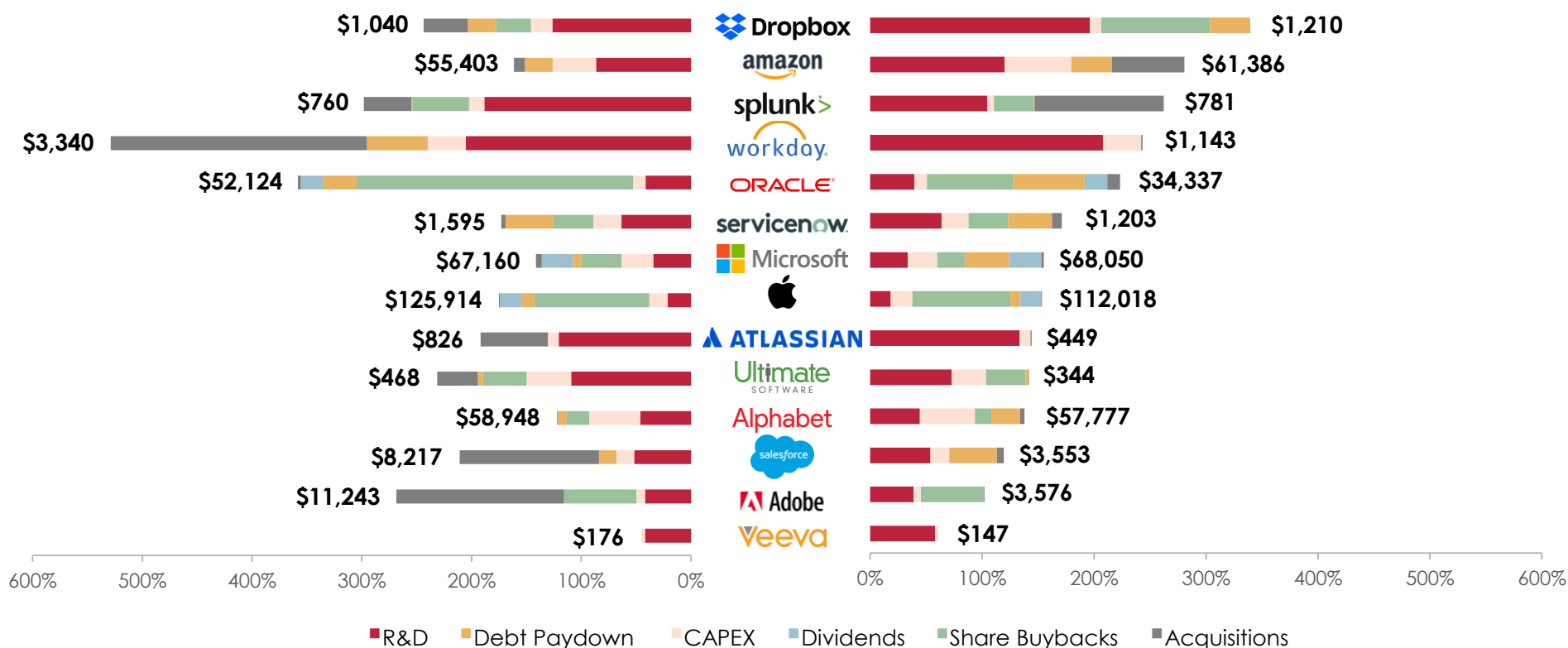


Tech Giants – Show Me The Money

- Substantial uses of cash for acquisitions through Q1 2019
 - Workday acquired Adaptive Insights for \$1.5bn in an all cash deal; Microsoft elected to buy GitHub in an all stock deal which atypical for a company with that large of a balance sheet
 - Adobe's acquisitions of Marketo for \$4.8bn in all cash and Salesforce acquisition of Mulesoft utilizing \$4.9bn in cash of a \$6.4bn total deal value; Salesforce large splash deal for Tableau although not accounted for in the figures below is notable.
- Significant uptick in both share buybacks and a decrease in deleveraging, the former up 13% YoY and the latter down 5% YoY respectively

LTM¹ % of Operating Cash Flow (\$m)²

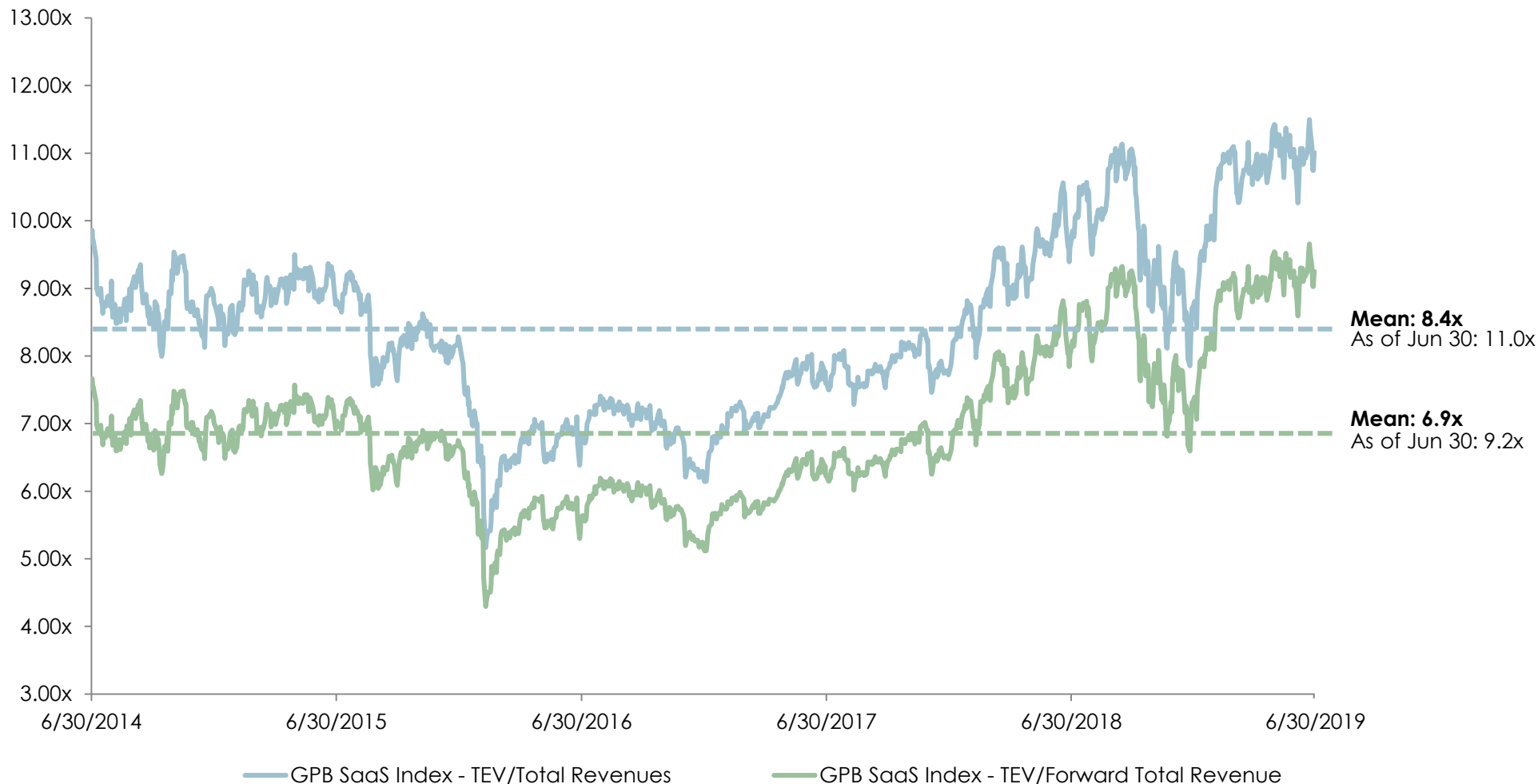
LTM – Q1 2018 % of Operating Cash Flow (\$m)²



GP Bullhound SaaS Index Valuations

Revenue Multiple Trends – Last Five Years

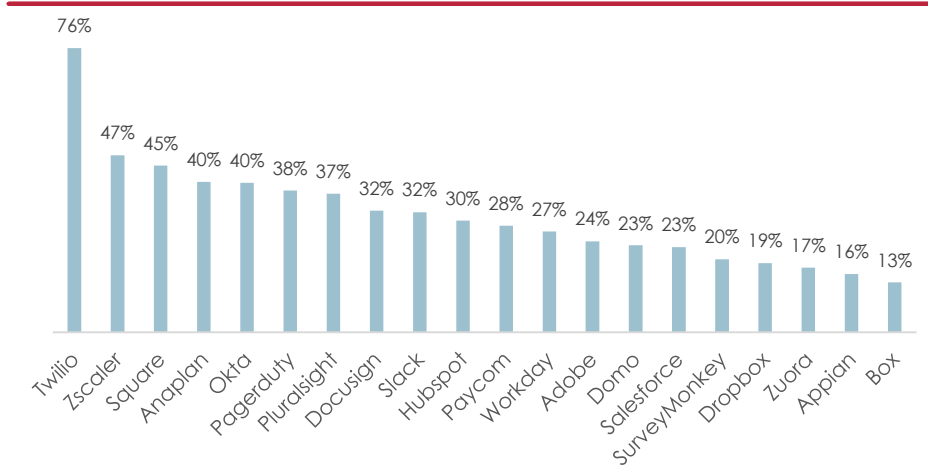
*Current SaaS valuations are now higher than the five year mean;
showing the robustness of the current market environment*



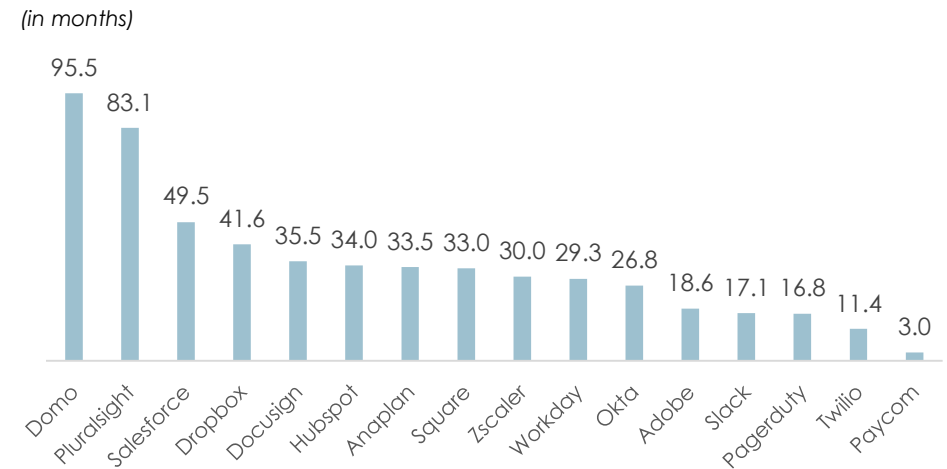
Public SaaS Metric Benchmarking

Investors are increasingly focused on KPI's outside of revenue as they evaluate business models

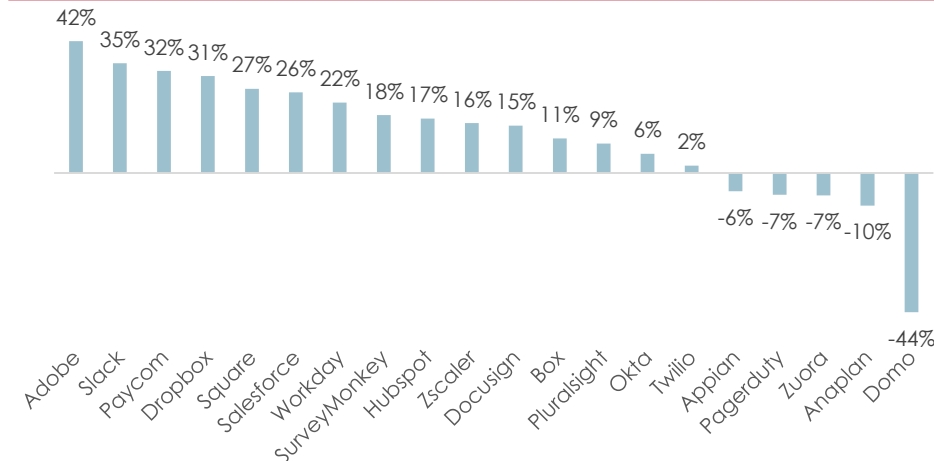
Revenue YoY Growth¹



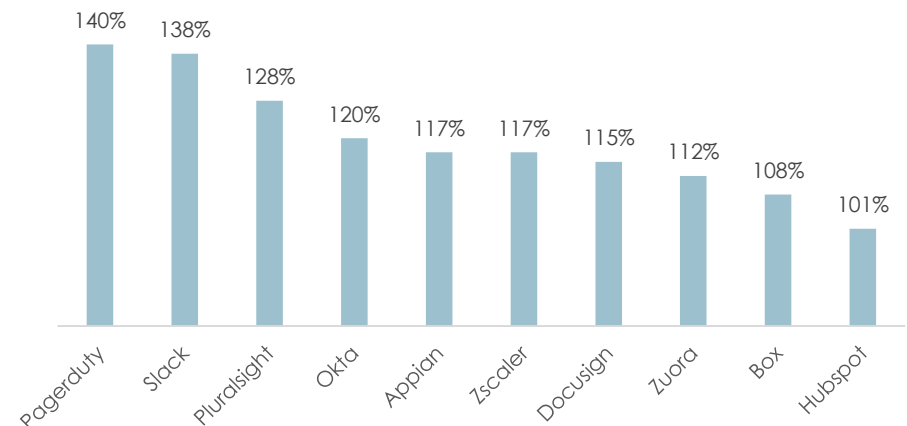
Payback Period²



Free Cash Flow Margin³

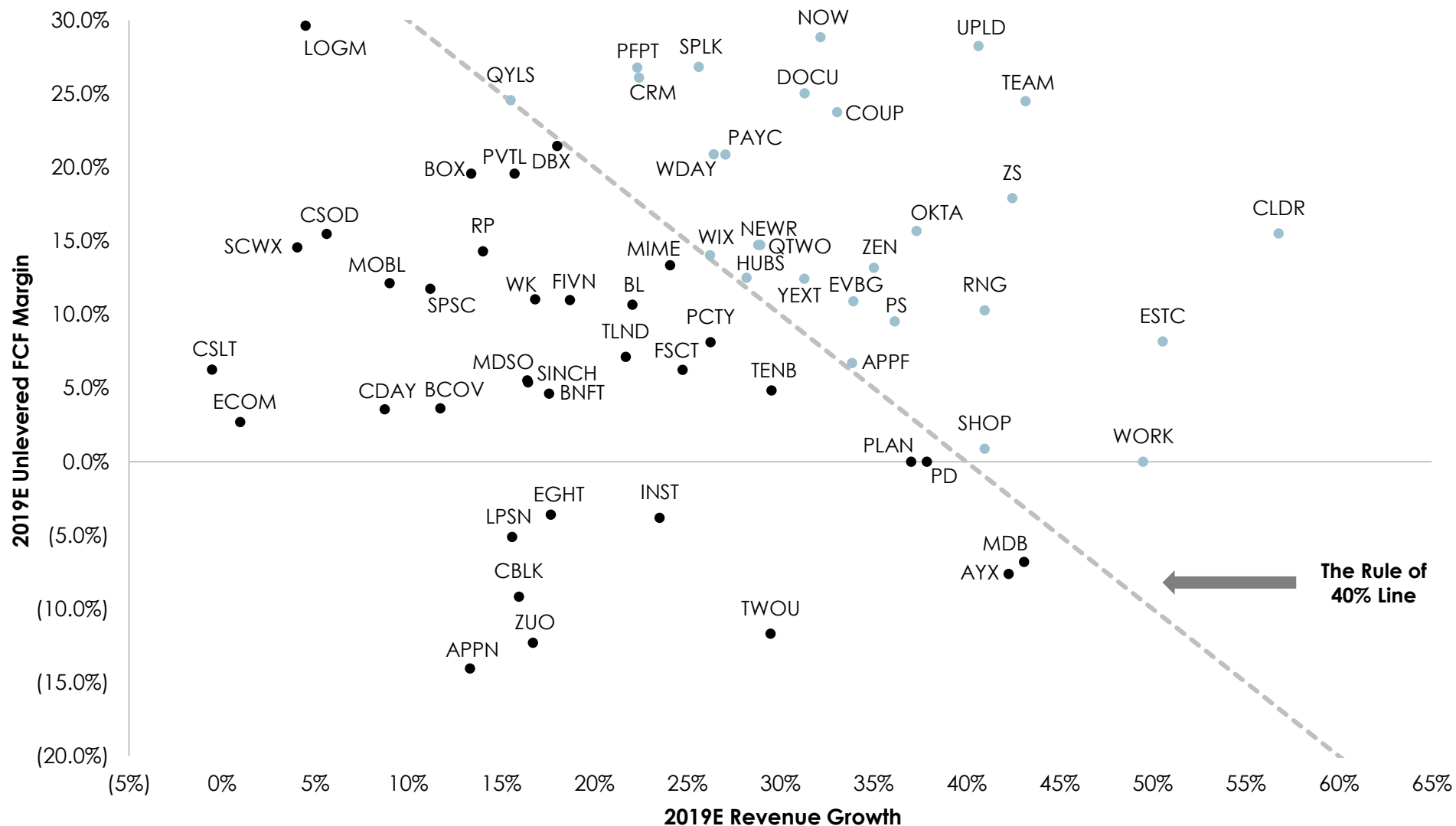


Net Dollar Retention⁴



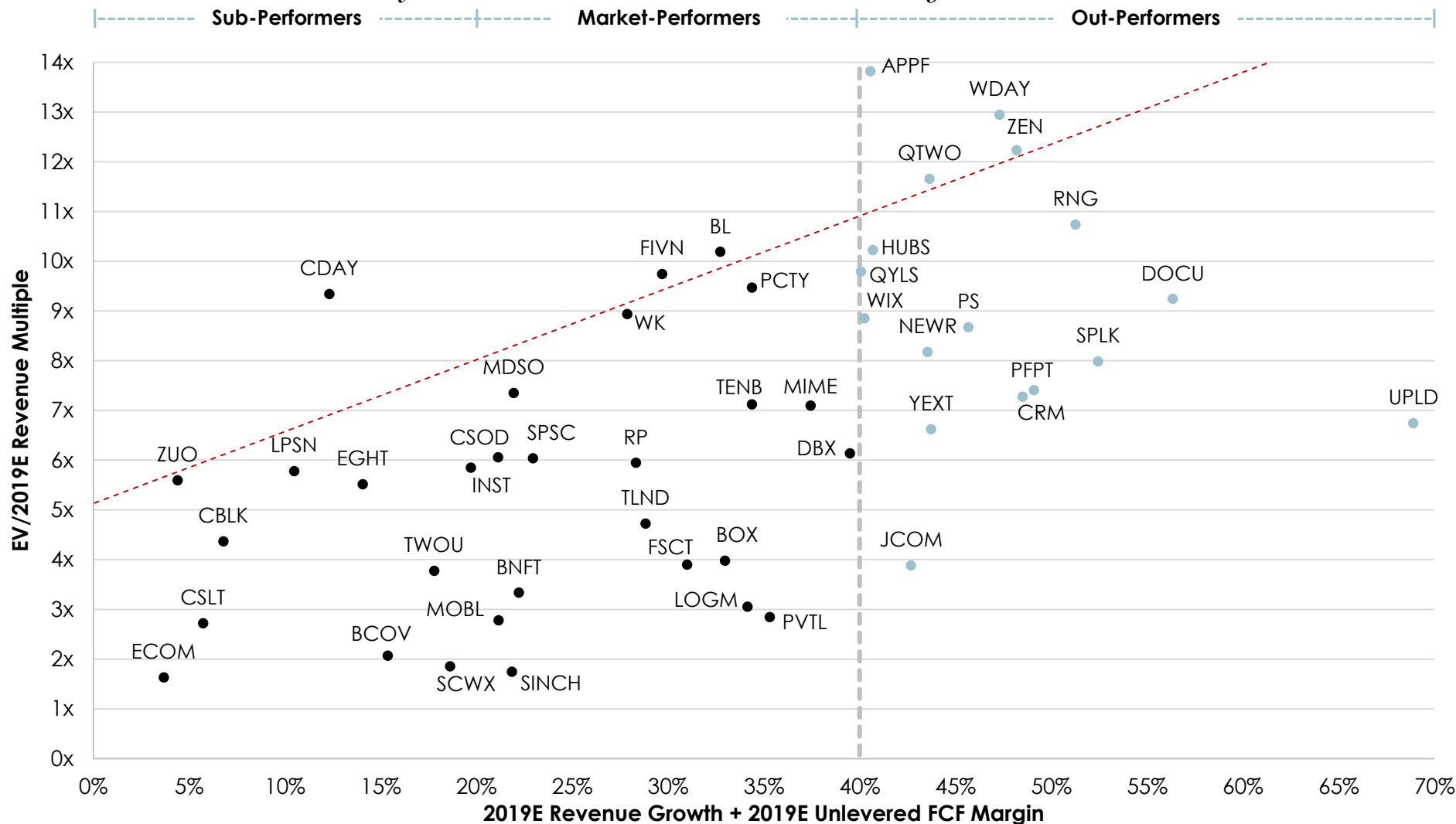
Rule of 40% – Public SaaS

2019E Growth and Profitability of Public SaaS Companies in GPB Index



Rule of 40% – Public SaaS (Cont'd)

Companies whose summed revenue growth rate and FCF margin is greater than 40%, are valued higher by investors than those below this 'rule of 40' line



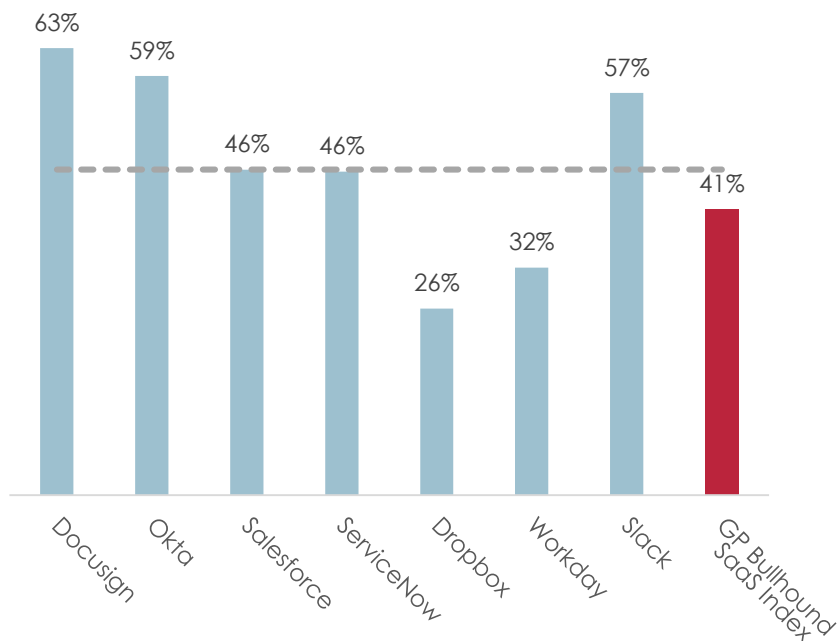
Horizontal vs. Vertical Focused Cloud Software Trends

Vertical-specific has lower Sales & Marketing spend as a percentage of revenue

However, generally lower growth and valuation multiples representing smaller market opportunities

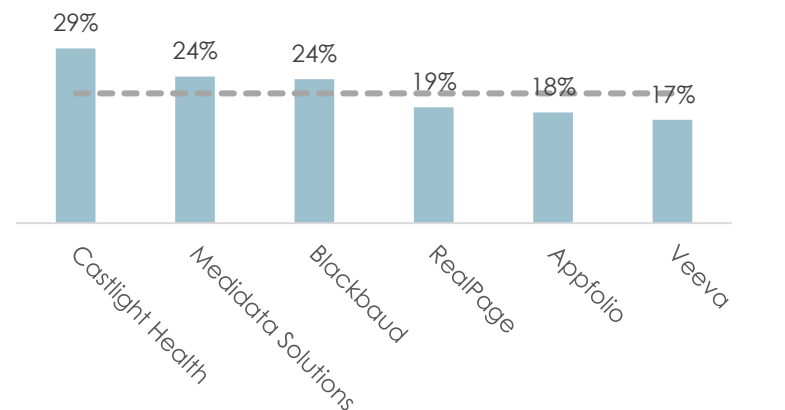
Horizontal Software

Median: 46%



Vertical-Specific Software

Median: 21%



EV/LTM
Revenue

11.2x 31.7x 8.4x 17.9x 6.9x 15.2x 43.0x

2.7x 8.2x 5.4x 6.5x 17.2x 24.8x

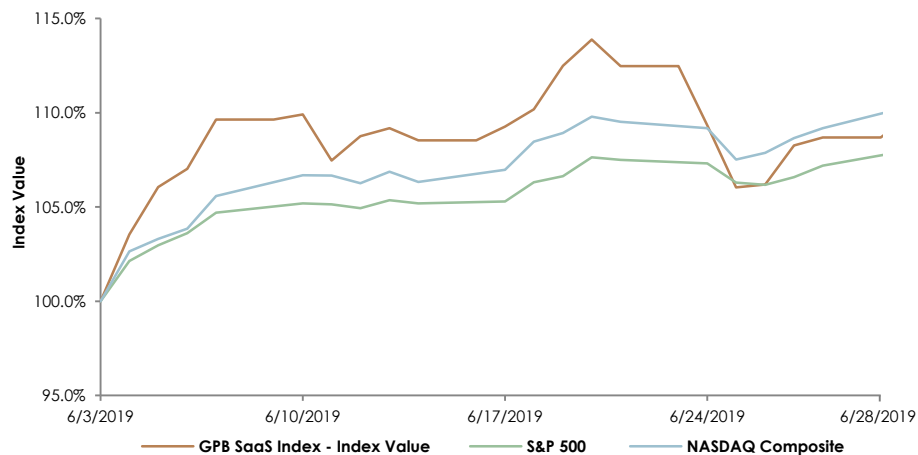
FY19E/18
Revenue
Growth

(0.9%) 52.7% 26.8% 32.1% 18.5% 31.7% NA

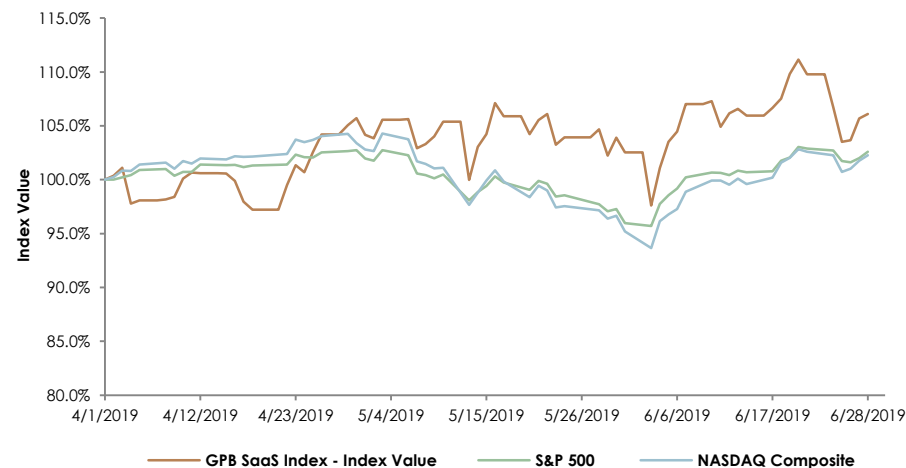
0.3% 16.2% 5.1% 13.6% 34.5% 25.9%

GP Bullhound SaaS Index Performance

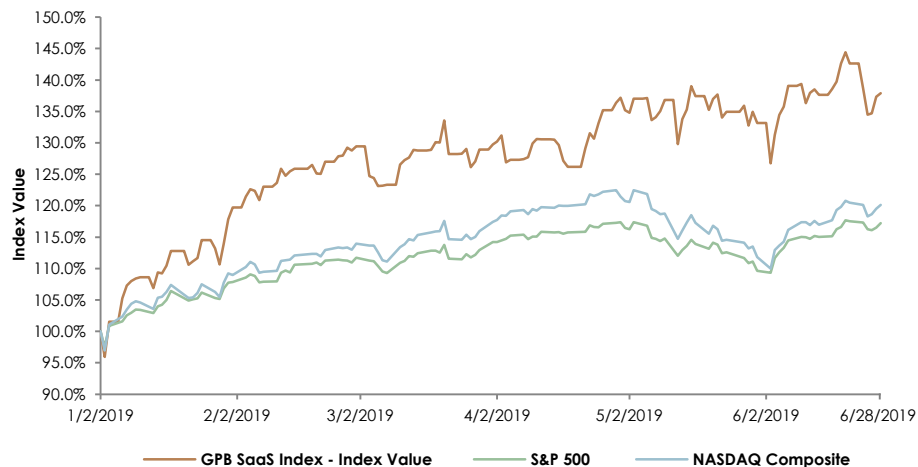
L1M



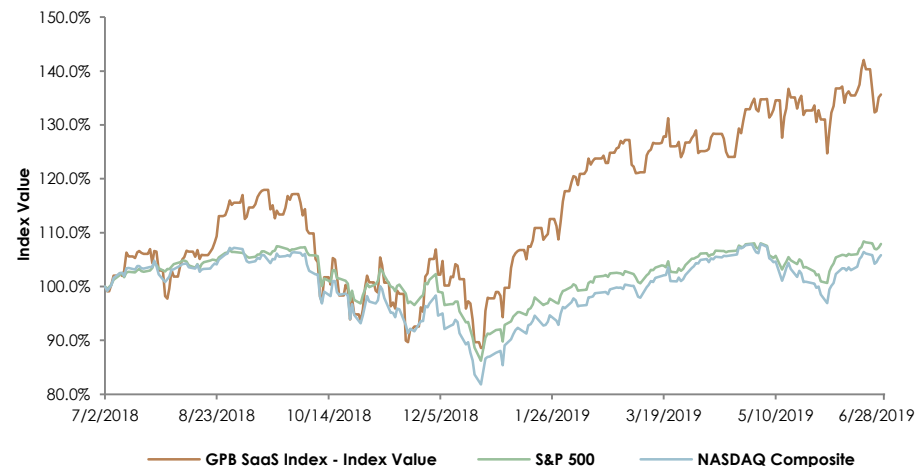
L3M



L6M



L12M



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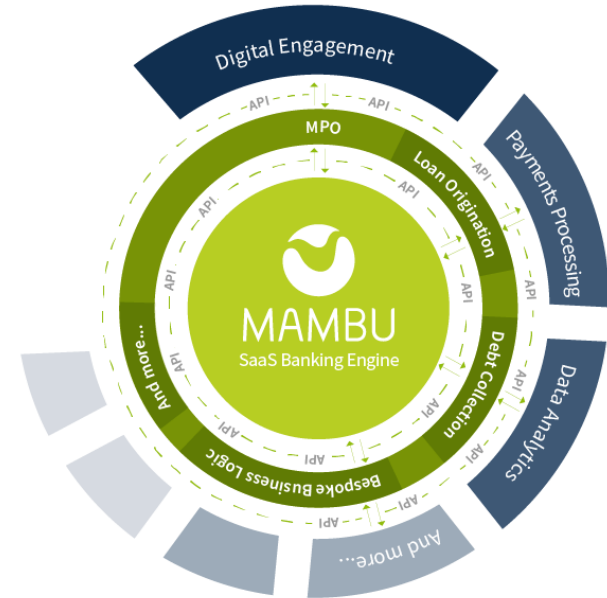
SaaS Company CEO Profile



Mambu's API-based SaaS core banking platform is an agile and scalable enterprise-grade financial services engine, which enables banks, lenders, fintechs and others to transform their entire IT landscape into an extremely adaptable, innovative cloud-based delivery model.

"Financial institutions spend more on technology than any other industry yet with their outdated system and processes, 4 out of 5 bank CEOs are concerned about the speed of technological change. It's the last major industry to consider adopting cloud and as a result is being attacked from all sides by startups and tech giants who are rethinking how to make banking personal, simple, beautiful and ubiquitous. The fintech era we're living in is just getting started and will undergo major upheaval in the coming decade."

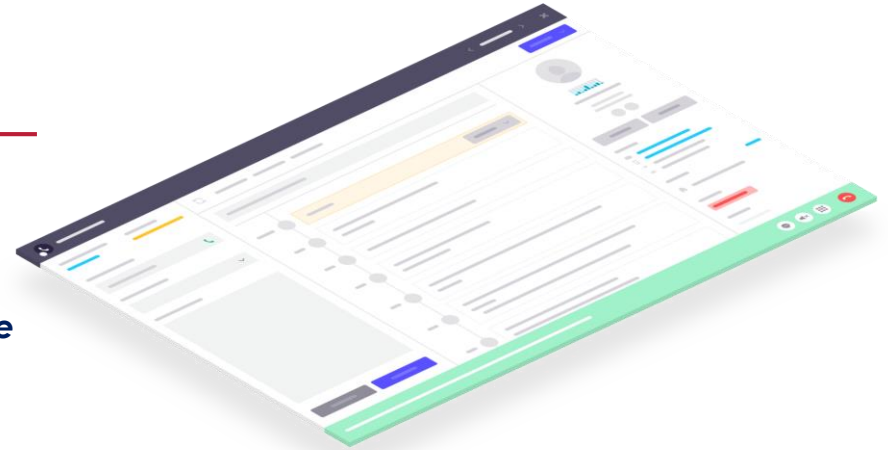
Eugene Danilkis
CEO & Founder



SaaS Company CEO Profile (Cont'd)



Outreach is a leading Enterprise ready Sales Engagement Platform that accelerates revenue growth by optimizing every interaction throughout the customer lifecycle. The platform manages all customer interactions across email, voice and social, and leverages machine learning to guide reps to take the right actions.



“Sales teams are creating more data than ever before – to the point where it's finally possible to take actions based on that data. CROs know there is significant value just waiting to be uncovered and are pushing to get more insights into their customer-facing teams' hands so they can be more effective at their job and create their customer obsession. With the implementation of tools like machine learning, CROs will be able to leverage all their data in a real meaningful way and show a true impact on the bottom line.”

Manny Medina
CEO & Co-Founder

A screenshot of the Outreach platform's 'Users' management interface. The interface shows a list of users with columns for name, role, status, and activity. The 'Users' tab is selected, and the list shows 150 of 250 users. The table includes columns for 'Views & Filters', 'Search Users', and a table of user details. The table has columns for 'Name', 'Role', 'Status', 'Replies', 'Due', 'Active', and 'Last Activity'. The table lists users such as Andrew Kinger, Brent Gariano, Colin Reilly, Gordon Hampton, Jerry Pharr, Kathleen Delarm, Kelley Teed, Kim Wood, Mike Sloszcak, Mike Leggett, and Shane Lunak. The table also includes a 'SEND' button and a 'SYNC' button for each user. The interface also shows a 'Settings' sidebar on the left with options like 'Org', 'Teams', 'Users', 'Roles', 'Profiles', 'System Config', 'Schedules', 'Rulesets', 'Prospect', 'Branded URLs', 'Account', 'Opportunity', 'Calls', 'Plugins', 'Triggers', and 'Phones'. The 'System Activity' section at the bottom shows 'Imports', 'Bulk Actions', and 'Sequence Status'.

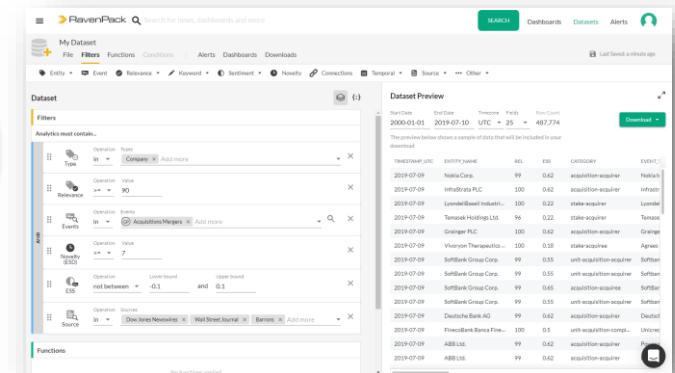
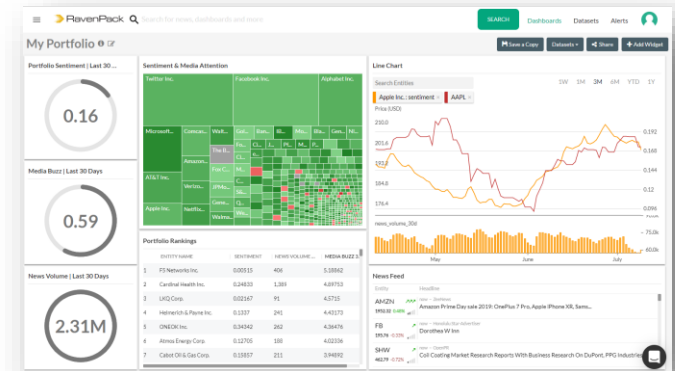
SaaS Company CEO Profile (Cont'd)



RavenPack is a leading cloud-based data and analytics provider for financial services. Financial professionals rely on RavenPack for its speed and accuracy in analyzing large amounts of unstructured content. The company's products allow clients to enhance returns, reduce risk and increase efficiency by systematically incorporating the effects of public information in their models or workflows. RavenPack's clients include the most successful hedge funds, banks, and asset managers in the world.

“Financial Services firms are under enormous pressure to transform and gain an edge over their competitors be it through operational efficiency or by making better investment decisions. Financial SaaS plays a key role in this transformation and Big Data & AI initiatives are at the top of the agenda of every C-Level executive.”

Armando Gonzalez
CEO & Co-Founder



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Key SaaS Metrics

Definitions & Calculations

<i>Metric</i>	<i>Definition</i>	<i>Calculation</i>
MRR	Normalized measurement of recurring revenue, most frequently measured with a constant value in each month of the subscription period	MRR = # of paying customers * ARPA/month
Customer Acquisition Cost (CAC)	All S&M expenses for new customers. Sometimes excludes personnel management S&M costs	CAC = $\frac{S\&M}{\# \text{ of new customers}}$
Customer Lifetime Value (CLV)	Amount of profit a customer is calculated to deliver to the company over the lifetime of the customer	CLV = $\frac{ARPU * GM}{\text{Churn rate}}$
Payback Period	The number of months a company requires to pay back its cost of customer acquisition	Payback Period = $\frac{CAC}{ARPA * GM}$
Churn (Gross & Net)	<p>Gross Churn is the number of customers lost in a given period or cohort regardless of account expansion or growth</p> <p>Net Churn is the number of customers gained or lost in a given period or cohort after taking into consideration new, reactivated, or expanded accounts</p>	<p>Gross Churn = $\frac{\text{customers lost over time period}}{\text{customers at beginning of time period}}$</p> <p>Net Churn = $\frac{(\text{customers lost over time period} - \text{customers gained over time period})}{\text{customers at beginning of time period}}$</p>

Key SaaS Metrics (Cont'd)

Investors focus on key SaaS metrics, long-term business model viability and valuations

<p>MRR / ARR / ARRR</p>	<ul style="list-style-type: none"> Monthly Recurring Revenues (MRR), Annual Recurring Revenue (ARR), Annual Run Rate Revenue (ARRR) are the key metrics that investors will focus on <ul style="list-style-type: none"> Note: ARRR = ARR + Non-recurring revenue items Also important to understand, the % on-demand SaaS vs. traditional license, and the mix between software and services Important to show continued growth in top line revenue (both for reported financials and the above metrics)
<p>CAC vs. CLV</p>	<ul style="list-style-type: none"> Customer Acquisition Cost (CAC) payback period is typically stated in months. Represents the time taken to fully pay back sales and marketing investment to acquire a single customer Growth is the key target for SaaS companies, but sales and marketing investments should ultimately be profitable. CAC payback periods: <ul style="list-style-type: none"> For SMEs, CAC payback period should be 6-12 months For Enterprise Customers, CAC payback period should be 9-15 months A CAC payback period of >24months should be a cause for concern Customer Lifetime Value = NPV of recurring gross profit of a customer less the initial cost of customer acquisition For SMEs, CLV should be between 3 & 4 years <ul style="list-style-type: none"> For Enterprise Customers, CLV should be between 5 & 7 years
<p>Churn & Renewal Rates</p>	<ul style="list-style-type: none"> Logo Churn: Churn of absolute number of customers. Top companies have a Logo Churn of <7% MRR Churn: Churn of customer MRR that has been lost over given period of time. Top companies have a MRR Churn of <5%; including upgrades/customer expansion, churn is ideally negative (Negative Net Churn) MRR Renewal: Total MRR of renewed customers/Total MRR of existing customers at year beginning. Top companies have a MRR Renewal percentage of 105-110% due to upsells to its installed base Net Revenue Retention: <ul style="list-style-type: none"> Key metric for performance of SaaS business >100% upsells more than make up for churn ARR as a Percentage of Upsells: 15%+
<p>Free Cash Flow / Burn Rate</p>	<ul style="list-style-type: none"> Growth is of paramount importance, with excess cash being used to fuel growth Important, therefore, to understand the cash burn in the business and planning for capital efficient hyper-growth

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Public Comps – GP Bullhound SaaS Index

Company Name	HQ	Employee	Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			CY Revenue Growth	CY19E Margins	
			06-30-19	LTM	L6M	L1M	(m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
Salesforce	US	35,000	\$151.73	11.2%	12.7%	(2.5%)	\$117,825	\$118,214	\$6,379	8.4x	7.3x	6.1x	67.1x	28.1x	22.6x	22.4%	77.4%	25.9%
ServiceNow	US	8,666	274.57	59.2%	52.3%	4.6%	50,937	50,368	1,662	17.9x	14.6x	11.4x	NM	52.9x	39.6x	32.2%	80.9%	27.6%
Workday	US	11,000	205.58	69.7%	28.8%	(1.1%)	46,542	46,179	1,892	15.2x	12.9x	10.5x	NM	65.9x	49.2x	26.4%	75.6%	19.6%
Shopify	CA	4,000	300.15	105.7%	124.9%	8.3%	33,694	31,801	1,997	27.0x	21.0x	15.8x	NM	NM	NM	41.0%	55.8%	4.1%
Square	US	3,349	72.53	17.7%	29.8%	13.9%	30,678	30,634	1,088	8.5x	13.4x	10.0x	NM	73.4x	47.1x	(30.9%)	80.9%	18.3%
Atlassian	UK	3,315	130.84	109.3%	49.4%	3.7%	31,541	30,614	1,773	29.5x	22.3x	17.7x	NM	NM	71.1x	43.2%	NA	23.5%
Zoom	US	1,958	88.79	NA	NA	10.4%	24,191	23,506	737	59.9x	43.1x	31.2x	NM	NM	NM	65.2%	80.0%	7.2%
Veeva	US	2,553	162.11	110.9%	85.2%	5.1%	23,873	22,563	1,330	24.8x	21.5x	18.1x	NM	56.0x	47.2x	21.8%	74.7%	38.4%
Slack	US	1,664	37.50	NA	NA	NA	18,919	19,530	793	43.0x	32.6x	23.8x	NM	NM	NM	49.5%	86.2%	(28.4%)
Splunk	US	4,400	125.75	26.9%	22.3%	6.9%	18,884	18,080	2,675	9.4x	8.0x	6.6x	NM	47.2x	34.4x	25.6%	84.6%	16.9%
Twilio	US	2,114	136.35	143.4%	58.5%	7.4%	18,143	17,850	919	23.7x	16.1x	12.0x	NM	NM	NM	70.6%	57.2%	6.6%
Okta	US	1,770	123.51	145.2%	100.5%	15.9%	14,097	13,972	547	31.7x	25.5x	19.5x	NM	NM	NM	37.3%	76.1%	(9.2%)
Paycom	US	3,050	226.72	129.4%	87.0%	8.4%	13,039	13,006	91	21.2x	18.1x	14.7x	63.3x	43.7x	35.0x	27.1%	84.5%	41.3%
Dropbox	US	2,323	25.05	(22.7%)	20.5%	11.9%	10,300	10,078	915	6.9x	6.1x	5.4x	NM	26.4x	21.7x	18.0%	75.2%	23.2%
Zendesk	US	2,950	89.03	63.4%	55.5%	5.1%	9,755	9,889	444	15.2x	12.2x	9.4x	NM	NM	NM	35.0%	74.1%	6.6%
Zscaler	US	1,050	76.64	114.4%	92.6%	5.0%	9,631	9,278	353	34.0x	26.8x	20.0x	NM	NM	NM	42.5%	NA	9.6%
RingCentral	US	1,871	114.92	63.4%	44.7%	(4.8%)	9,416	9,275	549	14.1x	10.7x	8.7x	NM	NM	66.9x	41.0%	77.0%	12.7%
DocuSign	US	3,023	49.71	(6.1%)	22.7%	(10.4%)	8,640	8,505	752	11.2x	9.2x	7.5x	NM	NM	71.9x	31.3%	78.6%	7.9%
MongoDB	US	1,331	152.09	206.4%	88.9%	8.6%	8,415	8,237	476	26.9x	21.6x	16.5x	NM	NM	NM	43.1%	70.3%	(13.6%)
Coupa	US	1,202	126.61	103.4%	103.4%	14.7%	7,821	7,680	346	26.9x	22.2x	17.4x	NM	NM	NM	33.1%	71.9%	6.5%
Ceridian	US	4,444	50.20	51.3%	47.8%	(0.7%)	7,070	7,580	206	10.0x	9.3x	8.3x	65.3x	41.1x	33.8x	8.7%	48.8%	22.7%
Wix.com	IL	2,093	142.10	41.7%	58.9%	1.8%	7,085	6,742	746	10.5x	8.8x	7.1x	NM	57.9x	38.0x	26.2%	75.6%	15.3%
HubSpot	US	2,745	170.52	36.0%	37.5%	(3.7%)	7,179	6,722	969	12.2x	10.2x	8.3x	NM	NM	57.9x	28.2%	82.3%	12.4%
Alteryx	US	936	109.12	186.0%	86.8%	24.1%	6,825	6,661	367	23.9x	18.5x	14.0x	NM	NM	NM	42.3%	90.8%	11.0%
Proofpoint	US	2,613	120.25	4.3%	41.3%	4.8%	6,695	6,497	257	8.6x	7.4x	6.1x	NM	48.4x	35.6x	22.3%	77.9%	15.3%
Anaplan	US	1,299	50.47	NA	85.8%	19.3%	6,519	6,240	333	23.6x	18.9x	14.7x	NM	NM	NM	37.0%	75.1%	(16.9%)
RealPage	US	6,300	58.85	6.8%	22.9%	0.9%	5,431	5,894	253	6.5x	5.9x	5.3x	40.2x	21.0x	18.0x	14.0%	61.7%	28.3%
Medidata Solutions	US	1,998	90.51	12.4%	37.7%	0.4%	5,433	5,430	206	8.2x	7.3x	6.4x	67.3x	30.8x	25.3x	16.4%	75.4%	23.8%
Elastic	US	1,442	74.66	NA	6.7%	(11.0%)	5,626	5,327	299	19.6x	14.7x	10.7x	NM	NM	NM	50.5%	NA	(21.0%)
j2 Global	US	2,587	88.89	2.6%	29.3%	4.5%	4,350	5,213	227	4.3x	3.9x	3.6x	11.3x	9.5x	8.8x	11.2%	83.4%	40.7%
Paylocity Holding	US	2,600	93.82	59.4%	57.3%	(6.9%)	4,970	4,831	139	11.3x	9.5x	7.9x	NM	32.9x	26.7x	26.3%	NA	28.8%
New Relic	US	1,774	86.51	(14.0%)	7.8%	(15.0%)	5,028	4,692	745	9.8x	8.2x	6.5x	NM	57.0x	38.3x	28.8%	NA	14.4%
LogMeIn	US	3,554	73.68	(28.6%)	(8.1%)	1.2%	3,671	3,840	145	3.1x	3.1x	2.9x	11.1x	9.3x	9.7x	4.5%	82.1%	32.7%
Q2	US	1,190	76.36	33.8%	58.2%	3.0%	3,567	3,622	165	14.1x	11.7x	9.5x	NM	NM	NM	28.9%	52.2%	6.7%
AppFolio	US	1,040	102.27	67.2%	77.3%	5.9%	3,478	3,516	34	17.2x	13.8x	11.0x	NM	NM	60.1x	33.9%	60.4%	16.2%
Cornerstone OnDemand	US	1,953	57.93	22.1%	15.1%	7.2%	3,456	3,442	392	6.3x	6.1x	5.3x	NM	28.3x	21.4x	5.6%	76.6%	21.4%
PagerDuty	US	524	47.05	NA	NA	(9.2%)	3,580	3,242	338	24.9x	20.0x	15.5x	NM	NM	NM	37.9%	85.0%	(14.8%)
Qualys	US	1,210	87.08	3.3%	16.0%	(3.4%)	3,410	3,153	298	10.9x	9.8x	8.4x	36.8x	25.2x	21.5x	15.5%	78.7%	38.8%
Five9	US	983	51.29	48.4%	18.7%	(1.4%)	3,061	2,979	299	10.9x	9.7x	8.3x	NM	59.9x	45.0x	18.7%	63.0%	16.3%
BlackLine	US	903	53.51	23.2%	32.8%	3.1%	2,946	2,832	135	11.8x	10.2x	8.3x	NM	NM	NM	22.0%	81.4%	7.8%

Source(s): Capital IQ as of 6/30/2019

Note: Multiples in excess of 75.0x or less than 0.0x are considered not-material ("NM") and are not included in average calculation

Public Comps – GP Bullhound SaaS Index (Cont'd)

CY																CY		
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	L1M	(m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
Mimecast	UK	1,495	\$46.71	13.3%	40.2%	0.2%	\$2,865	\$2,830	\$174	8.3x	7.1x	5.9x	NM	43.7x	31.3x	24.1%	NA	16.2%
Everbridge	US	787	89.42	88.6%	63.4%	11.2%	2,944	2,798	258	17.6x	14.2x	11.3x	NM	NM	NM	33.9%	70.7%	2.4%
Box	US	1,980	17.61	(29.5%)	4.1%	(8.2%)	2,580	2,743	231	4.3x	4.0x	3.5x	NM	51.9x	32.3x	13.4%	71.3%	7.7%
Pluralsight	US	1,100	30.32	24.0%	33.3%	(9.6%)	2,889	2,739	737	10.9x	8.7x	6.4x	NM	NM	NM	36.2%	76.5%	(14.2%)
Workiva	US	1,357	58.09	138.1%	68.2%	3.1%	2,623	2,551	114	10.0x	8.9x	7.7x	NM	NM	NM	16.8%	73.5%	(3.8%)
Tenable	US	1,298	28.54	NA	28.2%	2.1%	2,753	2,466	299	8.5x	7.1x	5.7x	NM	NM	NM	29.5%	82.6%	(13.9%)
Appian	US	1,058	36.07	(0.2%)	30.6%	(0.1%)	2,334	2,258	75	9.6x	8.8x	7.5x	NM	NM	NM	13.3%	64.9%	(9.5%)
8x8	US	1,497	24.10	20.2%	34.1%	(1.2%)	2,325	2,194	346	6.2x	5.5x	4.6x	NM	NM	NM	17.7%	NA	(10.0%)
Pivotal	US	2,971	10.56	(56.5%)	(33.9%)	(50.7%)	2,871	2,164	854	3.1x	2.8x	2.4x	NM	NM	42.5x	15.7%	70.4%	(3.1%)
2U	US	2,626	37.64	(55.0%)	(22.1%)	(1.7%)	2,374	2,013	424	4.6x	3.8x	3.0x	NM	NM	NM	29.5%	77.9%	2.5%
Yext	US	900	20.09	3.9%	37.5%	5.1%	2,232	1,985	284	8.1x	6.6x	5.1x	NM	NM	NM	31.3%	76.1%	(12.4%)
LivePerson	US	1,168	28.04	32.9%	50.5%	(0.4%)	1,716	1,668	238	6.5x	5.8x	4.9x	NM	NM	64.9x	15.6%	74.0%	3.8%
SPS Commerce	US	1,231	102.21	39.1%	25.6%	(1.2%)	1,831	1,667	185	6.5x	6.0x	5.5x	38.6x	25.2x	21.9x	11.2%	68.4%	24.0%
Zuora	US	1,221	15.32	(43.7%)	(13.2%)	(23.0%)	1,702	1,536	179	6.2x	5.6x	4.7x	NM	NM	NM	16.7%	56.2%	(13.8%)
Instructure	US	1,291	42.50	(0.1%)	13.9%	(0.9%)	1,555	1,513	91	6.9x	5.8x	4.8x	NM	NM	NM	23.5%	71.4%	(5.3%)
ForeScout Technologies	US	1,107	33.86	(1.2%)	27.9%	3.7%	1,531	1,447	127	4.6x	3.9x	3.2x	NM	NM	NM	24.7%	79.1%	(1.6%)
Upland Software	US	667	45.53	32.5%	73.1%	(5.3%)	1,151	1,421	14	8.5x	6.7x	6.2x	35.3x	18.3x	16.6x	40.7%	69.5%	36.9%
Carbonite	US	965	26.04	(25.4%)	5.3%	9.1%	897	1,356	253	4.3x	2.8x	2.3x	40.1x	10.1x	8.4x	63.3%	80.8%	27.6%
Cloudera	US	2,700	5.26	(61.4%)	(51.7%)	(43.6%)	1,442	1,241	445	2.2x	1.6x	1.5x	NM	23.4x	10.6x	56.8%	75.9%	7.1%
Talend	US	1,183	38.59	(38.0%)	7.2%	(20.1%)	1,172	1,175	29	5.5x	4.7x	3.9x	NM	NM	NM	21.7%	76.7%	(9.1%)
Carbon Black	US	1,138	16.72	(35.7%)	26.0%	6.9%	1,196	1,061	153	4.8x	4.4x	3.7x	NM	NM	NM	16.0%	78.7%	(15.1%)
Benefitfocus	US	1,450	27.15	(19.2%)	(40.6%)	(6.2%)	883	1,014	144	3.8x	3.3x	2.9x	NM	59.5x	30.6x	17.6%	53.1%	5.6%
SecureWorks	US	2,684	13.29	6.7%	(18.3%)	(14.9%)	1,083	1,000	111	1.9x	1.9x	1.7x	NM	NM	NM	4.0%	55.6%	0.5%
CLX Communications	SE	405	16.11	89.0%	66.1%	(1.2%)	864	916	19	2.0x	1.7x	1.6x	21.7x	17.1x	15.4x	16.4%	25.8%	10.2%
MobileIron	US	889	6.20	39.3%	36.0%	10.3%	674	585	107	3.0x	2.8x	2.5x	NM	NM	48.3x	9.0%	82.2%	1.9%
Castlight Health	US	470	3.23	(24.0%)	44.2%	(2.4%)	465	423	66	2.7x	2.7x	2.4x	NM	55.1x	25.5x	(0.5%)	67.5%	4.9%
Brightcove	US	496	10.33	7.0%	46.1%	1.1%	391	381	29	2.3x	2.1x	1.9x	NM	50.1x	28.0x	11.7%	61.5%	4.1%
ChannelAdvisor	US	730	8.76	(37.7%)	(24.5%)	(7.9%)	244	216	48	1.6x	1.6x	1.5x	NM	13.7x	11.4x	1.0%	78.3%	11.9%
									Average (All)	12.8x	10.5x	8.4x	41.5x	38.2x	34.2x	26.0%	72.6%	8.8%
									Median (All)	9.5x	8.4x	6.6x	39.3x	41.1x	32.3x	25.2%	75.6%	7.7%

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Public Comps – Large-Cap Consolidators

																CY		
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	L1M	Cap (m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
Microsoft	US	131,000	\$133.96	35.8%	33.4%	6.5%	\$1,026,511	\$981,318	\$131,536	8.0x	7.5x	6.7x	18.9x	17.5x	14.9x	10.8%	NA	42.8%
Intel	US	107,400	47.87	(3.7%)	2.4%	7.0%	214,314	231,383	12,033	3.3x	3.4x	3.2x	7.1x	7.4x	7.0x	(3.2%)	59.7%	45.6%
Cisco	US	74,200	54.73	27.2%	28.0%	2.2%	234,285	223,351	34,643	4.4x	4.2x	4.1x	14.4x	11.8x	11.4x	4.0%	NA	35.8%
Oracle	US	136,000	56.97	29.3%	27.1%	10.2%	190,042	209,190	37,827	5.3x	5.3x	5.1x	13.0x	11.1x	10.7x	(0.1%)	NA	47.3%
SAP	DE	98,659	137.07	18.7%	37.3%	9.9%	163,618	171,427	8,892	6.0x	5.5x	5.1x	23.1x	16.2x	14.4x	10.4%	71.6%	33.9%
IBM	US	350,600	137.90	(1.3%)	22.0%	6.4%	122,268	159,491	18,018	2.1x	2.1x	2.0x	9.3x	8.5x	8.4x	(0.9%)	47.2%	24.4%
Salesforce	US	35,000	151.73	11.2%	12.7%	(2.5%)	117,825	118,214	6,379	8.4x	7.3x	6.1x	67.1x	28.1x	22.6x	22.4%	77.4%	25.9%
Hewlett Packard	US	60,000	14.95	2.3%	14.7%	5.1%	20,020	29,059	3,585	1.0x	1.0x	1.0x	5.4x	5.6x	5.6x	(0.9%)	NA	17.2%
									Average	4.8x	4.5x	4.2x	19.8x	13.3x	11.9x	5.3%	64.0%	34.1%
									Median	4.8x	4.7x	4.6x	13.7x	11.4x	11.0x	1.9%	65.7%	34.8%

Public Comps – Advertising Technology

													CY					
Company Name	HQ	Employee	Share Price 06-30-19	Share Price Performance			Market Cap (m)	EV (m)	Cash (m)	EV/Revenue			EV/EBITDA			Revenue Growth 19/18	CY19E Margins	
				LTM	L6M	L1M				LTM	CY19E	CY20E	LTM	CY19E	CY20E		Gross	EBITDA
Alphabet	US	103,459	\$1,082.80	(4.1%)	3.5%	(3.4%)	\$751,069	\$649,853	\$113,488	4.6x	4.0x	3.5x	15.4x	11.2x	9.6x	17.6%	55.5%	35.9%
Adobe	US	21,357	294.65	20.9%	32.1%	7.3%	143,035	143,692	3,479	14.2x	12.8x	10.9x	42.7x	28.7x	23.6x	23.9%	87.3%	44.8%
Salesforce	US	35,000	151.73	11.2%	12.7%	(2.5%)	117,825	118,214	6,379	8.4x	7.3x	6.1x	67.1x	28.1x	22.6x	22.4%	77.4%	25.9%
Trade Desk	US	944	227.78	142.8%	99.0%	12.8%	10,096	9,958	218	19.4x	15.3x	11.9x	NM	51.9x	38.9x	36.1%	76.3%	29.5%
Hubspot	US	2,745	170.52	36.0%	37.5%	(3.7%)	7,179	6,722	969	12.2x	10.2x	8.3x	NM	NM	59.0x	28.2%	82.3%	12.4%
Teradata	US	10,152	35.85	(10.7%)	(4.2%)	2.3%	4,181	4,091	723	1.9x	2.1x	2.0x	31.7x	10.7x	8.8x	(8.1%)	54.2%	19.3%
Criteo	FR	2,744	17.21	(47.6%)	(24.1%)	(8.5%)	1,112	962	396	0.4x	1.0x	1.0x	4.3x	3.4x	3.2x	(58.1%)	88.3%	29.5%
TechTarget	US	647	21.25	(25.2%)	75.5%	8.7%	586	604	39	4.9x	4.5x	4.1x	26.3x	15.8x	13.6x	10.2%	76.6%	28.5%
ChannelAdvisor	US	730	8.76	(37.7%)	(24.5%)	(7.9%)	244	216	48	1.6x	1.6x	1.5x	NM	13.7x	11.4x	1.0%	78.3%	11.9%
									Average	7.5x	6.5x	5.5x	31.2x	20.4x	21.2x	8.1%	75.1%	26.4%
									Median	4.9x	4.5x	4.1x	29.0x	14.8x	13.6x	17.6%	77.4%	28.5%

Public Comps – Business Intelligence/Analytics

													CY					
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	LTM	(m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
Alphabet	US	103,459	\$1,082.80	(4.1%)	3.5%	(3.4%)	\$751,069	\$649,853	\$113,488	4.6x	4.0x	3.5x	15.4x	11.2x	9.6x	17.6%	55.5%	36.0%
SAP	DE	98,659	137.07	18.7%	37.3%	9.9%	163,618	171,427	8,892	6.0x	5.5x	5.1x	23.1x	16.2x	14.4x	10.4%	71.6%	33.9%
IBM	US	350,600	137.90	(1.3%)	22.0%	6.4%	122,268	159,491	18,018	2.1x	2.1x	2.0x	9.3x	8.5x	8.4x	(0.9%)	47.2%	24.4%
Adobe	US	21,357	294.65	20.9%	32.1%	7.3%	143,035	143,692	3,479	14.2x	12.8x	10.9x	42.7x	28.7x	23.6x	23.9%	87.3%	44.8%
Splunk	US	4,400	125.75	26.9%	22.3%	6.9%	18,884	18,080	2,675	9.4x	8.0x	6.6x	NM	47.2x	34.4x	25.6%	84.6%	16.9%
NetApp	US	10,500	61.70	(21.4%)	4.4%	2.1%	14,809	12,697	3,905	2.1x	2.1x	1.9x	9.4x	8.2x	7.0x	(0.7%)	NA	25.3%
Fair Isaac	US	3,896	314.02	62.4%	70.5%	5.5%	9,103	9,849	77	9.1x	8.5x	7.8x	39.5x	27.8x	24.4x	9.2%	NA	30.6%
Alteryx	US	936	109.12	186.0%	86.8%	24.1%	6,825	6,661	367	23.9x	18.5x	14.0x	NM	NM	NM	42.3%	90.8%	11.0%
Elastic	US	1,442	74.66	NA	6.7%	(11.0%)	5,626	5,327	299	19.6x	14.7x	10.7x	NM	NM	NM	50.5%	NA	(21.0%)
New Relic	US	1,774	86.51	(14.0%)	7.8%	(15.0%)	5,028	4,692	745	9.8x	8.2x	6.5x	NM	57.0x	38.3x	28.8%	NA	14.4%
Blackbaud	US	3,353	83.50	(18.5%)	33.4%	9.2%	4,002	4,680	25	5.4x	5.2x	5.0x	38.5x	26.3x	24.2x	5.3%	59.7%	19.9%
Teradata	US	10,152	35.85	(10.7%)	(4.2%)	2.3%	4,181	4,091	723	1.9x	2.1x	2.0x	31.7x	10.7x	8.8x	(8.1%)	54.2%	19.3%
Verint	US	6,200	53.78	21.3%	28.1%	(5.7%)	3,537	4,001	453	3.2x	2.9x	2.7x	21.4x	11.9x	10.5x	11.7%	68.4%	24.4%
Inovalon	US	2,302	14.51	46.2%	2.0%	4.9%	2,224	3,125	122	5.4x	4.9x	4.5x	20.2x	15.3x	13.8x	21.2%	74.4%	31.9%
Workiva	US	1,357	58.09	138.1%	68.2%	3.1%	2,623	2,551	114	10.0x	8.9x	7.7x	NM	NM	NM	16.8%	73.5%	(3.8%)
Yext	US	900	20.09	3.9%	37.5%	5.1%	2,232	1,985	284	8.1x	6.6x	5.1x	NM	NM	NM	31.3%	76.1%	(12.4%)
LivePerson	US	1,168	28.04	32.9%	50.5%	(0.4%)	1,716	1,668	238	6.5x	5.8x	4.9x	NM	NM	64.9x	15.6%	74.0%	3.8%
Cloudera	US	2,700	5.26	(61.4%)	(51.7%)	(43.6%)	1,442	1,241	445	2.2x	1.6x	1.5x	NM	23.4x	10.6x	56.8%	75.9%	7.1%
Talend	FR	1,183	38.59	(38.0%)	7.2%	(20.1%)	1,172	1,175	29	5.5x	4.7x	3.9x	NM	NM	NM	21.7%	76.7%	(9.1%)
MicroStrategy	US	2,494	143.31	12.2%	12.9%	7.2%	1,467	1,032	551	2.1x	2.1x	1.9x	NM	38.3x	17.4x	0.1%	78.7%	5.4%
SDL	UK	4,149	6.48	13.7%	6.4%	(6.2%)	588	570	25	1.4x	1.2x	1.1x	13.7x	10.9x	9.6x	14.0%	52.5%	11.1%
Expert System	IT	230	4.13	183.2%	209.7%	55.9%	164	173	15	4.5x	4.5x	4.0x	NM	20.3x	15.9x	(1.7%)	NA	22.4%
Gridsum	CN	1,192	2.78	(60.1%)	12.1%	(18.2%)	95	151	6	2.8x	NA	NA	NM	NA	NA	(100.0%)	NA	NA
Hotfolink	JP	100	3.17	(66.7%)	(15.8%)	4.9%	49	44	15	1.4x	NA	NA	29.5x	NA	NA	(100.0%)	NA	NA
									Average	6.7x	6.1x	5.1x	24.5x	22.6x	19.8x	8.0%	70.7%	15.3%
									Median	5.4x	5.1x	4.7x	22.2x	18.3x	14.4x	14.8%	74.0%	18.1%

Public Comps – Communication

Company Name	HQ	Employee	Share Price 06-30-19	Share Price Performance			Market Cap (m)	EV (m)	Cash (m)	EV/Revenue			EV/EBITDA			CY Revenue Growth 19/18	CY19E Margins	
				LTM	L6M	L1M				LTM	CY19E	CY20E	LTM	CY19E	CY20E		Gross	EBITDA
Microsoft	US	131,000	\$133.96	35.8%	33.4%	6.5%	\$1,026,511	\$981,318	\$131,536	8.0x	7.5x	6.7x	18.9x	17.5x	14.9x	10.8%	NA	42.8%
Cisco	US	74,200	54.73	27.2%	28.0%	2.2%	234,285	223,351	34,643	4.4x	4.2x	4.1x	14.4x	11.8x	11.4x	4.0%	NA	35.8%
Atlassian	UK	3,315	130.84	109.3%	49.4%	3.7%	31,541	30,614	1,773	29.5x	22.3x	17.7x	NM	NM	71.1x	43.2%	NA	23.5%
Zoom	US	1,958	88.79	NA	NA	10.4%	24,191	23,506	737	59.9x	43.1x	31.2x	NM	NM	NM	65.2%	80.0%	7.2%
Slack	US	1,664	37.50	NA	NA	NA	18,919	19,530	793	43.0x	32.6x	23.8x	NM	NM	NM	49.5%	86.2%	(28.4%)
Twilio	US	2,114	136.35	143.4%	58.5%	7.4%	18,143	17,850	919	23.7x	16.1x	12.0x	NM	NM	NM	70.6%	57.2%	6.6%
Citrix	US	8,200	98.14	(6.4%)	(3.6%)	3.6%	12,920	13,288	1,786	4.4x	4.3x	4.1x	16.6x	12.0x	11.4x	3.9%	87.0%	36.0%
RingCentral	US	1,871	114.92	63.4%	44.7%	(4.8%)	9,416	9,275	549	14.1x	10.7x	8.7x	NM	NM	66.9x	41.0%	77.0%	12.7%
NICE Systems	IL	5,504	138.51	34.2%	29.8%	0.0%	8,624	8,646	571	5.8x	5.5x	5.1x	22.9x	17.9x	16.1x	9.1%	69.5%	30.7%
Nuance	US	10,400	15.97	15.0%	22.2%	(7.0%)	4,634	5,924	621	2.9x	3.2x	3.0x	14.1x	10.3x	9.6x	(13.0%)	NA	31.6%
j2 Global	US	2,587	88.89	2.6%	29.3%	4.5%	4,350	5,213	227	4.3x	3.9x	3.6x	11.3x	9.5x	8.8x	11.2%	83.4%	40.7%
Everbridge	US	787	89.42	88.6%	63.4%	11.2%	2,944	2,798	258	17.6x	14.2x	11.3x	NM	NM	NM	33.9%	70.7%	2.4%
8x8	US	1,497	24.10	20.2%	34.1%	(1.2%)	2,325	2,194	346	6.2x	5.5x	4.6x	NM	NM	NM	17.7%	NA	(10.0%)
LivePerson	US	1,168	28.04	32.9%	50.5%	(0.4%)	1,716	1,668	238	6.5x	5.8x	4.9x	NM	NM	64.9x	15.6%	74.0%	3.8%
Average										16.4x	12.8x	10.1x	16.4x	13.1x	30.6x	25.9%	76.1%	16.8%
Median										7.2x	6.6x	5.9x	15.5x	11.9x	14.9x	16.6%	77.0%	18.1%

Public Comps – ERP & Enterprise Application

Company Name	HQ	Employee	Share Price 06-30-19	Share Price Performance			Market Cap (m)	EV (m)	Cash (m)	EV/Revenue			EV/EBITDA			CY Revenue Growth 19/18	CY19E Margins	
				LTM	L6M	LTM				LTM	CY19E	CY20E	LTM	CY19E	CY20E		Gross	EBITDA
Oracle	US	136,000	\$56.97	29.3%	27.1%	10.2%	\$190,042	\$209,190	\$37,827	5.3x	5.3x	5.1x	13.0x	11.1x	10.7x	(0.1%)	NA	47.3%
SAP	DE	98,659	137.07	18.7%	37.3%	9.9%	163,618	171,427	8,892	6.0x	5.5x	5.1x	23.1x	16.2x	14.4x	10.4%	71.6%	33.9%
Salesforce	US	35,000	151.73	11.2%	12.7%	(2.5%)	117,825	118,214	6,379	8.4x	7.3x	6.1x	67.1x	28.1x	22.6x	22.4%	77.4%	25.9%
Workday	US	11,000	205.58	69.7%	28.8%	(1.1%)	46,542	46,179	1,892	15.2x	12.9x	10.5x	NM	65.9x	49.2x	26.4%	75.6%	19.6%
Shopify	CA	4,000	300.15	105.7%	124.9%	8.3%	33,694	31,801	1,997	27.0x	21.0x	15.8x	NM	NM	NM	41.0%	55.8%	4.1%
Constellation Software	CA	19,000	943.57	21.7%	48.8%	7.6%	19,996	19,819	717	6.3x	5.6x	4.9x	36.3x	21.4x	18.2x	15.2%	66.3%	26.3%
Sage Group	UK	13,003	10.20	22.9%	32.8%	8.6%	11,080	11,616	457	4.7x	4.6x	4.3x	17.0x	17.8x	16.7x	4.8%	NA	26.0%
Zendesk	US	2,950	89.03	63.4%	55.5%	5.1%	9,755	9,889	444	15.2x	12.2x	9.4x	NM	NM	NM	35.0%	74.1%	6.6%
Yonyou Networks	CN	15,779	3.91	37.4%	64.3%	18.2%	9,731	9,698	778	8.5x	7.2x	5.9x	60.4x	45.2x	36.1x	24.8%	71.3%	15.9%
Tyler Technologies	US	5,053	216.02	(2.7%)	19.0%	1.3%	8,283	8,316	76	8.7x	7.7x	6.9x	43.7x	27.1x	24.0x	15.9%	51.8%	28.3%
Aveva Group	UK	4,500	51.36	44.9%	68.1%	12.7%	8,267	8,105	166	8.1x	8.0x	7.5x	54.6x	30.7x	26.6x	15.6%	NA	26.1%
Guidewire Software	US	2,314	101.38	14.2%	27.7%	(1.6%)	8,294	7,595	1,014	10.1x	10.2x	8.8x	NM	47.5x	36.2x	0.9%	NA	21.4%
Anaplan	AU	1,299	50.47	NA	85.8%	19.3%	6,519	6,240	333	23.6x	18.9x	14.7x	NM	NM	NM	37.0%	75.1%	(16.9%)
Wisetech	AU	1,500	19.43	67.7%	67.4%	14.9%	6,161	6,153	30	30.6x	22.2x	17.3x	NM	69.1x	50.2x	38.0%	NA	32.1%
RealPage	US	6,300	58.85	6.8%	22.9%	0.9%	5,431	5,894	253	6.5x	5.9x	5.3x	40.2x	21.0x	18.0x	14.0%	61.7%	28.3%
Medidata Solutions	US	1,998	90.51	12.4%	37.7%	0.4%	5,433	5,430	206	8.2x	7.3x	6.4x	67.3x	30.8x	25.3x	16.4%	75.4%	23.8%
j2 Global	US	2,587	88.89	2.6%	29.3%	4.5%	4,350	5,213	227	4.3x	3.9x	3.6x	11.3x	9.5x	8.8x	11.2%	83.4%	40.7%
Blackbaud	US	3,353	83.50	(18.5%)	33.4%	9.2%	4,002	4,680	25	5.4x	5.2x	5.0x	38.5x	26.3x	24.2x	5.3%	59.7%	19.9%
Prosegur	ES	167,987	4.70	(28.0%)	(5.7%)	10.8%	2,813	3,803	1,005	0.9x	0.8x	0.8x	7.9x	6.6x	5.9x	5.0%	26.0%	12.2%
Five9	US	983	51.29	48.4%	18.7%	(1.4%)	3,061	2,979	299	10.9x	9.7x	8.3x	NM	59.9x	45.0x	18.7%	63.0%	16.3%
Everbridge	US	787	89.42	88.6%	63.4%	11.2%	2,944	2,798	258	17.6x	14.2x	11.3x	NM	NM	NM	33.9%	70.7%	2.4%
Workiva	US	1,357	58.09	138.1%	68.2%	3.1%	2,623	2,551	114	10.0x	8.9x	7.7x	NM	NM	NM	16.8%	73.5%	(3.8%)
Appian	US	1,058	36.07	(0.2%)	30.6%	(0.1%)	2,334	2,258	75	9.6x	8.8x	7.5x	NM	NM	NM	13.3%	64.9%	(9.5%)
Technology One	AU	848	5.53	75.8%	30.3%	10.1%	1,752	1,704	48	7.9x	8.3x	7.2x	28.4x	30.4x	24.7x	(3.5%)	NA	27.4%
SPS Commerce	US	1,231	102.21	39.1%	25.6%	(1.2%)	1,831	1,667	185	6.5x	6.0x	5.5x	38.6x	25.2x	21.9x	11.2%	68.4%	24.0%
Enghouse	CA	1,446	26.47	(9.3%)	10.8%	5.3%	1,447	1,290	153	5.0x	4.1x	3.6x	17.3x	14.7x	12.6x	19.2%	NA	28.2%
QAD	US	1,980	40.21	(19.8%)	2.4%	(6.3%)	760	636	152	2.0x	1.9x	1.8x	67.3x	39.8x	25.4x	(0.9%)	53.4%	4.8%
Model N	US	782	19.50	4.8%	45.6%	7.3%	633	628	54	4.3x	4.4x	3.9x	NM	59.4x	43.6x	(6.1%)	NA	7.5%
BasWare	FI	1,386	20.66	(50.8%)	(54.3%)	(7.2%)	298	338	39	2.1x	2.0x	1.9x	NM	NM	17.5x	3.4%	52.6%	1.0%
American Software	US	452	13.15	(9.7%)	31.2%	4.1%	409	323	86	3.0x	2.9x	2.8x	24.9x	22.4x	19.1x	(1.5%)	NA	13.1%
Freelancer	AU	390	0.57	74.5%	(1.7%)	(0.4%)	259	236	23	6.4x	5.9x	5.1x	NM	NM	NM	10.1%	85.0%	4.0%
ChannelAdvisor	US	730	8.76	(37.7%)	(24.5%)	(7.9%)	244	216	48	1.6x	1.6x	1.5x	NM	13.7x	11.4x	1.0%	78.3%	11.9%
Average										9.1x	7.8x	6.6x	36.5x	30.8x	24.3x	14.2%	66.7%	17.1%
Median										7.2x	6.6x	5.7x	37.4x	26.7x	22.6x	13.7%	70.7%	19.8%

Public Comps – Financial Application

																CY		
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	L1M	(m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
Intuit	US	8,900	\$261.33	27.9%	33.4%	5.3%	\$67,748	\$64,850	\$3,346	9.8x	9.3x	8.4x	33.2x	25.8x	22.9x	12.4%	NA	35.9%
Fidelity National	US	47,000	122.68	15.7%	21.7%	2.6%	39,703	48,794	576	5.8x	5.8x	5.5x	20.3x	14.8x	13.8x	0.4%	35.0%	39.0%
Fiserv	US	24,000	91.16	23.0%	24.9%	4.6%	35,775	41,580	452	7.1x	6.7x	6.4x	21.9x	17.7x	16.7x	6.1%	46.8%	38.0%
SS&C	US	22,600	57.61	11.0%	28.4%	1.6%	14,575	22,941	155	5.5x	4.9x	4.7x	17.0x	12.2x	11.3x	37.6%	52.8%	39.9%
MSCI	US	3,179	238.79	44.3%	64.2%	7.2%	20,220	22,345	643	15.4x	14.5x	13.2x	29.5x	26.4x	23.7x	7.8%	79.6%	54.8%
Temenos	CH	5,388	178.98	18.5%	49.4%	3.7%	12,414	12,974	97	14.9x	13.1x	11.8x	50.6x	34.0x	29.9x	17.6%	81.8%	38.6%
Black Knight	US	4,700	60.15	12.3%	34.1%	6.0%	8,884	10,577	12	9.4x	8.9x	8.2x	29.3x	17.9x	16.3x	6.9%	38.0%	49.6%
Jack Henry & Associates	US	6,307	133.92	2.7%	6.9%	1.3%	10,339	10,339	35	6.4x	6.5x	6.0x	21.6x	19.9x	18.5x	0.2%	NA	32.5%
Fair Isaac	US	3,896	314.02	62.4%	70.5%	5.5%	9,103	9,849	77	9.1x	8.5x	7.8x	39.5x	27.8x	24.4x	9.2%	NA	30.6%
Envestnet	US	3,920	68.37	24.4%	39.7%	0.1%	3,546	3,850	246	4.7x	4.2x	3.6x	49.2x	19.9x	16.0x	11.5%	69.4%	21.4%
SimCorp	DK	1,682	96.82	19.6%	41.7%	(0.4%)	3,838	3,817	79	8.7x	7.7x	7.2x	30.4x	26.0x	24.1x	13.0%	60.9%	29.7%
Q2 Holdings	US	1,190	76.36	33.8%	58.2%	3.0%	3,567	3,622	165	14.1x	11.7x	9.5x	NM	NM	NM	28.9%	52.3%	6.7%
Oracle Financial	IN	8,818	45.98	(22.5%)	(12.2%)	(5.6%)	3,945	3,486	457	4.9x	4.6x	4.2x	11.3x	10.7x	9.6x	8.7%	NA	43.4%
Ebix	US	9,263	50.22	(34.1%)	14.3%	0.3%	1,533	2,266	96	4.3x	3.7x	3.2x	13.4x	10.6x	10.1x	23.8%	67.5%	34.6%
Bottomline Technologies	US	1,700	44.24	(11.2%)	(6.7%)	0.2%	1,926	1,948	88	4.7x	4.5x	4.1x	43.5x	19.4x	18.0x	6.2%	NA	23.2%
IRESS	AU	1,850	9.77	9.7%	25.7%	1.8%	1,686	1,807	22	5.5x	5.1x	4.8x	23.4x	18.8x	17.0x	7.2%	28.2%	27.4%
									Average	8.1x	7.5x	6.8x	28.9x	20.1x	18.2x	12.4%	55.7%	34.1%
									Median	6.8x	6.6x	6.2x	29.3x	19.4x	17.0x	9.0%	52.8%	35.2%

Public Comps – Human Capital Management

Company Name	HQ	Employee	Share Price 06-30-19	Share Price Performance			Market Cap (m)	EV (m)	Cash (m)	EV/Revenue			EV/EBITDA			CY Revenue Growth	CY19E Margins	
				LTM	L6M	L1M				LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITD
ADP	US	57,000	\$165.33	23.3%	27.9%	2.7%	\$71,956	\$72,125	\$1,834	5.4x	4.9x	4.6x	21.8x	20.2x	17.9x	9.4%	NA	24.5%
ServiceNow	US	8,666	274.57	59.2%	52.3%	4.6%	50,937	50,368	1,662	17.9x	14.6x	11.4x	NM	52.9x	39.6x	32.2%	80.9%	27.6%
Workday	US	11,000	205.58	69.7%	28.8%	(1.1%)	46,542	46,179	1,892	15.2x	12.9x	10.5x	NM	65.9x	49.2x	26.4%	75.4%	19.6%
Paycom	US	3,050	226.72	129.4%	87.0%	8.4%	13,039	13,006	91	21.2x	18.1x	14.7x	63.3x	43.7x	35.0x	27.1%	84.5%	41.3%
TriNet	US	3,100	67.80	21.2%	64.6%	6.6%	4,745	4,915	307	1.4x	5.3x	4.8x	16.8x	12.8x	11.4x	(73.4%)	74.5%	41.3%
Paylocity	US	2,600	93.82	59.4%	57.3%	(6.9%)	4,970	4,831	139	11.3x	9.5x	7.9x	NM	32.9x	26.7x	26.3%	NA	28.8%
Instructure	US	1,291	42.50	(0.1%)	13.9%	(0.9%)	1,555	1,513	91	6.9x	5.8x	4.8x	NM	NM	NM	23.5%	71.4%	(5.3%)
Upland Software	US	667	45.53	32.5%	73.1%	(5.3%)	1,151	1,421	14	8.5x	6.7x	6.2x	35.3x	18.3x	16.6x	40.7%	69.5%	36.9%
WageWorks	US	1,958	50.79	1.6%	89.5%	0.2%	2,025	1,280	966	2.9x	2.7x	2.6x	16.2x	10.5x	8.9x	2.6%	66.1%	25.9%
Benefitfocus	US	1,450	27.15	(19.2%)	(40.6%)	(6.2%)	883	1,014	144	3.8x	3.3x	2.9x	NM	59.5x	30.6x	17.6%	52.9%	5.6%
Solium	CA	781	14.64	67.3%	73.0%	3.2%	831	741	97	6.8x	NA	NA	NM	NA	NA	(100.0%)	NA	NA
Freelancer	AU	390	0.57	74.5%	(1.7%)	(0.4%)	259	236	23	6.4x	5.9x	5.1x	NM	NM	NM	10.1%	85.0%	4.0%
									Average	9.0x	8.2x	6.9x	30.7x	35.2x	26.2x	3.5%	73.4%	22.8%
									Median	6.9x	5.9x	5.1x	21.8x	32.9x	26.7x	20.5%	74.5%	25.9%

Public Comps – Infrastructure

																CY		
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	LTM	(m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
VMware	US	22,990	\$167.21	13.8%	5.6%	(12.5%)	\$68,424	\$69,966	\$3,311	7.6x	7.0x	6.3x	28.2x	17.8x	16.4x	12.0%	87.6%	39.0%
ServiceNow	US	8,666	274.57	59.2%	52.3%	4.6%	50,937	50,368	1,662	17.9x	14.6x	11.4x	NM	52.9x	39.6x	32.2%	80.9%	27.6%
Red Hat	US	13,360	187.76	39.7%	7.5%	1.4%	33,439	31,390	2,473	9.0x	8.4x	7.1x	45.2x	30.8x	26.1x	14.9%	NA	27.3%
Atlassian	UK	3,315	130.84	109.3%	49.4%	3.7%	31,541	30,614	1,773	29.5x	22.3x	17.7x	NM	NM	71.1x	43.2%	NA	23.5%
Splunk	US	4,400	125.75	26.9%	22.3%	6.9%	18,884	18,080	2,675	9.4x	8.0x	6.6x	NM	47.2x	34.4x	25.6%	84.5%	16.9%
Symantec	US	11,900	21.76	5.4%	17.2%	15.3%	13,452	15,861	2,043	3.4x	3.3x	3.2x	15.9x	7.7x	7.1x	1.0%	NA	43.0%
Akamai Technologies	US	7,519	80.14	9.4%	31.3%	4.3%	13,151	13,311	1,119	4.8x	4.7x	4.4x	17.5x	11.4x	10.4x	4.9%	66.0%	40.9%
Citrix	US	8,200	98.14	(6.4%)	(3.6%)	3.6%	12,920	13,288	1,786	4.4x	4.3x	4.1x	16.6x	12.0x	11.4x	3.9%	86.9%	36.0%
Micro Focus	UK	14,800	26.23	50.2%	52.8%	9.0%	9,004	13,242	621	4.2x	3.8x	4.0x	12.8x	9.2x	8.8x	NA	NA	41.3%
Juniper Networks	US	9,283	26.63	(2.9%)	(0.4%)	5.4%	9,169	7,778	3,394	1.7x	1.7x	1.7x	9.8x	8.4x	7.7x	(3.9%)	60.1%	20.9%
F5 Networks	US	4,694	145.63	(15.6%)	(9.3%)	7.1%	8,693	7,380	1,314	3.4x	3.3x	3.1x	10.9x	8.7x	NA	3.4%	NA	37.4%
Proofpoint	US	2,613	120.25	4.3%	41.3%	4.8%	6,695	6,497	257	8.6x	7.4x	6.1x	NM	48.4x	35.6x	22.3%	77.9%	15.3%
Trend Micro	JP	6,562	44.58	(21.8%)	(17.6%)	(2.0%)	6,189	4,733	1,417	3.2x	3.0x	2.9x	10.2x	9.2x	8.6x	7.2%	79.7%	32.8%
New Relic	US	1,774	86.51	(14.0%)	7.8%	(15.0%)	5,028	4,692	745	9.8x	8.2x	6.5x	NM	57.0x	38.3x	28.8%	NA	14.4%
Nutanix	US	4,930	25.94	(49.7%)	(35.6%)	(20.6%)	4,824	4,334	941	3.5x	3.5x	2.8x	NM	NM	NM	0.4%	NA	(26.3%)
LogMeIn	US	3,554	73.68	(28.6%)	(8.1%)	1.2%	3,671	3,840	145	3.1x	3.1x	2.9x	11.1x	9.3x	9.7x	4.5%	82.1%	32.7%
Pure Storage	US	3,150	15.27	(36.1%)	(3.4%)	(5.7%)	3,865	3,282	1,166	2.3x	1.9x	1.5x	NM	22.4x	14.9x	27.4%	67.0%	8.5%
Qualys	US	1,210	87.08	3.3%	16.0%	(3.4%)	3,410	3,153	298	10.9x	9.8x	8.4x	36.8x	25.2x	21.5x	15.5%	78.7%	38.8%
FireEye	US	3,200	14.81	(3.8%)	(8.0%)	(1.9%)	3,112	3,046	1,130	3.6x	3.4x	3.1x	NM	24.7x	19.3x	7.7%	74.9%	13.8%
Mimecast	UK	1,495	46.71	13.3%	40.2%	0.2%	2,865	2,830	174	8.3x	7.1x	5.9x	NM	43.7x	31.3x	24.1%	NA	16.2%
Rapid7	US	1,246	57.84	105.0%	87.6%	10.4%	2,788	2,735	251	10.4x	8.7x	7.0x	NM	NM	NM	29.2%	75.3%	3.6%
Sophos	UK	3,381	5.02	(40.5%)	8.5%	(4.2%)	2,422	2,549	172	3.6x	3.7x	3.2x	32.1x	21.4x	13.4x	(2.3%)	NA	17.4%
Software AG	DE	4,737	34.37	(26.2%)	(5.0%)	2.9%	2,542	2,335	549	2.4x	2.3x	2.2x	8.1x	7.8x	8.0x	3.7%	77.7%	29.2%
Progress Software	US	1,412	43.62	12.4%	24.4%	2.7%	1,941	2,111	129	5.3x	5.0x	4.8x	15.9x	10.1x	9.1x	6.9%	86.5%	49.3%
NetScout Systems	US	2,585	25.39	(14.5%)	7.6%	1.3%	1,967	2,031	486	2.2x	2.3x	2.2x	15.7x	NA	NA	(1.3%)	NA	0.0%
Commvault	US	2,559	49.62	(24.6%)	(14.1%)	6.1%	2,267	1,808	458	2.5x	2.5x	2.4x	42.1x	16.5x	12.5x	(0.2%)	NA	15.4%
Talend	FR	1,183	38.59	(38.0%)	7.2%	(20.1%)	1,172	1,175	29	5.5x	4.7x	3.9x	NM	NM	NM	21.7%	76.7%	(9.1%)
SecureWorks	US	2,684	13.29	6.7%	(18.3%)	(14.9%)	1,083	1,000	111	1.9x	1.9x	1.7x	NM	NM	NM	4.0%	55.6%	0.5%
A10 Networks	US	834	6.82	9.5%	12.5%	11.4%	516	399	123	1.7x	1.7x	1.5x	NM	NA	NA	2.9%	77.5%	0.0%
Brightcove	US	496	10.33	7.0%	46.1%	1.1%	391	381	29	2.3x	2.1x	1.9x	NM	50.1x	28.0x	11.7%	61.5%	4.1%
									Average	6.2x	5.4x	4.7x	20.5x	24.0x	21.0x	12.1%	75.6%	20.3%
									Median	3.9x	3.8x	3.6x	15.9x	17.8x	14.9x	7.2%	77.7%	19.1%

Public Comps – IT Security

Company Name	HQ	Employee	Share Price 06-30-19	Share Price Performance			Market Cap (m)	EV (m)	Cash (m)	EV/Revenue			EV/EBITDA			CY Revenue Growth 19/18	CY19E Margins	
				LTM	L6M	LTM				LTM	CY19E	CY20E	LTM	CY19E	CY20E		Gross	EBITDA
Cisco	US	74,200	\$54.73	27.2%	28.0%	2.2%	\$234,285	\$223,351	\$34,643	4.4x	4.2x	4.1x	14.4x	11.8x	11.4x	4.0%	NA	35.8%
Verisign	US	900	209.16	52.2%	42.4%	6.8%	24,928	25,469	1,253	20.8x	20.7x	19.8x	30.7x	28.7x	27.6x	1.4%	84.8%	72.1%
Palo Alto Networks	US	6,503	203.76	(0.8%)	10.7%	(0.3%)	19,556	18,081	3,048	6.6x	5.7x	4.8x	NM	22.2x	17.6x	22.1%	NA	25.8%
Splunk	US	4,400	125.75	26.9%	22.3%	6.9%	18,884	18,080	2,675	9.4x	8.0x	6.6x	NM	47.2x	34.4x	25.6%	84.5%	16.9%
Symantec	US	11,900	21.76	5.4%	17.2%	15.3%	13,452	15,861	2,043	3.4x	3.3x	3.2x	15.9x	7.7x	7.1x	1.0%	NA	43.0%
Check Point Software	IL	5,070	115.61	18.4%	12.3%	2.7%	17,600	15,842	1,759	8.2x	7.9x	7.7x	17.1x	15.4x	14.6x	4.1%	89.6%	51.7%
Okta	US	1,770	123.51	145.2%	100.5%	15.9%	14,097	13,972	547	31.7x	25.5x	19.5x	NM	NM	NM	37.3%	76.1%	(9.2%)
Fortinet	US	6,015	76.83	23.1%	9.2%	1.0%	13,120	11,357	1,802	6.1x	5.4x	4.8x	36.9x	20.9x	17.6x	16.0%	76.2%	26.0%
Proofpoint	US	2,613	120.25	4.3%	41.3%	4.8%	6,695	6,497	257	8.6x	7.4x	6.1x	NM	48.4x	35.6x	22.3%	77.9%	15.3%
Trend Micro	JP	6,562	44.58	(21.8%)	(17.6%)	(2.0%)	6,189	4,733	1,417	3.2x	3.0x	2.9x	10.2x	9.2x	8.6x	7.2%	79.7%	32.8%
CyberArk	IL	1,146	127.84	103.0%	74.5%	(3.3%)	4,825	4,358	466	11.9x	10.4x	8.8x	64.3x	38.6x	32.2x	22.0%	88.2%	27.0%
Verint	US	6,200	53.78	21.3%	28.1%	(5.7%)	3,537	4,001	453	3.2x	2.9x	2.7x	21.4x	11.9x	10.5x	11.7%	68.4%	24.4%
Qualys	US	1,210	87.08	3.3%	16.0%	(3.4%)	3,410	3,153	298	10.9x	9.8x	8.4x	36.8x	25.2x	21.5x	15.5%	78.7%	38.8%
FireEye	US	3,200	14.81	(3.8%)	(8.0%)	(1.9%)	3,112	3,046	1,130	3.6x	3.4x	3.1x	NM	24.7x	19.3x	7.7%	74.9%	13.8%
Mimecast	UK	1,495	46.71	13.3%	40.2%	0.2%	2,865	2,830	174	8.3x	7.1x	5.9x	NM	43.7x	31.3x	24.1%	NA	16.2%
Rapid7	US	1,246	57.84	105.0%	87.6%	10.4%	2,788	2,735	251	10.4x	8.7x	7.0x	NM	NM	NM	29.2%	75.3%	3.6%
Varonis Systems	US	1,451	61.94	(16.9%)	16.8%	(3.1%)	1,874	1,767	164	6.5x	6.4x	5.9x	NM	NM	NM	1.4%	88.2%	(2.9%)
Secureworks	US	2,684	13.29	6.7%	(18.3%)	(14.9%)	1,083	1,000	111	1.9x	1.9x	1.7x	NM	NM	NM	4.0%	55.6%	0.5%
Zix	US	265	9.09	68.6%	62.3%	(1.2%)	493	754	17	9.1x	4.5x	3.7x	NM	21.5x	15.3x	138.2%	61.6%	20.8%
MobileIron	US	889	6.20	39.3%	36.0%	10.3%	674	585	107	3.0x	2.8x	2.5x	NM	NM	48.3x	9.0%	82.2%	1.9%
F-Secure	FI	1,680	2.82	(35.8%)	6.5%	6.9%	445	474	26	2.1x	1.9x	1.8x	49.9x	18.7x	15.6x	15.1%	NA	10.1%
Absolute Software	CA	466	6.10	15.8%	8.0%	(3.1%)	252	216	35	2.2x	2.1x	2.0x	17.9x	10.9x	10.6x	5.0%	NA	19.6%
Cheetah Mobile	CN	2,592	3.55	(62.9%)	(43.7%)	(20.6%)	485	96	510	0.1x	0.1x	0.1x	1.6x	19.1x	4.1x	(8.0%)	67.1%	0.8%
Average										7.6x	6.7x	5.8x	26.4x	23.7x	20.2x	18.1%	77.0%	21.1%
Median										6.5x	5.4x	4.8x	19.7x	21.2x	17.6x	11.7%	77.9%	19.6%

Public Comps – Marketing Application

																CY		
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	L1M	(m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
SAP	DE	98,659	\$137.07	18.7%	37.3%	9.9%	\$163,618	\$171,427	\$8,892	6.0x	5.5x	5.1x	23.1x	16.2x	14.4x	10.4%	71.6%	33.9%
Five9	US	983	51.29	48.4%	18.7%	(1.4%)	3,061	2,979	299	10.9x	9.7x	8.3x	NM	59.9x	45.0x	18.7%	63.0%	16.3%
LivePerson	US	1,168	28.04	32.9%	50.5%	(0.4%)	1,716	1,668	238	6.5x	5.8x	4.9x	NM	NM	64.9x	15.6%	74.0%	3.8%
SDL	UK	4,149	6.48	13.7%	6.4%	(6.2%)	588	570	25	1.4x	1.2x	1.1x	13.7x	10.9x	9.6x	14.0%	52.5%	11.1%
ChannelAdvisor	US	730	8.76	(37.7%)	(24.5%)	(7.9%)	244	216	48	1.6x	1.6x	1.5x	NM	13.7x	11.4x	1.0%	78.3%	11.9%
									Average	5.3x	4.8x	4.2x	18.4x	25.2x	29.1x	11.9%	67.9%	15.4%
									Median	6.0x	5.5x	4.9x	18.4x	15.0x	14.4x	14.0%	71.6%	11.9%

Public Comps – Storage

																CY		
			Share Price	Share Price Performance			Market Cap	EV	Cash	EV/Revenue			EV/EBITDA			Revenue Growth	CY19E Margins	
Company Name	HQ	Employee	06-30-19	LTM	L6M	L1M	Cap (m)	(m)	(m)	LTM	CY19E	CY20E	LTM	CY19E	CY20E	19/18	Gross	EBITDA
Microsoft	US	131,000	\$133.96	35.8%	33.4%	6.5%	\$1,026,511	\$981,318	\$131,536	8.0x	7.5x	6.7x	18.9x	17.5x	14.9x	10.8%	NA	42.8%
Amazon	US	647,500	1,893.63	11.4%	28.1%	4.3%	932,294	964,279	37,020	4.0x	3.5x	3.0x	30.7x	22.5x	17.9x	18.3%	42.0%	15.5%
Alphabet	US	103,459	1,082.80	(4.1%)	3.5%	(3.4%)	751,069	649,853	113,488	4.6x	4.0x	3.5x	15.4x	11.2x	9.6x	17.6%	55.5%	35.9%
Verizon	US	139,400	57.13	13.6%	3.4%	0.5%	236,273	371,787	2,322	2.8x	2.8x	2.8x	7.7x	7.7x	7.6x	0.8%	58.5%	36.6%
Oracle	US	136,000	56.97	29.3%	27.1%	10.2%	190,042	209,190	37,827	5.3x	5.3x	5.1x	13.0x	11.1x	10.7x	(0.1%)	NA	47.3%
IBM	US	350,600	137.90	(1.3%)	22.0%	6.4%	122,268	159,491	18,018	2.1x	2.1x	2.0x	9.3x	8.5x	8.4x	(0.9%)	47.2%	24.4%
Salesforce	US	35,000	151.73	11.2%	12.7%	(2.5%)	117,825	118,214	6,379	8.4x	7.3x	6.1x	67.1x	28.1x	22.6x	22.4%	77.4%	25.9%
CenturyLink	US	45,000	11.76	(36.9%)	(23.0%)	9.9%	12,822	49,933	441	2.2x	2.2x	2.3x	5.5x	5.5x	5.6x	(4.6%)	55.1%	40.4%
Iron Mountain	US	26,200	31.30	(10.6%)	(3.4%)	1.7%	8,979	19,246	161	7.3x	4.5x	4.3x	13.5x	13.4x	12.5x	63.8%	57.7%	33.4%
NetApp	US	10,500	61.70	(21.4%)	4.4%	2.1%	14,809	12,697	3,905	2.1x	2.1x	1.9x	9.4x	8.2x	7.0x	(0.7%)	NA	25.3%
Dropbox	US	2,323	25.05	(22.7%)	20.5%	11.9%	10,300	10,078	915	6.9x	6.1x	5.4x	NM	26.4x	21.7x	18.0%	75.2%	23.2%
Nutanix	US	4,930	25.94	(49.7%)	(35.6%)	(20.6%)	4,824	4,334	941	3.5x	3.5x	2.8x	NM	NM	NM	0.4%	NA	(26.3%)
Box	US	1,980	17.61	(29.5%)	4.1%	(8.2%)	2,580	2,743	231	4.3x	4.0x	3.5x	NM	51.9x	32.3x	13.4%	71.3%	7.7%
CommVault	US	2,559	49.62	(24.6%)	(14.1%)	6.1%	2,267	1,808	458	2.5x	2.5x	2.4x	42.1x	16.5x	12.5x	(0.2%)	NA	15.4%
Carbonite	US	965	26.04	(25.4%)	5.3%	9.1%	897	1,356	253	4.3x	2.8x	2.3x	40.1x	10.1x	8.4x	63.3%	80.8%	27.6%
Brightcove	US	496	10.33	7.0%	46.1%	1.1%	391	381	29	2.3x	2.1x	1.9x	NM	50.1x	28.0x	11.7%	61.5%	4.1%
									Average	4.4x	3.9x	3.5x	22.7x	19.3x	14.6x	14.6%	62.0%	23.7%
									Median	4.2x	3.5x	2.9x	14.5x	13.4x	12.5x	11.3%	58.5%	25.6%

- 1 Key Sector Takeaways
- 2 Recent Software Transaction Trends
- 3 Public Market SaaS Analyses
- 4 SaaS CEO Commentary
- 5 Key SaaS Metrics
- 6 Appendix A: GP Bullhound SaaS Index
- 7 Appendix B: Software Public Comparables by Category
- 8 Appendix C: GP Bullhound Software Report Overview, Software Credentials & Team**

GP Bullhound's Recent Activity in the Software Space



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