



## EQUITY RESEARCH

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### ■ Software

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## SECTOR NOTE

# MONTHLY SOFTWARE OVERVIEW – FEBRUARY 2024

### THE TD COWEN INSIGHT

The IGV Software index was up +2.4% in February following +3.6% in January. After security and megacaps outperformed in Jan, data/analytics and small caps had strong outperformance in Feb. Avg EV/NTM Sales for our custom group stood at ~8.6x in Feb vs. ~8.5x in Jan, hitting nearly ~18 month highs. C4Q earnings have been healthy so far with a 2.2% avg beat, slightly below the 2.3% prior 4 qtr avg.

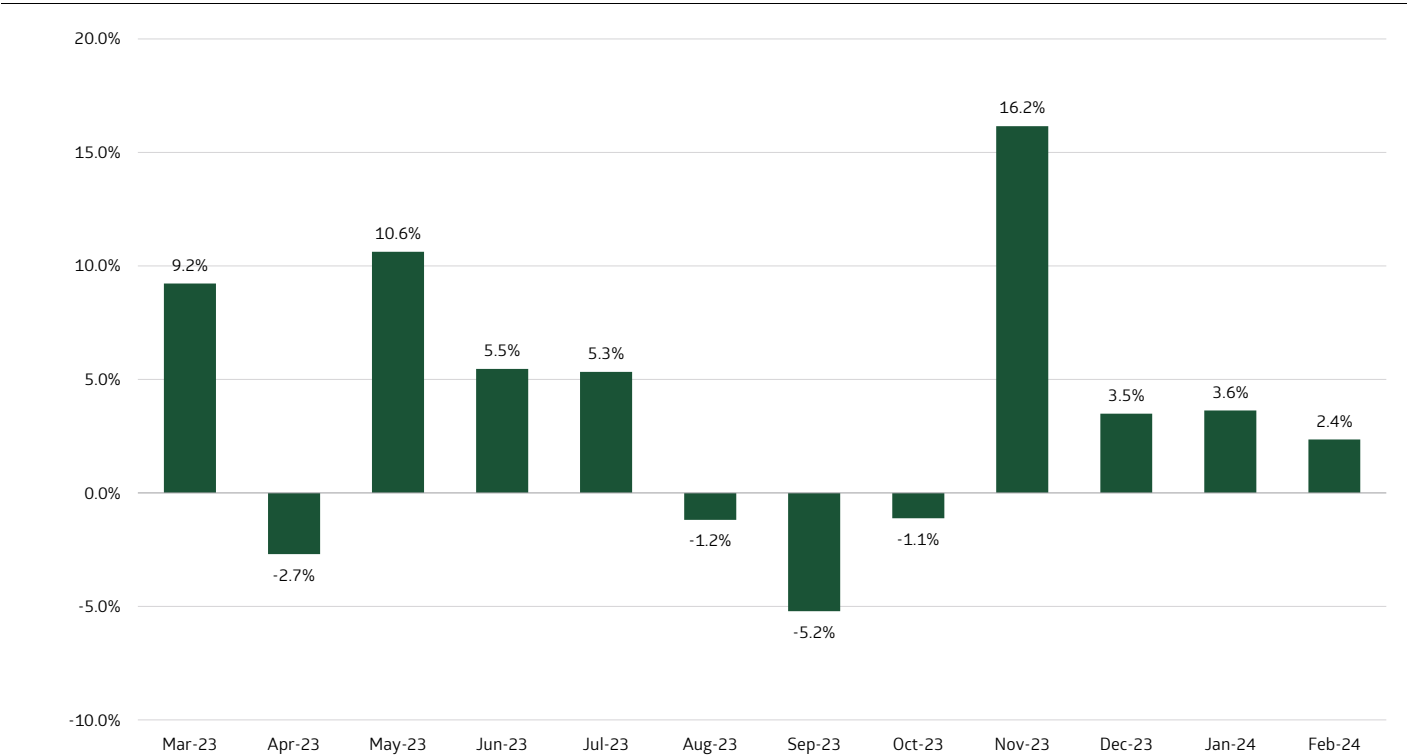
The IGV Software index was up +2.4% in February vs. +3.6% in January and following +59% in '23. Historically, March is a seasonally in-line month with a 15-year median monthly return of +1.8% vs. the +1.6% average.

- Top performers M/M included PLTR (+56%), CFLT (+52%), AI (+49%), FROG (+38%), OKTA (+30%), and NET (+25%). The weakest performers included LPSN (-55%), TDC (-19%), TEAM (-17%), TWLO (-15%), DT (-13%), and DOCU (-13%).
- Of our tracked stocks, Small caps (\$1-5b) performed best in Feb, up +7.4% M/M. SMIDcaps (\$5-20b) were second, up +5.4%, and Large caps (>\$20b) were third, up +4.7% M/M. Micro caps (less than \$1b) were weakest in Feb, down -11.6%.
- In terms of sectors, of our tracked stocks, Data/Analytics performed the best, up +11.7% M/M, led by PLTR, CFLT and AI. Security followed and was up +7.1%, while Mega Cap Software was up +2.3%. SaaS Apps/Tools lagged the group, -0.7% M/M. We have revised our Mega Cap Software comp group to include CRM, INTU, NOW, and ADBE.
- The average NTM P/E multiple on Mega cap names (ADBE, CRM, IBM, INTU, MSFT, NOW, ORCL, SAP) was ~33.6x to end Feb, up from ~33.3x at the end of last month.
- The broader enterprise software group (our custom basket) stood at ~8.6x EV/NTM Sales at month-end, above ~8.5x exiting last month. Current valuation is ~24% below 5-year median of ~11.3x but is ~7% above 10-yr median of ~8.0x and at the highest levels since mid '22.
- Stocks with the highest short interest as a % of float include (in order of ranking) AI, ASAN, PD, CFLT, BRZE, LPSN, and IOT.
- Monthly currency movement: The EUR vs. USD decreased -0.4% M/M; the GBP was down -0.7% M/M, and the JPY down -2.3% M/M.
- Truvalue ESG Employee Engagement Insight Scores were best for RMNI (84pts), AYY (80pts), MNDY (80pts), KVYO (79pts), and SPLK (79pts), above the enterprise software average of 70pts.

### Monthly Jobs Data

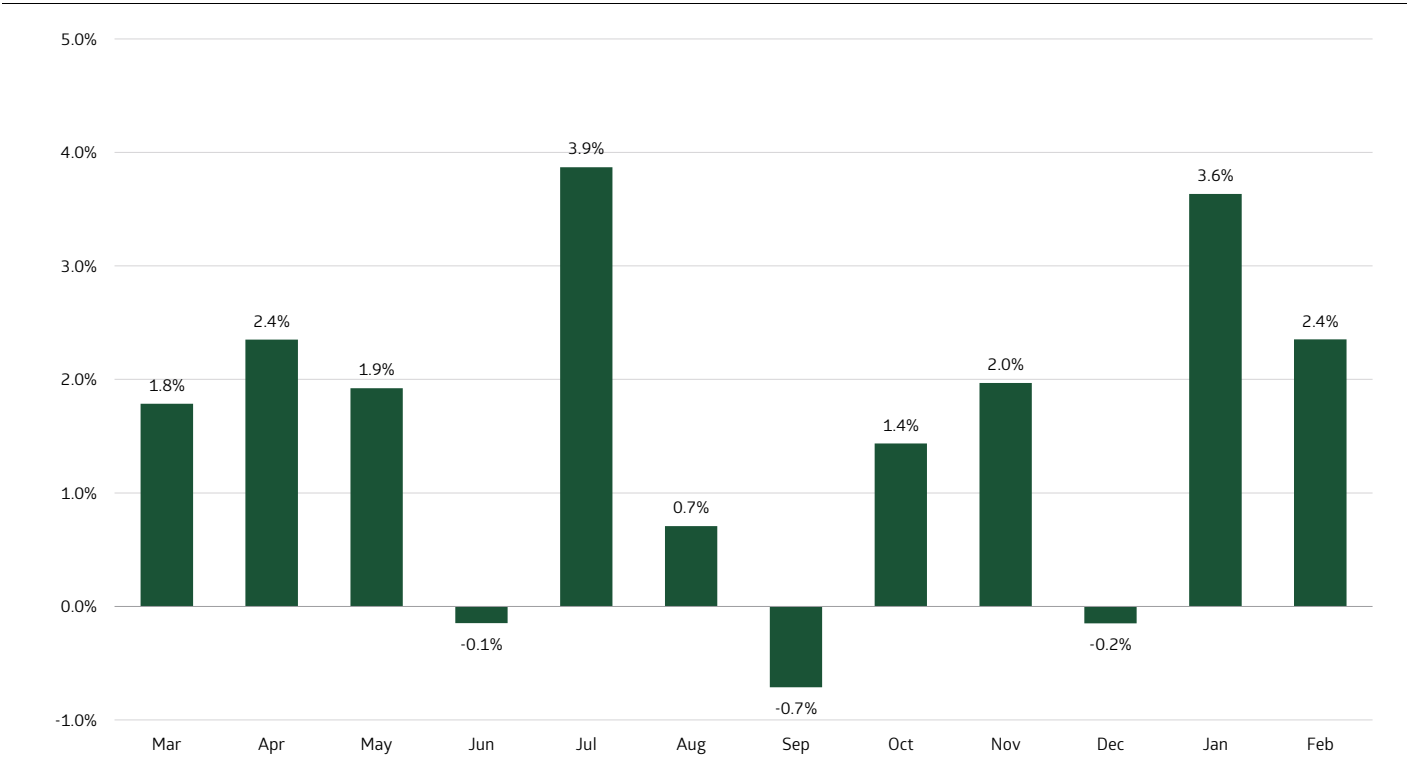
- We saw a slight average decline in sales headcount in February, following modest growth in January. Our headcount analysis shows co's with the highest net sales headcount growth (M/M % changes) included TEAM (+6%), IOT (+5%), MNDY (+4%), WDAY (+3%), and AVPT (+3%). Co's with the highest declines in net sales headcount included SPLK (-6%), BRZE (-6%), PD (-4%), HCP (-4%) and TWLO (-3%). *See charts in the back of the report for more time-series analysis in our coverage.*

Figure 1 : IGV Monthly Returns



Source: TD Cowen; FactSet

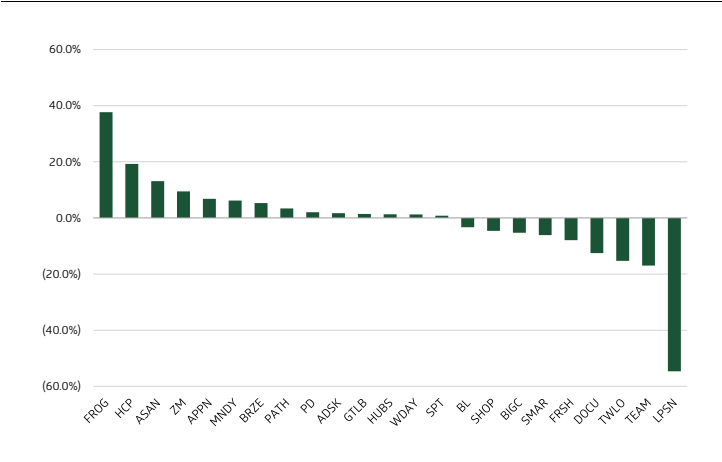
Figure 2 : 15-Year Median Monthly Returns on IGV Index (Since February 2010)



Source: TD Cowen; FactSet

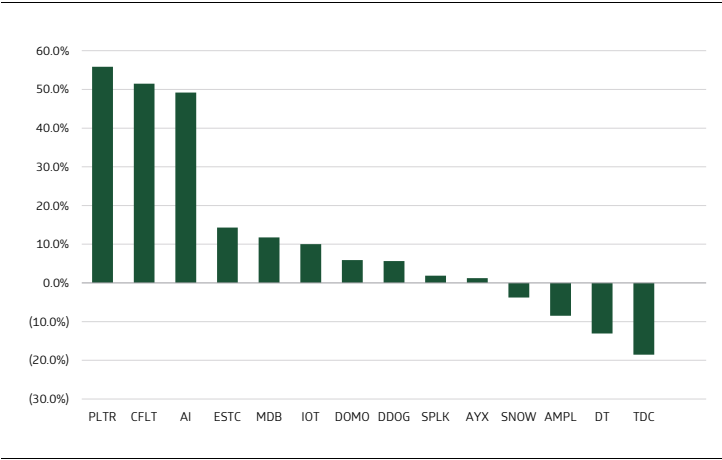
MONTHLY RETURNS - FEBRUARY

Figure 3 : SaaS Apps/Tools



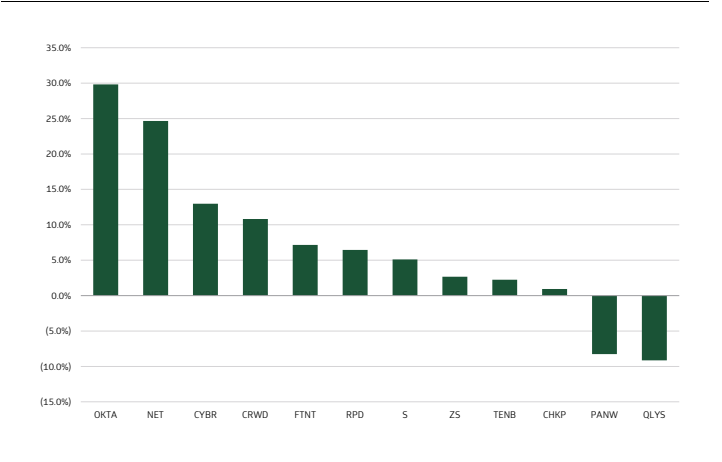
Source: TD Cowen; FactSet

Figure 5 : Data/Analytics



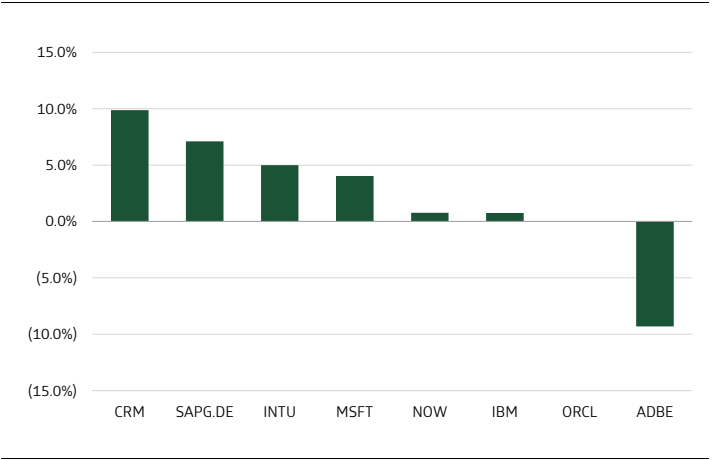
Source: TD Cowen; FactSet

Figure 4 : Security



Source: TD Cowen; FactSet

Figure 6 : Mega Cap Software



Source: TD Cowen; FactSet

Figure 7 : Monthly Performance by Sector

	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
Mega Cap Software	<b>11.5%</b>	1.0%	<b>6.6%</b>	5.0%	6.0%	1.5%	-6.9%	<b>1.9%</b>	<b>15.8%</b>	0.6%	7.1%	2.3%	2.3%
SaaS Apps/Tools	-3.4%	1.8%	-12.5%	15.8%	3.0%	<b>8.8%</b>	-2.1%	-8.2%	-10.7%	<b>16.9%</b>	<b>13.5%</b>	-2.9%	-0.7%
Data/Analytics	6.0%	3.3%	-8.8%	<b>27.8%</b>	<b>9.5%</b>	8.5%	-13.5%	1.3%	-7.2%	16.4%	7.5%	-0.6%	<b>11.7%</b>
Security	8.3%	<b>5.7%</b>	-11.9%	22.1%	-2.6%	7.4%	<b>-0.6%</b>	-1.9%	-2.5%	16.3%	12.9%	<b>3.0%</b>	7.1%

Source: TD Cowen; FactSet

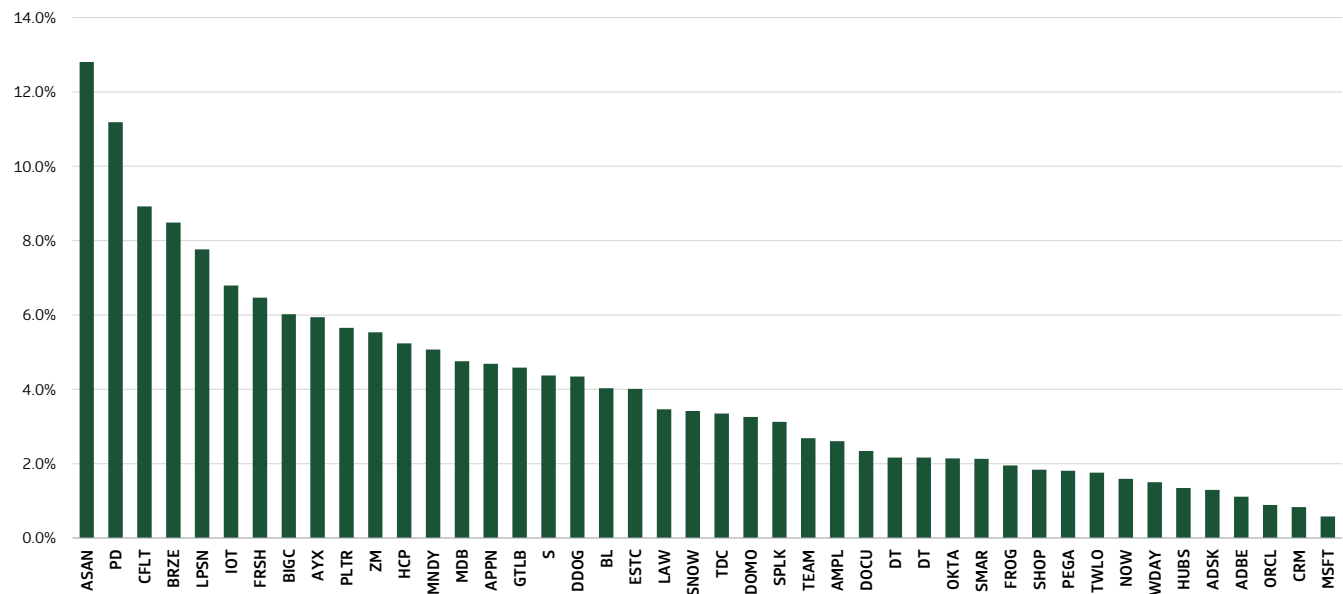
Figure 8 : Monthly Performance by Market Cap

	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24
Micro Less Than \$1 bln	-10.3%	-14.8%	-5.6%	0.9%	<b>8.7%</b>	3.9%	-12.6%	-8.8%	-14.3%	11.8%	10.8%	-5.1%	-11.6%
Small \$1 bln - \$5 bln	1.0%	-0.9%	-12.9%	16.0%	5.0%	<b>7.5%</b>	-4.9%	-5.5%	-10.0%	13.5%	11.7%	-1.6%	<b>7.4%</b>
SMID \$5 bln - \$20bln	<b>3.6%</b>	-0.1%	-11.1%	<b>26.7%</b>	0.3%	6.8%	<b>-2.6%</b>	<b>-1.8%</b>	-8.4%	14.3%	<b>19.0%</b>	1.5%	5.4%
Large Greater than \$20 bln	0.3%	<b>5.2%</b>	<b>-4.3%</b>	14.6%	6.1%	6.5%	-3.6%	-5.2%	<b>-2.4%</b>	<b>20.5%</b>	5.1%	<b>6.4%</b>	4.7%

Source: TD Cowen; FactSet

SHORT INTEREST

Figure 9 : Short Interest as a % of Shares Outstanding



Source: TD Cowen; FactSet  
Note: AI has been excluded as it is an outlier with ~ 34% short interest

Figure 10 : CY4Q23 Revenue Performance

Actual vs. Consensus							Forward Quarter Revision to Consensus						M/M Change in 1Q
	4Q22	1Q23	2Q23	3Q23	4Q23	TTM Av	1Q23	2Q23	3Q23	4Q23	1Q24	TTM Av	Consensus
SaaS Apps/Tools													
ADSK	0.3%	0.2%	1.5%	1.9%	2.6%	1.5%	(0.2%)	1.0%	2.3%	(0.1%)	(0.1%)	0.8%	(5) bps
APPN	2.1%	2.9%	2.8%	1.3%	3.3%	2.6%	2.2%	2.8%	2.1%	(1.4%)	(0.5%)	0.7%	(46) bps
ASAN	3.5%	1.2%	2.9%	1.5%		1.9%	0.9%	2.9%	2.2%	0.6%	0.1%	1.5%	0 bps
BIGC	(1.1%)	0.3%	2.8%	(0.1%)	3.2%	1.6%	(3.4%)	2.0%	(1.1%)	(0.4%)	(3.6%)	(0.8%)	(357) bps
BL	0.3%	0.7%	0.4%	0.6%	0.9%	0.6%	(2.7%)	0.1%	0.1%	(0.4%)	(0.3%)	(0.1%)	(9) bps
BRZE	3.0%	3.0%	5.9%	5.7%		4.9%	0.8%	7.5%	8.4%	4.1%	(0.0%)	5.0%	0 bps
DBX	0.7%	1.5%	1.3%	0.7%	0.4%	1.0%	2.9%	1.5%	1.2%	(0.5%)	(0.5%)	0.4%	(54) bps
DOCU	2.9%	3.1%	1.5%	1.5%		2.0%	3.1%	3.0%	2.1%	0.8%	(0.0%)	1.5%	(1) bps
FRSH	2.2%	2.6%	2.6%	0.6%	1.0%	1.7%	(0.7%)	2.7%	1.1%	0.4%	0.4%	1.1%	43 bps
GTLB	2.8%	7.7%	7.5%	5.8%		7.0%	(0.6%)	9.8%	8.4%	5.2%	0.1%	5.9%	5 bps
GWRE	3.9%	(3.2%)	3.3%	3.3%		1.1%	(3.3%)	4.0%	(2.3%)	(4.1%)	(0.1%)	(0.6%)	0 bps
HCP	0.9%	1.1%	1.8%	2.3%	(0.0%)	1.3%	(0.4%)	2.6%	2.9%	1.9%	(1.3%)	1.5%	(176) bps
HUBS	5.4%	5.6%	4.7%	4.4%	4.2%	4.7%	6.3%	6.3%	6.0%	0.4%	2.0%	3.7%	193 bps
LPSN	(3.5%)	0.2%	0.7%	2.2%	1.1%	1.1%	(18.7%)	(6.6%)	4.0%	(1.3%)	(16.6%)	(5.1%)	(1637) bps
MNDY	5.9%	4.5%	3.8%	3.7%	2.3%	3.6%	8.4%	6.1%	5.5%	1.5%	0.9%	3.5%	62 bps
PCTY	5.1%	2.0%	2.3%	0.4%	0.5%	1.3%	6.8%	2.8%	0.5%	1.8%	(0.9%)	0.1%	(93) bps
PD	1.9%	(0.0%)	3.0%	0.9%		1.3%	(2.1%)	(1.2%)	1.3%	(0.2%)	(0.2%)	(0.1%)	0 bps
SHOP	5.0%	5.1%	4.2%	2.5%	3.2%	3.8%	3.2%	8.2%	6.6%	0.1%	1.7%	4.1%	179 bps
SMAR	3.0%	2.7%	2.6%	1.9%		2.4%	0.7%	2.1%	1.9%	0.1%	(0.0%)	1.0%	0 bps
TEAM	2.7%	1.3%	2.7%	1.2%	3.6%	2.2%	1.7%	2.0%	2.6%	0.2%	3.1%	2.0%	309 bps
TWLO	2.4%	0.3%	5.1%	4.4%	2.9%	3.2%	(2.0%)	(1.5%)	1.2%	1.5%	(1.7%)	(0.1%)	(175) bps
VEEV	1.9%	2.0%	1.4%	0.0%	1.5%	1.2%	(5.6%)	1.6%	(0.1%)	(2.3%)	0.1%	(0.2%)	10 bps
WDAY	0.8%	0.9%	0.7%	1.0%	0.3%	0.7%	(0.3%)	0.7%	1.2%	0.3%	0.7%	0.7%	69 bps
ZUO	2.8%	1.0%	(0.6%)	1.1%	(0.1%)	0.4%	0.4%	1.2%	(0.8%)	(0.2%)	(2.4%)	(0.5%)	(248) bps
Average	2.3%	1.9%	2.7%	2.0%	1.8%	2.2%	(0.1%)	2.6%	2.4%	0.2%	(0.8%)	1.1%	(81) bps
Data/Analytics													
AMPL	2.7%	1.9%	1.3%	0.9%	(0.1%)	1.0%	(0.3%)	(1.8%)	5.4%	1.6%	1.3%	1.7%	135 bps
AYX	7.8%	(0.4%)	3.3%	10.4%	4.0%	4.3%	1.1%	(8.3%)	(0.4%)	0.0%	0.3%	(2.1%)	33 bps
CFLT	2.3%	4.2%	3.8%	2.3%	3.9%	3.5%	2.7%	4.4%	3.3%	(3.2%)	0.0%	1.1%	10 bps
DDOG	4.3%	2.5%	1.5%	4.3%	3.7%	3.0%	(1.2%)	1.2%	2.0%	4.4%	0.8%	2.1%	68 bps
DOMO	2.8%	0.8%	1.0%	0.9%		0.9%	(0.0%)	(0.1%)	(2.9%)	0.1%	0.0%	(0.7%)	0 bps
DT	4.5%	2.9%	1.8%	2.0%	2.1%	2.2%	7.7%	4.2%	3.9%	0.1%	0.7%	2.2%	69 bps
ESTC	0.6%	0.8%	3.2%	2.0%	2.2%	2.1%	(1.8%)	2.3%	2.6%	0.6%	0.2%	1.4%	(0) bps
IOT	8.7%	6.5%	5.7%	5.7%		6.0%	12.4%	8.9%	7.8%	3.2%	0.0%	5.0%	(0) bps
MDB	6.5%	5.9%	7.6%	6.5%		6.7%	3.4%	16.8%	11.1%	4.0%	0.2%	8.0%	0 bps
OTEX	2.2%	5.0%	(0.2%)	1.4%	2.9%	2.3%	45.6%	1.2%	(1.8%)	(1.5%)	(1.7%)	(0.9%)	(154) bps
SNOW	2.3%	1.7%	1.8%	2.9%	1.9%	2.1%	(0.4%)	(2.4%)	2.6%	2.3%	(2.3%)	0.0%	(245) bps
SPLK	16.3%	3.9%	2.4%	3.6%	15.7%	6.4%	(7.2%)	4.5%	8.7%	1.8%	1.1%	4.0%	106 bps
TDC	4.0%	0.6%	3.8%	0.5%	0.3%	1.3%	(1.8%)	3.9%	0.1%	(2.6%)	(4.9%)	(0.9%)	(487) bps
Average	4.9%	3.0%	3.1%	3.2%	3.6%	3.2%	3.9%	2.7%	2.9%	0.1%	(0.3%)	1.3%	(45) bps
Security													
CHKP	0.4%	(0.5%)	(0.2%)	0.7%	0.2%	0.1%	(1.2%)	(1.2%)	(0.7%)	(1.1%)	(0.1%)	(0.8%)	(7) bps
CVBR	(2.9%)	(0.5%)	1.4%	3.6%	6.4%	2.7%	(1.2%)	0.3%	2.1%	0.2%	2.8%	1.4%	265 bps
FTNT	(0.9%)	5.1%	(0.9%)	(1.0%)	0.4%	0.9%	6.4%	1.4%	(3.6%)	(5.9%)	(3.3%)	(2.9%)	(255) bps
OKTA	4.1%	1.4%	4.0%	4.2%	3.0%	3.1%	3.8%	5.2%	5.7%	1.1%	3.1%	3.8%	312 bps
PANW	0.4%	0.4%	(0.3%)	1.5%	0.2%	0.5%	(1.0%)	0.1%	(2.5%)	0.2%	(3.5%)	(1.4%)	(345) bps
QLYS	0.5%	0.1%	1.3%	0.7%	(0.2%)	0.5%	(1.9%)	0.7%	0.9%	(0.3%)	(0.4%)	0.2%	(44) bps
RPD	2.8%	1.1%	1.2%	0.9%	2.0%	1.3%	(1.2%)	1.0%	0.7%	(0.8%)	(0.4%)	0.1%	(41) bps
S	1.1%	(2.4%)	6.0%	5.2%		2.9%	(2.1%)	(1.8%)	6.5%	1.7%	(0.1%)	1.6%	(0) bps
TENB	1.8%	0.9%	2.5%	1.6%	3.3%	2.1%	(1.3%)	0.7%	2.9%	0.0%	(0.2%)	0.9%	(22) bps
ZS	6.0%	1.8%	5.7%	4.9%	3.4%	4.0%	8.0%	8.1%	6.9%	2.0%	0.3%	4.3%	5 bps
Average	1.3%	0.7%	2.1%	2.2%	2.1%	1.8%	0.8%	1.4%	1.9%	(0.3%)	(0.2%)	0.7%	(13) bps
Mega Cap Software													
ADBE	0.7%	0.9%	0.5%	0.6%		0.7%	1.2%	0.6%	1.1%	(0.8%)	(0.0%)	0.2%	(0) bps
CRM	4.9%	0.8%	0.9%	0.0%	0.7%	0.6%	2.4%	1.9%	0.5%	0.1%	0.1%	0.7%	8 bps
IBM	3.3%	(0.7%)	(0.6%)	0.2%	0.5%	(0.2%)	1.4%	(2.0%)	(0.8%)	(1.7%)	(0.7%)	(1.3%)	(17) bps
INTU	4.5%	(1.2%)	2.7%	3.5%	(0.0%)	1.2%	(1.1%)	10.7%	3.6%	(0.9%)	0.6%	3.5%	58 bps
MSFT	(0.5%)	3.6%	1.3%	3.7%	1.4%	2.5%	0.3%	2.4%	2.9%	4.3%	0.1%	2.4%	(9) bps
NOW	0.1%	0.4%	1.0%	0.6%	1.5%	0.9%	1.9%	0.8%	2.4%	0.5%	1.9%	1.4%	0 bps
ORCL	(0.2%)	0.7%	(0.2%)	(0.9%)		(0.1%)	1.3%	1.0%	(2.5%)	(0.3%)	0.0%	(0.4%)	0 bps
SAP	1.4%	1.9%	0.2%	(1.2%)	2.3%	0.8%	3.7%	(1.8%)	(4.6%)	(2.8%)	2.1%	(1.8%)	0 bps
Average	1.8%	0.8%	0.7%	0.8%	1.1%	0.8%	1.4%	1.7%	0.3%	(0.2%)	0.5%	0.6%	5 bps
TOTAL AVERAGE													
	2.7%	1.8%	2.3%	2.2%	2.2%	2.2%	1.4%	2.3%	2.2%	0.2%	(0.4%)	1.0%	(47) bps

Source: TD Cowen; FactSet

Figure 11 : Average Performance vs. Consensus

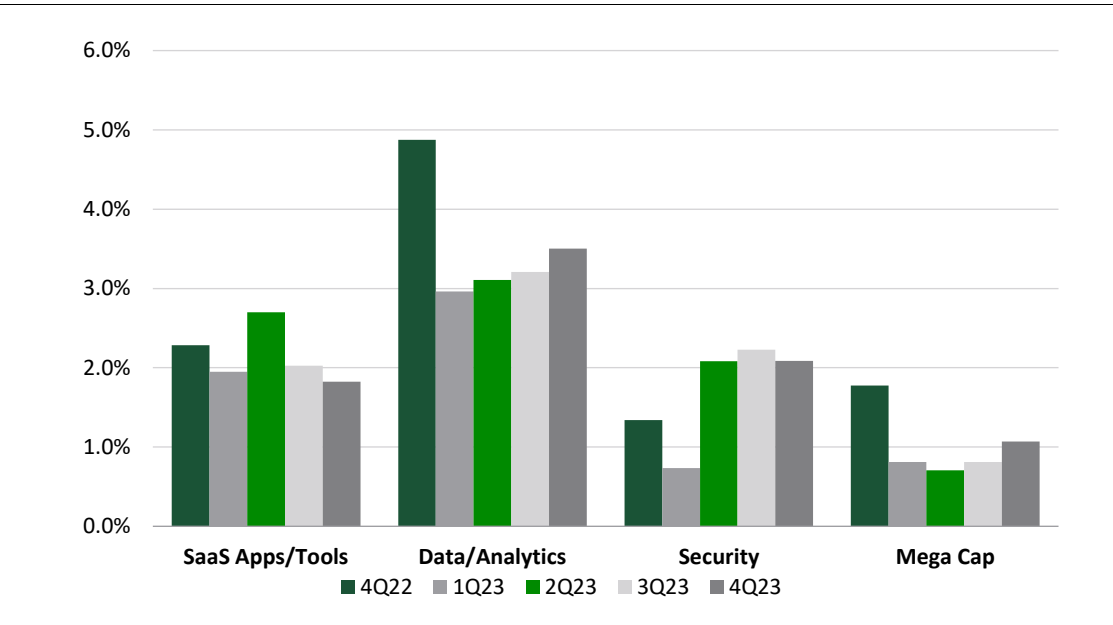


Figure 12 : Average EV/NTM Sales Across Enterprise Software (5-Year Historical)

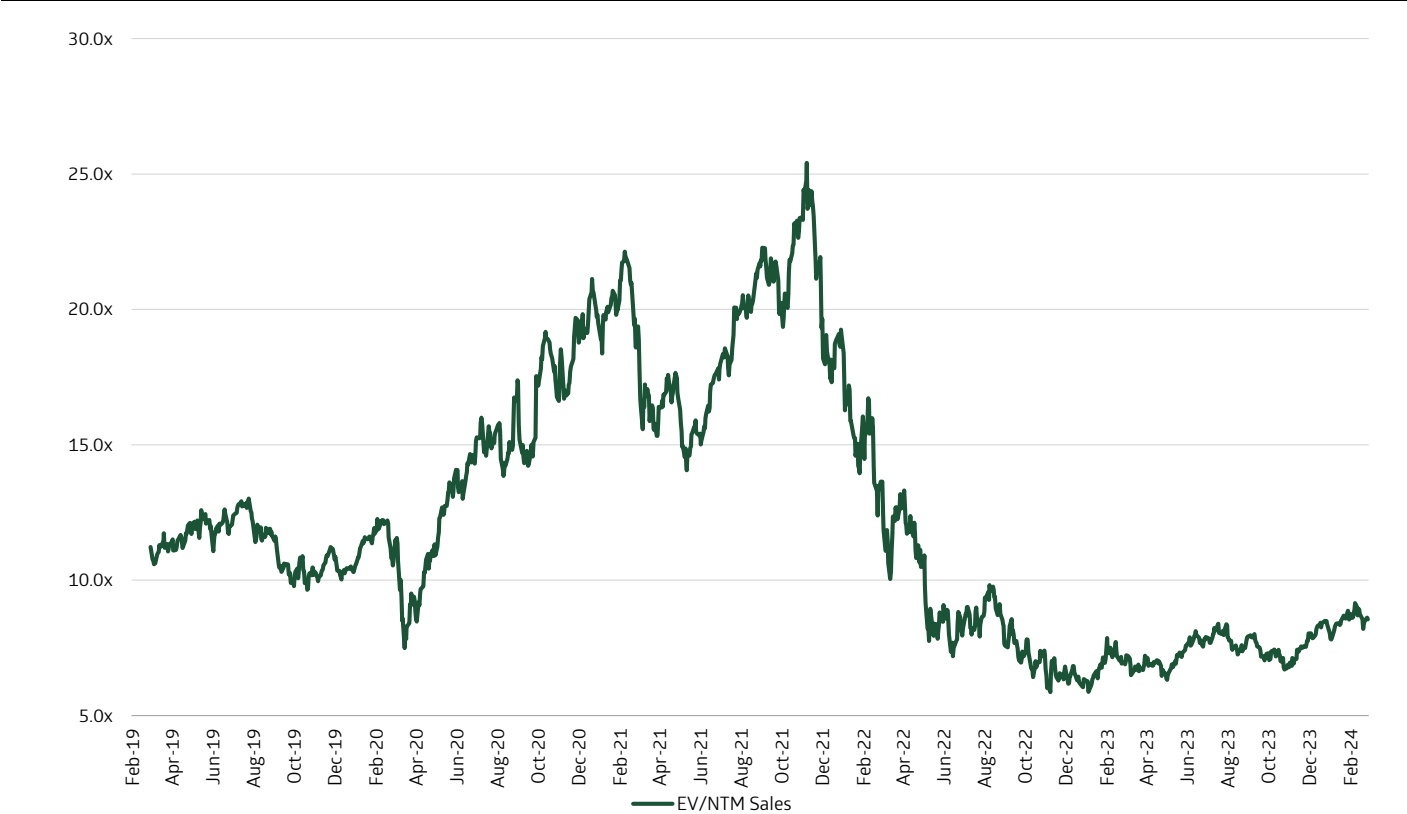
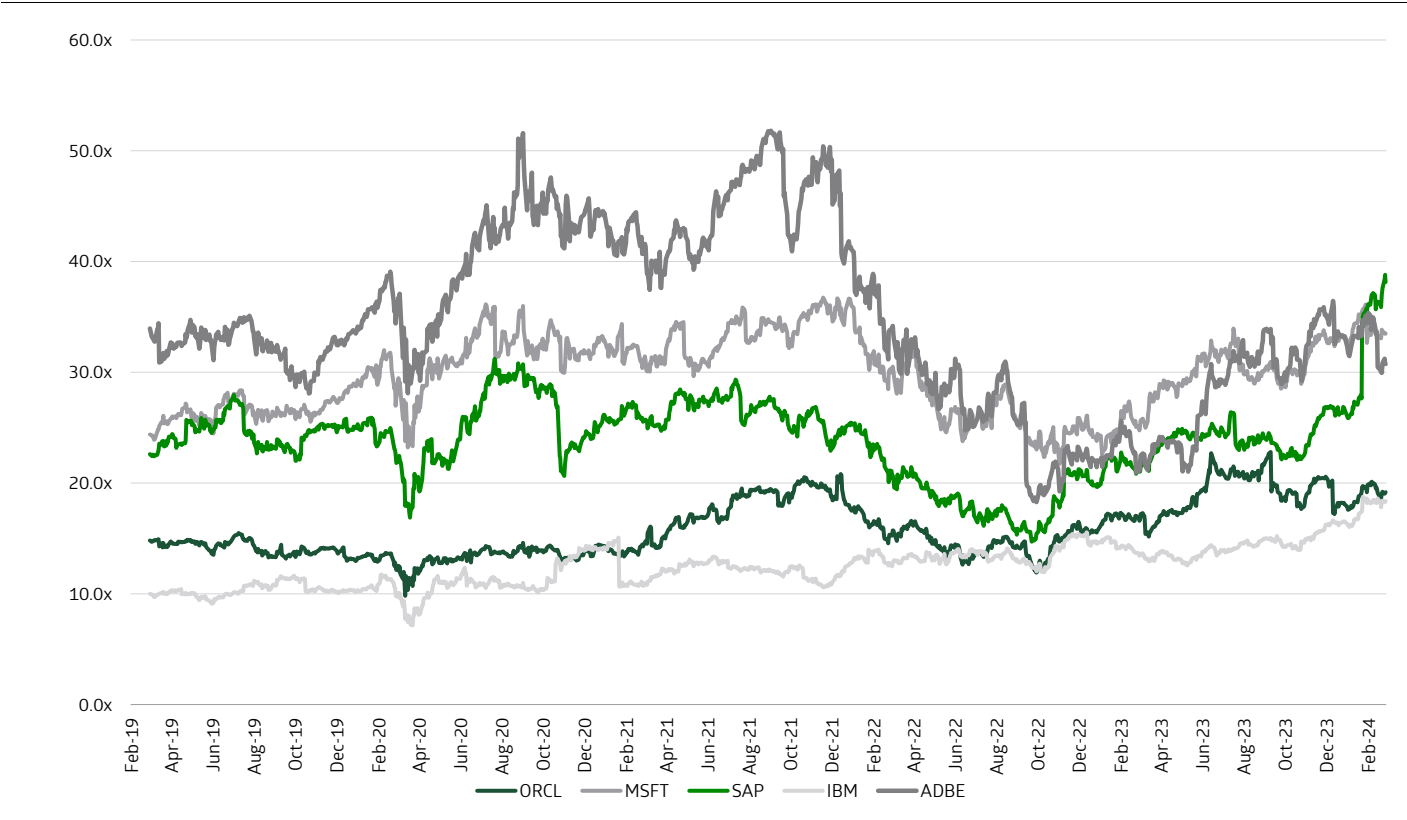




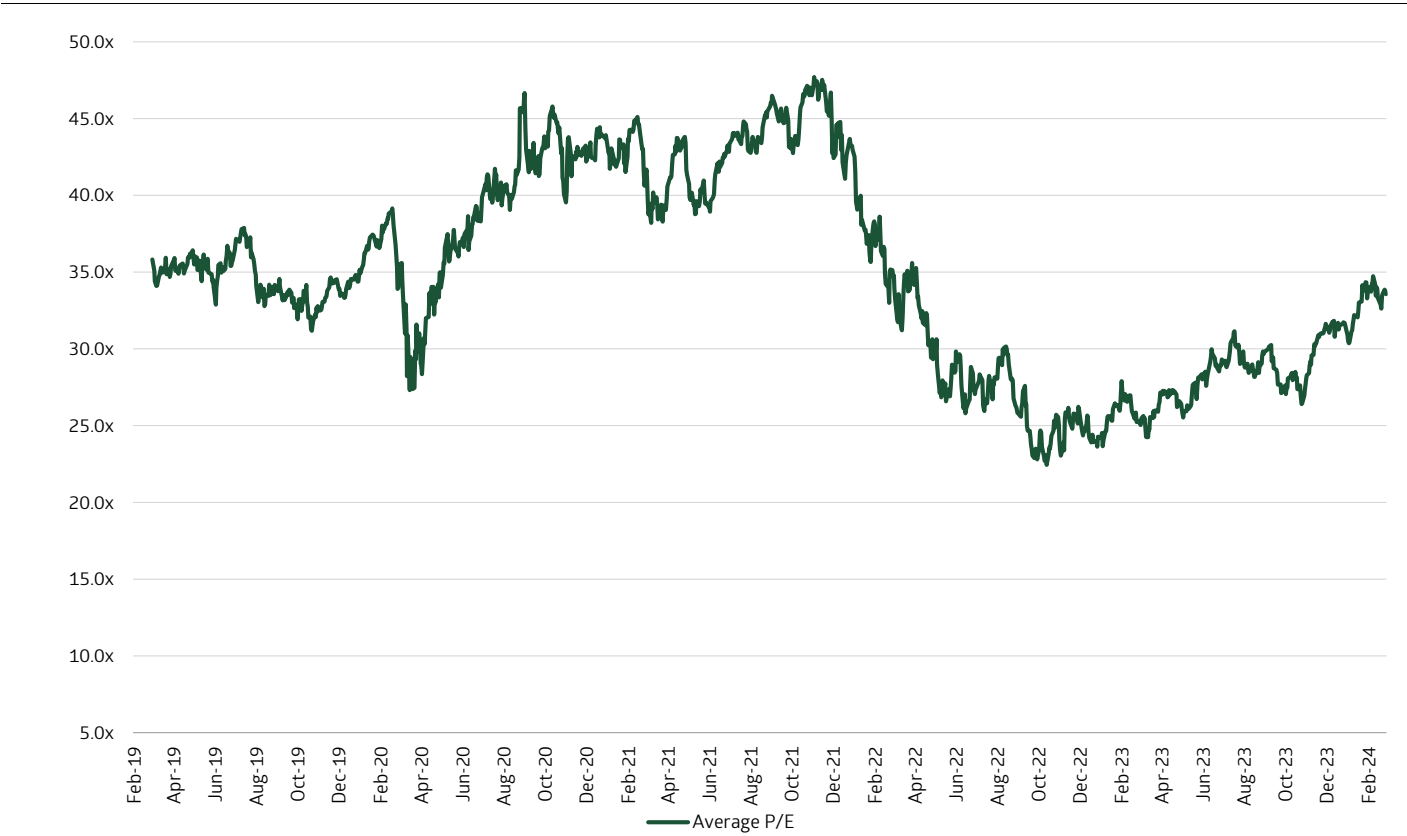
Figure 13 : Mega Cap Software NTM P/E (5-Year Historical)



Source: TD Cowen; FactSet

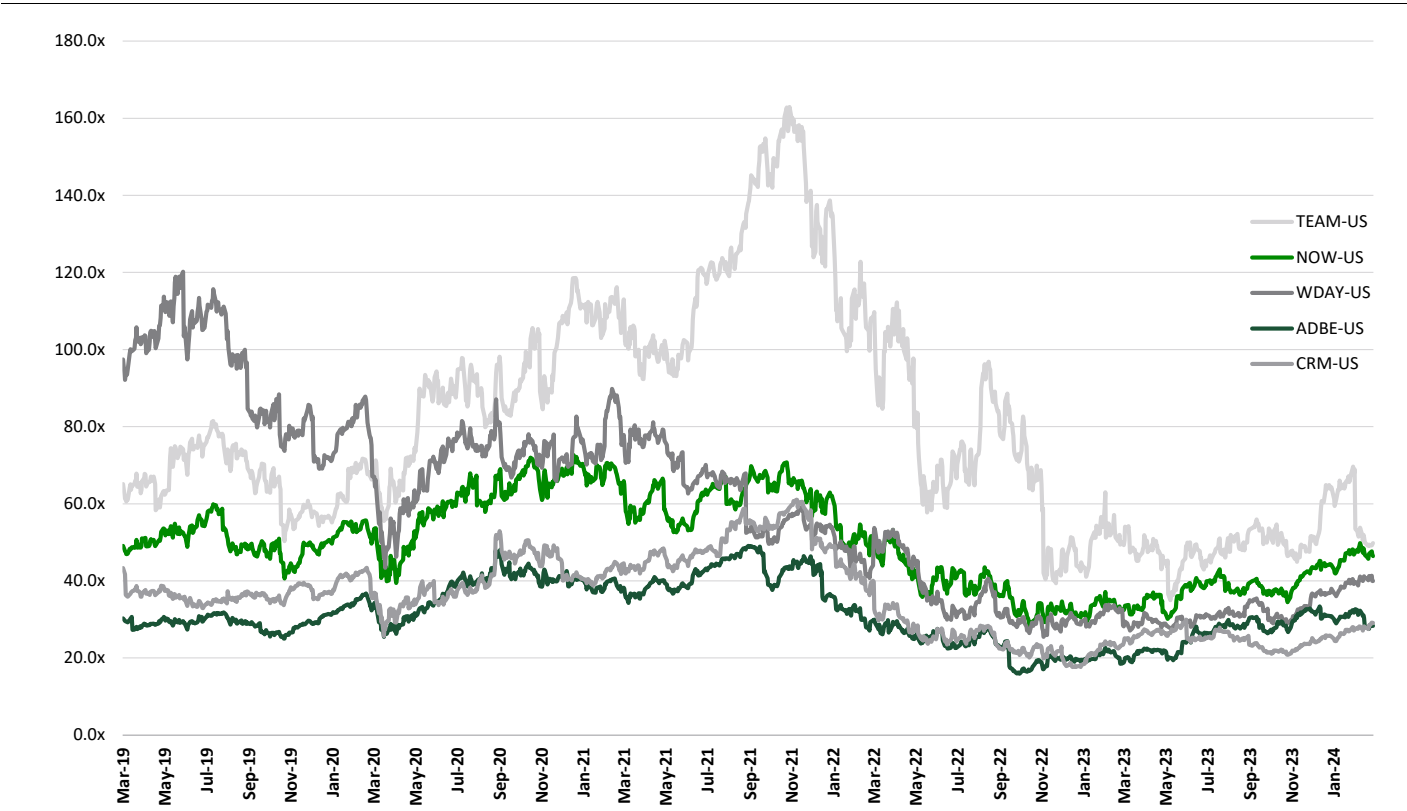
Note: Excludes INTU, CRM, and NOW

Figure 14 : Average Mega Cap Software NTM P/E (5-Year Historical)



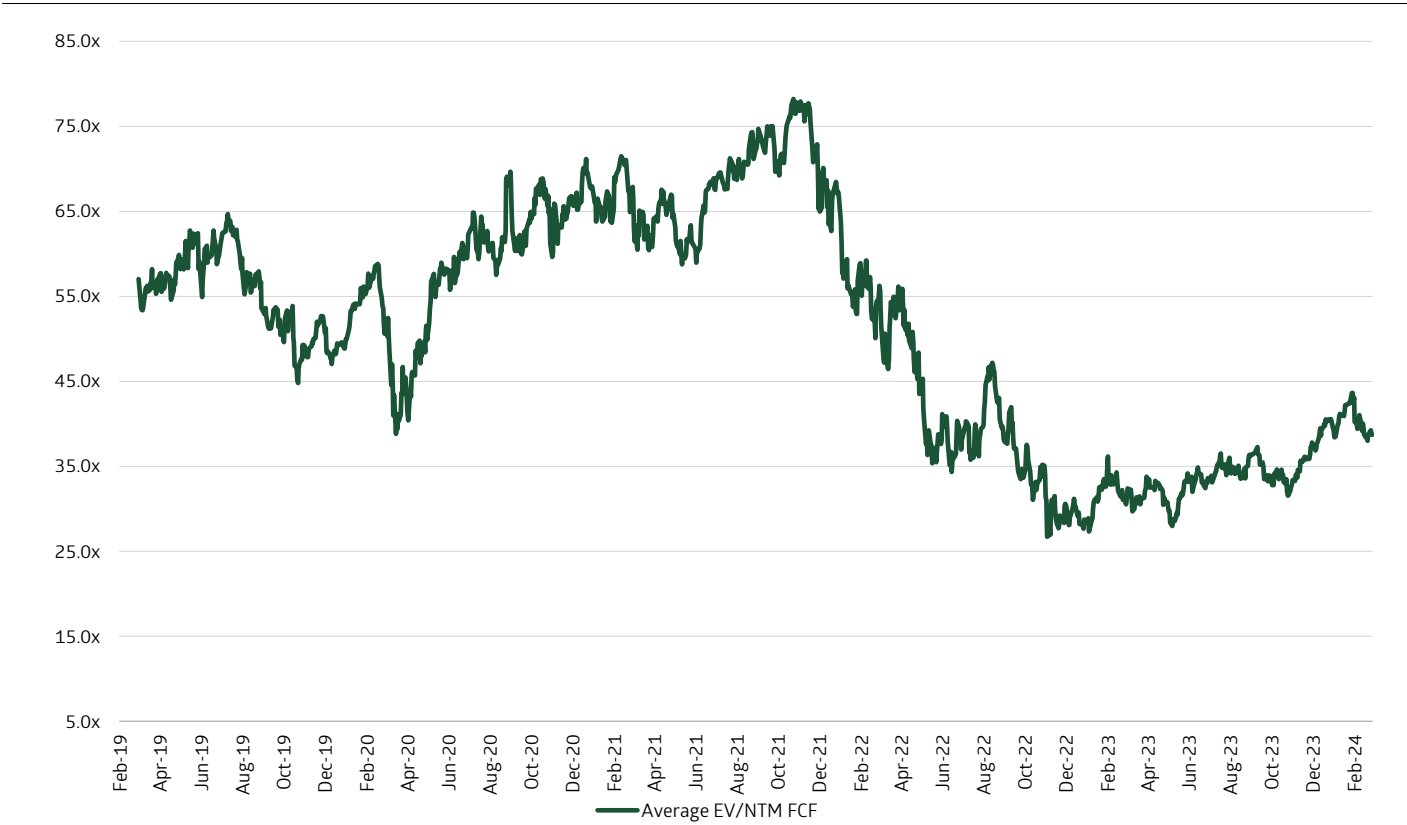
Source: TD Cowen; FactSet

Figure 15 : ADBE, CRM, NOW, TEAM, and WDAY EV/NTM FCF



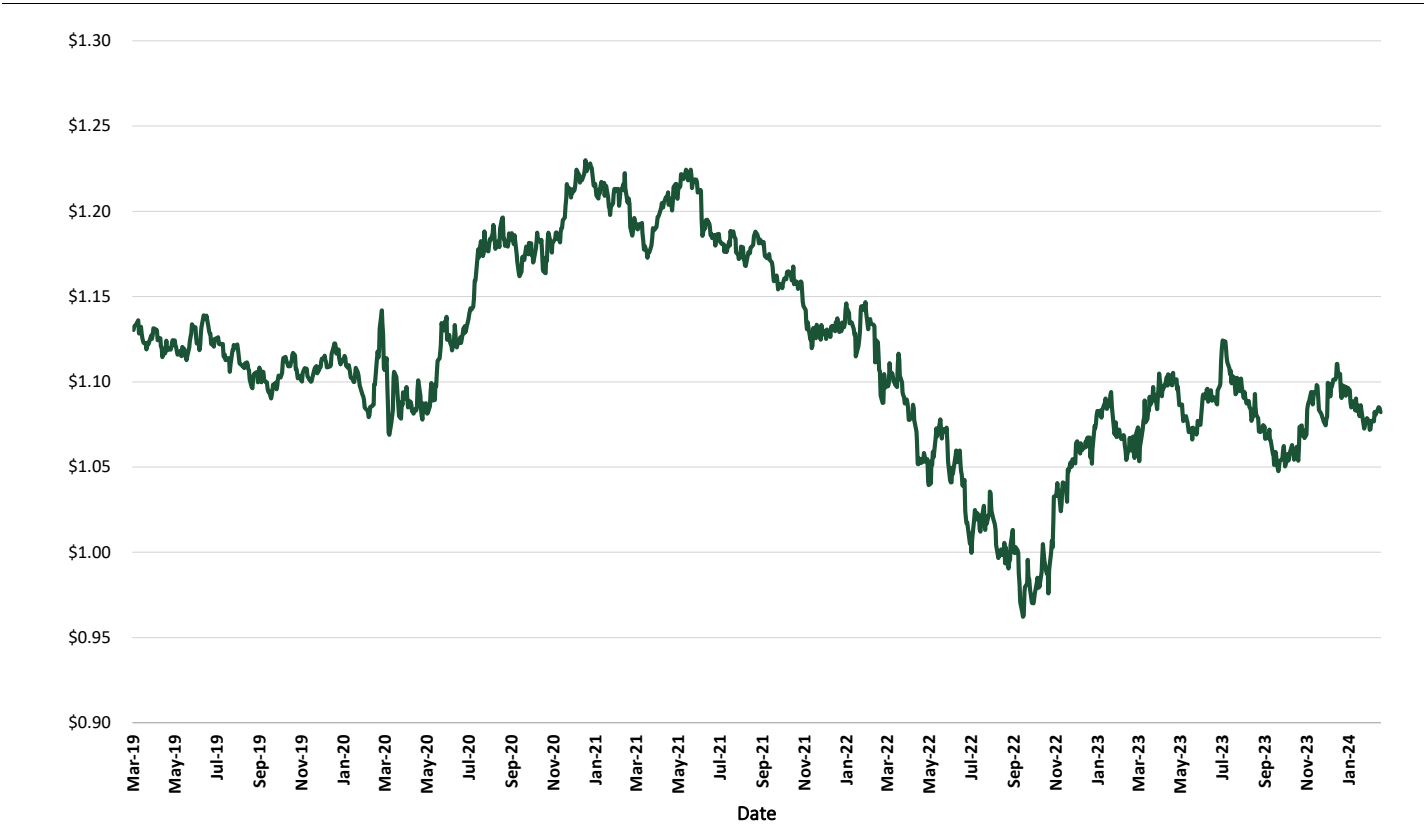
Source: TD Cowen; FactSet

Figure 16 : Average EV/NTM FCF (ADBE, CRM, NOW, TEAM, and WDAY)



Source: TD Cowen; FactSet

Figure 17 : EUR vs. USD - 5 Year Historical



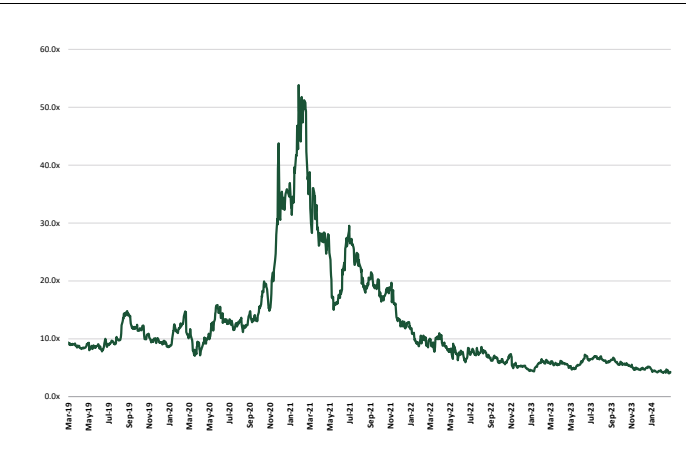
Source: TD Cowen; usforex.com; FactSet

Figure 18 : ADBE EV/NTM FCF



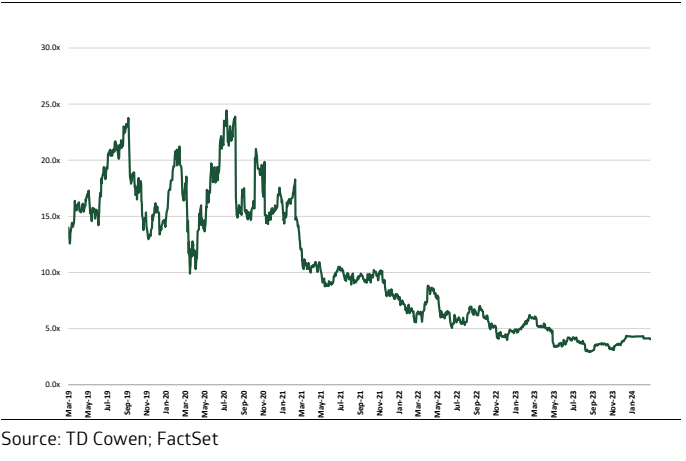
Source: TD Cowen; FactSet

Figure 19 : APPN EV/NTM Sales



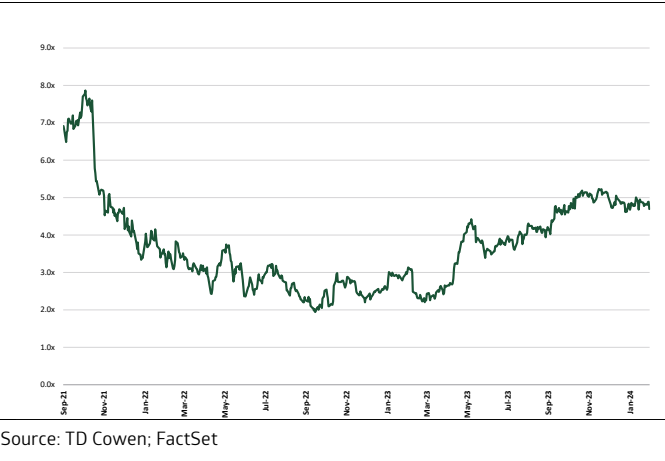
Source: TD Cowen; FactSet

Figure 20 : AYY EV/NTM Sales



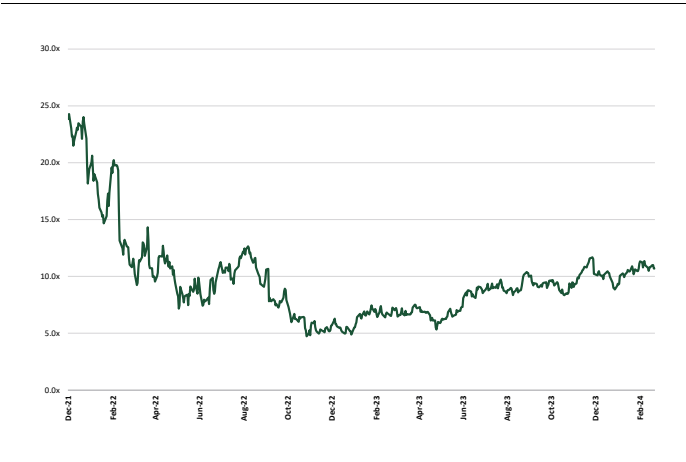
Source: TD Cowen; FactSet

Figure 21 : AVPT EV/NTM Sales



Source: TD Cowen; FactSet

Figure 22 : BRZE EV/NTM Sales



Source: TD Cowen; FactSet

Figure 23 : CFLT EV/NTM Sales



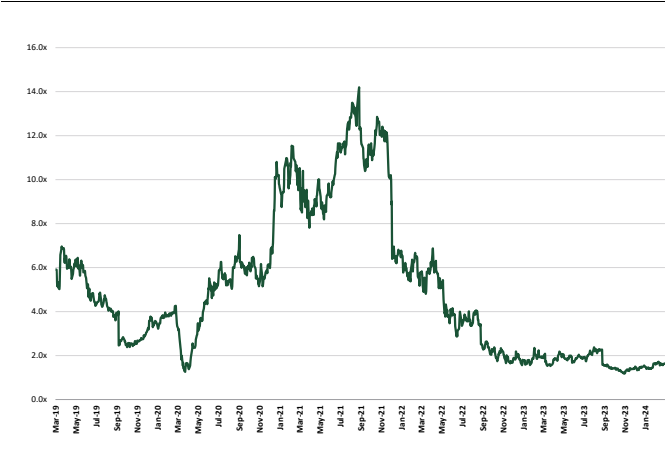
Source: TD Cowen; FactSet

Figure 24 : CRM EV/NTM Sales



Source: TD Cowen; FactSet

Figure 25 : DOMO EV/NTM Sales



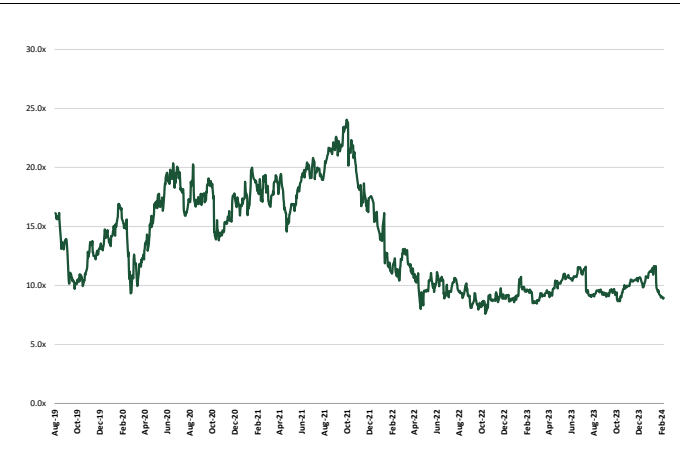
Source: TD Cowen; FactSet

Figure 26 : DDOG EV/NTM Sales



Source: TD Cowen; FactSet

Figure 27 : DT EV/NTM Sales



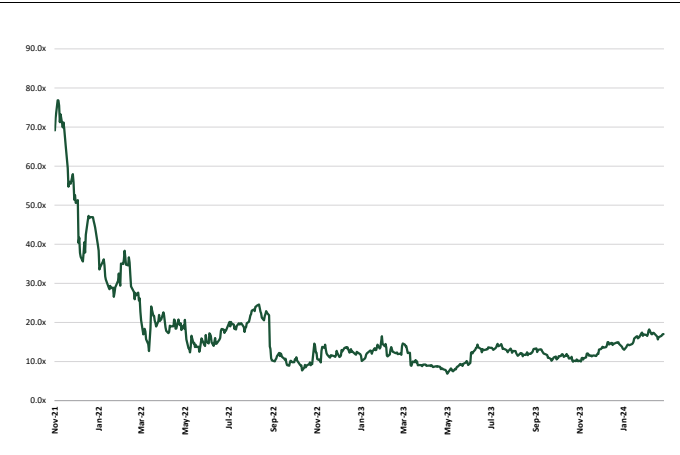
Source: TD Cowen; FactSet

Figure 28 : ESTC EV/NTM Sales



Source: TD Cowen; FactSet

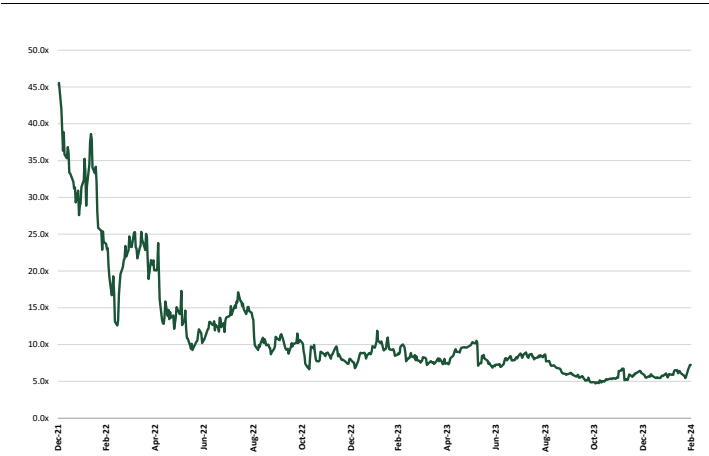
Figure 29 : GTLB EV/NTM Sales



Source: TD Cowen; FactSet

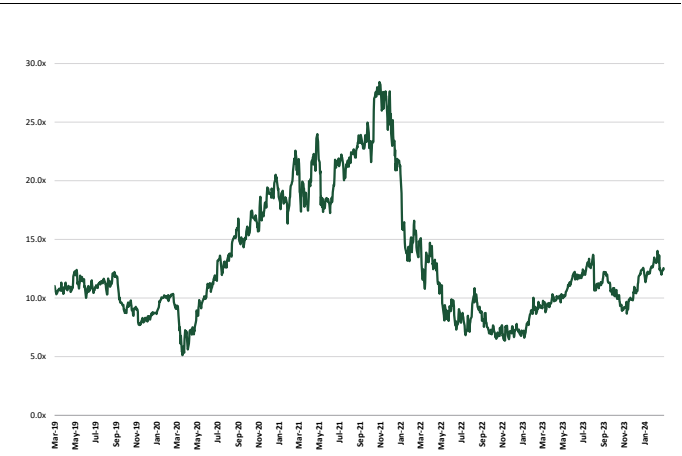


Figure 30 : HCP EV/NTM Sales



Source: TD Cowen; FactSet

Figure 31 : HUBS EV/NTM Sales



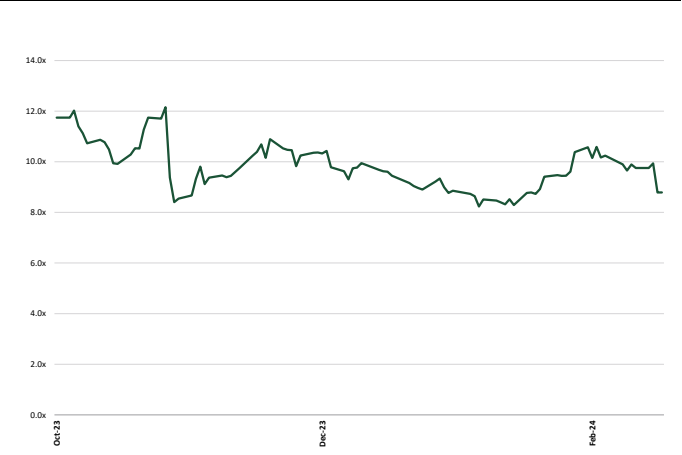
Source: TD Cowen; FactSet

Figure 32 : IOT EV/NTM Sales



Source: TD Cowen; FactSet

Figure 33 : KYVO EV/NTM Sales



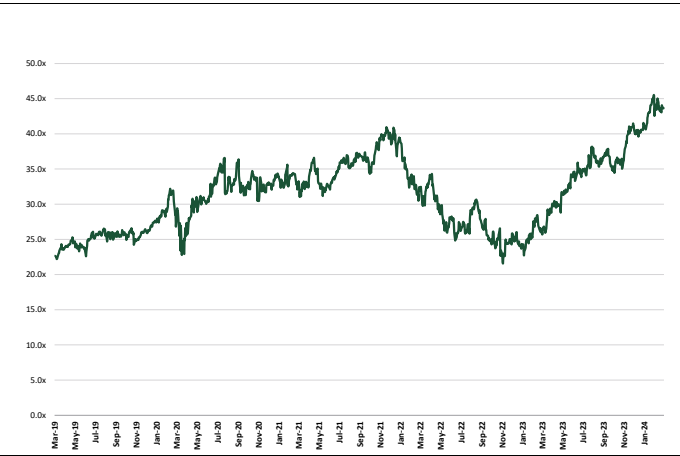
Source: TD Cowen; FactSet

Figure 34 : MNDY EV/NTM Sales



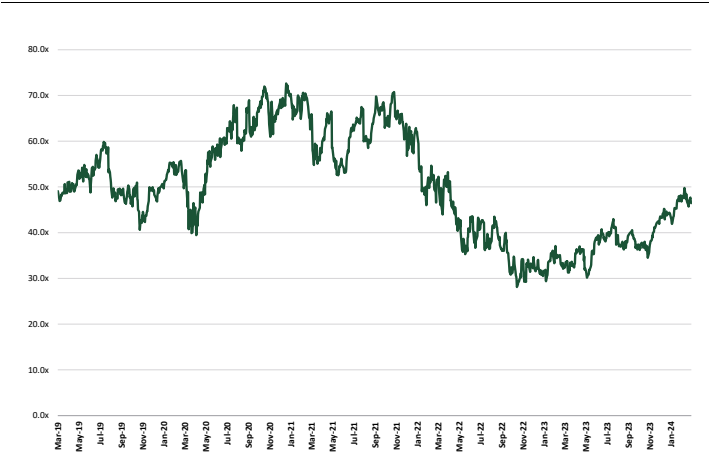
Source: TD Cowen; FactSet

Figure 35 : MSFT EV/NTM FCF



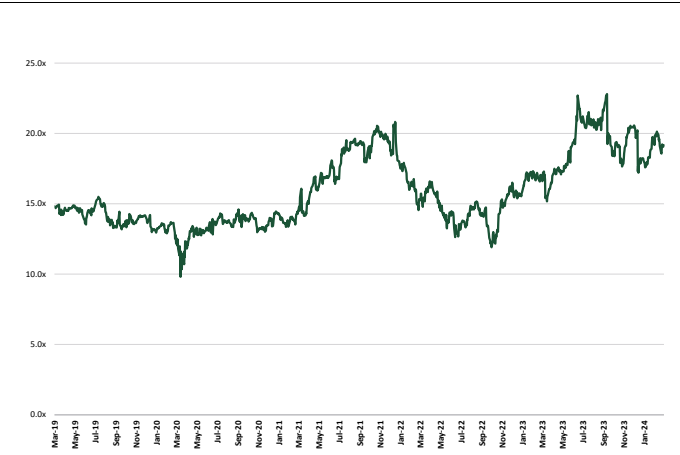
Source: TD Cowen; FactSet

Figure 36 : NOW EV/NTM FCF



Source: TD Cowen; FactSet

Figure 37 : ORCL P/E



Source: TD Cowen; FactSet

Figure 38 : PD EV/Sales



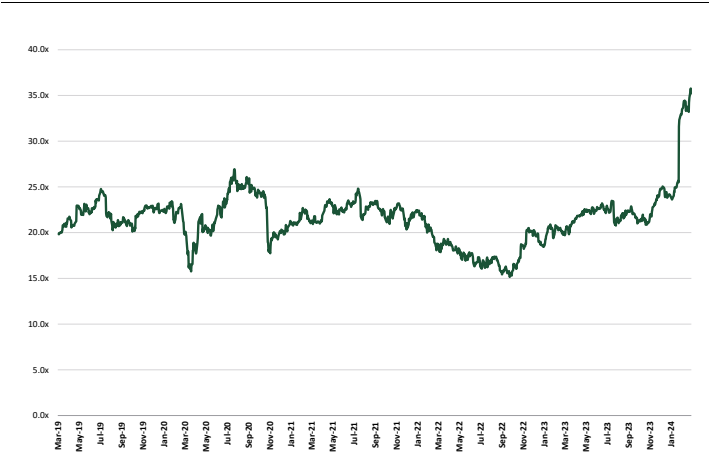
Source: TD Cowen; FactSet

Figure 39 : RMNI EV/NTM Sales



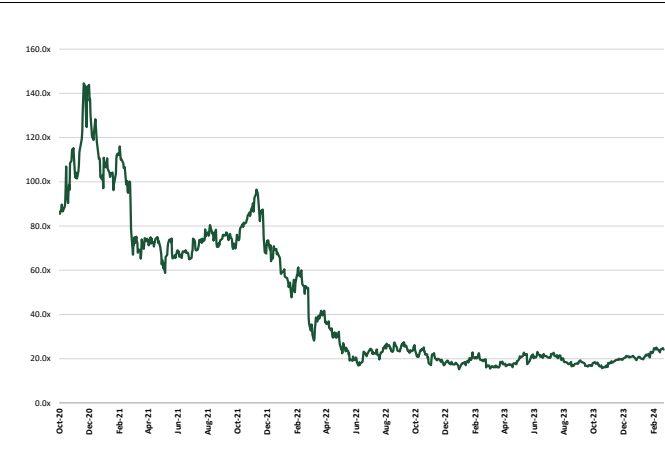
Source: TD Cowen; FactSet

Figure 40 : SAP NTM P/E



Source: TD Cowen; FactSet

Figure 41 : SNOW EV/NTM Sales



Source: TD Cowen; FactSet

Figure 42 : TDC EV/NTM Sales



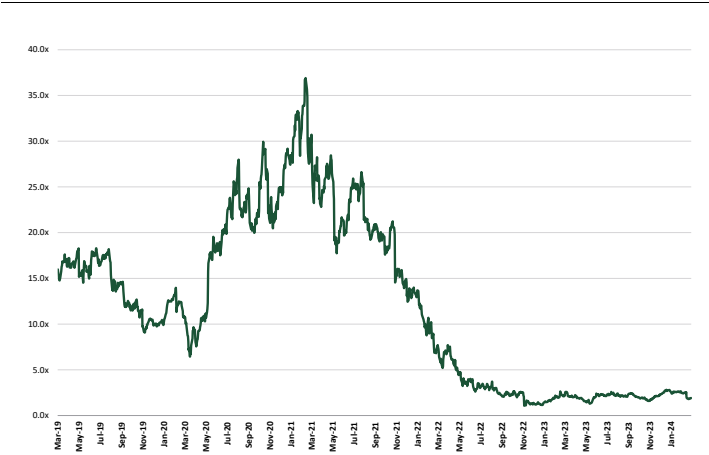
Source: TD Cowen; FactSet

Figure 43 : TEAM EV/NTM Sales



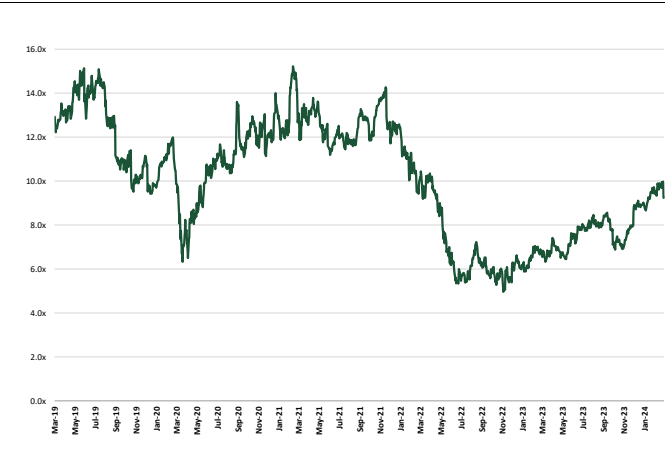
Source: TD Cowen; FactSet

Figure 44 : TWLO EV/NTM Sales



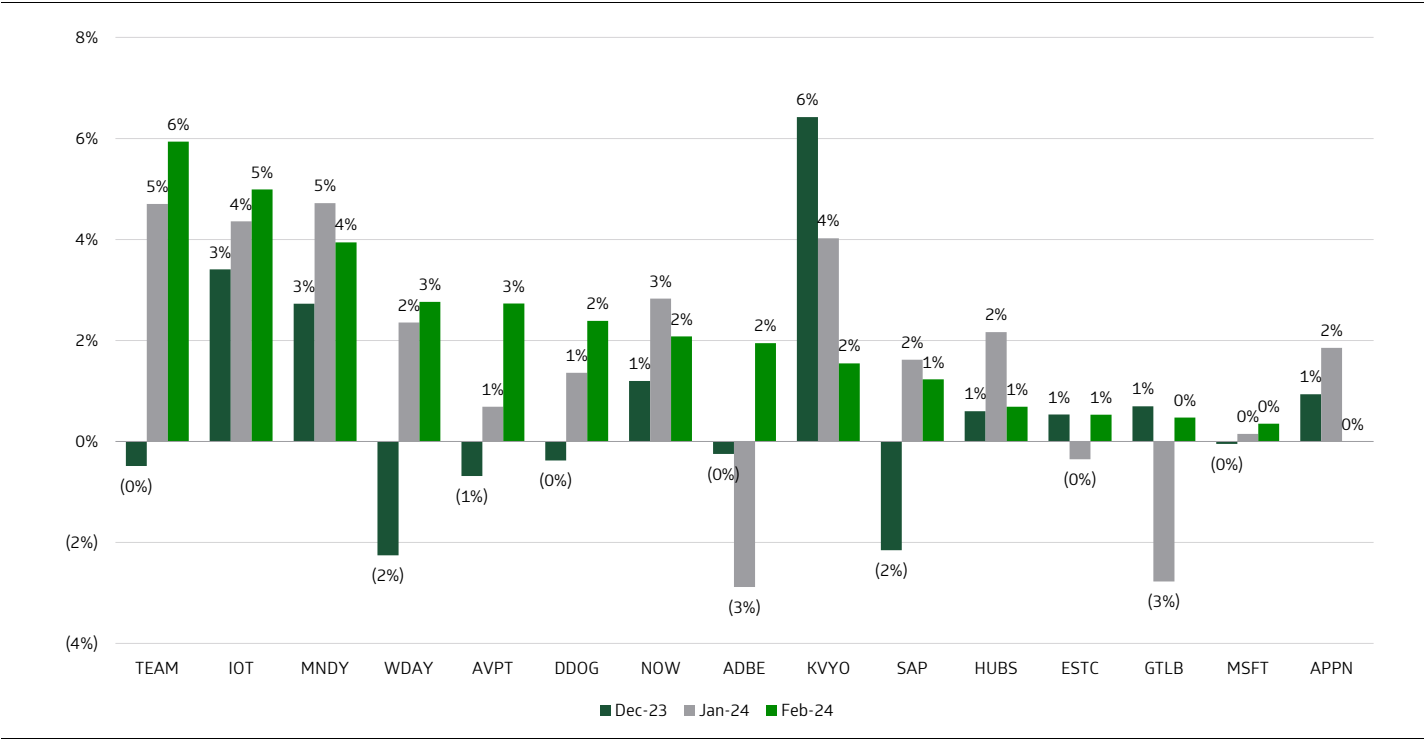
Source: TD Cowen; FactSet

Figure 45 : WDAY EV/NTM Sales



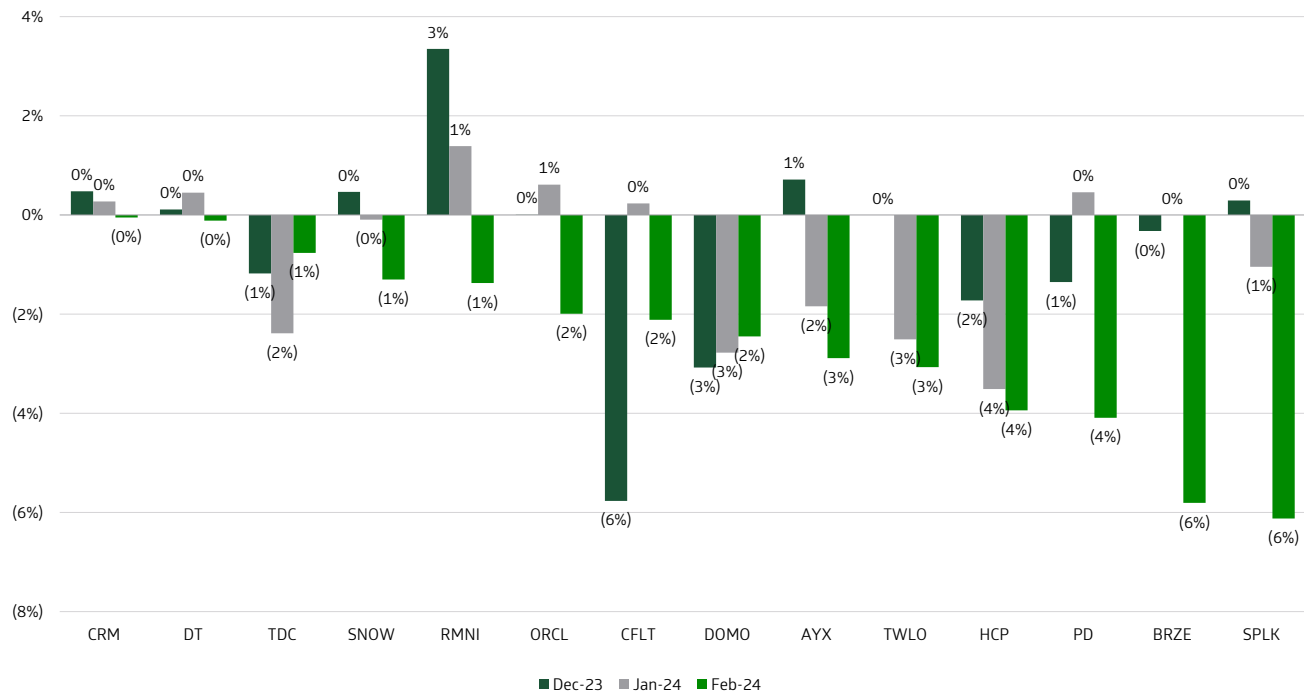
Source: TD Cowen; FactSet

Figure 46 : >0% M/M Sales Headcount Growth in the Most Recent Month



Source: LinkedIn; TD Cowen

Figure 47 : <0% M/M Sales Headcount Growth in the Most Recent Month



Source: LinkedIn; TD Cowen

Figure 48 : Cloud Industry Model (\$m)

	CY16A	CY17A	CY18A	CY19A	CY20A	CY21A	CY22A	Q1:23A	Q2:23A	Q3:23A	Q4:23A	CY23A	Q1:24A	Q2:24A	Q3:24A	Q4:24E	CY24E
AWS Breakdown																	
Revenue	\$12,219	\$17,458	\$25,656	\$35,026	\$45,370	\$62,202	\$80,096	\$21,354	\$22,140	\$23,059	\$24,204	\$90,757	\$24,574	\$25,769	\$27,022	\$28,456	\$105,821
Q/Q Growth								0%	4%	4%	5%		2%	5%	5%	5%	
Y/Y Growth		43%	47%	37%	30%	37%	29%	16%	12%	12%	13%	13%	15%	16%	17%	18%	17%
Q/Q \$ Growth (Y/Y for CY)		\$5,239	\$8,198	\$9,370	\$10,344	\$16,832	\$17,894	(\$24)	\$786	\$919	\$1,145	\$10,661	\$370	\$1,195	\$1,253	\$1,434	\$15,064
Azure Breakdown																	
Revenue (TD Cowen ests)	\$2,868	\$5,583	\$10,165	\$16,630	\$24,799	\$36,900	\$50,690	\$14,420	\$15,720	\$16,650	\$18,140	\$64,930	\$18,460	\$20,130	\$20,980	\$22,850	\$82,420
Q/Q Growth								3%	9%	6%	9%		2%	9%	4%	9%	
Y/Y Growth		95%	82%	64%	49%	49%	37%	27%	26%	29%	30%	28%	28%	28%	26%	26%	27%
Q/Q \$ Growth (Y/Y for CY)		\$2,714	\$4,583	\$6,465	\$8,169	\$12,101	\$13,790	\$470	\$1,300	\$930	\$1,490	\$14,240	\$320	\$1,670	\$850	\$1,870	\$17,490
GCP Breakdown (includes Google Workspace)																	
Revenue (TD Cowen ests)		\$4,056	\$5,838	\$8,918	\$13,059	\$19,206	\$26,280	\$7,454	\$8,031	\$8,411	\$9,192	\$33,088	\$9,418	\$10,156	\$10,611	\$11,459	\$41,644
Q/Q Growth								2%	8%	5%	9%		2%	8%	4%	8%	
Y/Y Growth			44%	53%	46%	47%	37%	28%	28%	22%	26%	26%	26%	26%	26%	25%	26%
Q/Q \$ Growth (Y/Y for CY)			\$1,782	\$3,080	\$4,141	\$6,147	\$7,074	\$139	\$577	\$380	\$781	\$6,808	\$226	\$738	\$455	\$848	\$8,556
Oracle Cloud Breakdown																	
PaaS/IaaS Revenue (TD Cowen ests)					\$1,812	\$2,344	\$3,473	\$1,174	\$1,425	\$1,491	\$1,552	\$5,643	\$1,746	\$2,061	\$2,184	\$2,337	\$8,329
Q/Q Growth								15%	21%	5%	4%		13%	18%	6%	7%	
Y/Y Growth						29%	48%	57%	76%	66%	52%	62%	49%	45%	47%	51%	48%
Q/Q \$ Growth (Y/Y for CY)						\$532	\$1,129	\$153	\$252	\$65	\$61	\$2,170	\$194	\$314	\$124	\$153	\$2,686

Source: TD Cowen. Company Reports; FactSet. Azure, GCP and ORCL are TD Cowen estimates, AWS reflects consensus estimates.

Figure 49 : Enterprise Software Coverage (Derrick Wood)

<u>Company</u>	<u>Ticker</u>	<u>Rating</u>	<u>Market Cap (\$M)</u>	<u>Sector Focus</u>	<u>Target Price</u>	<u>Current Price</u>
Adobe Systems	ADBE	Outperform	\$257,897	Applications	\$650	\$560
Alteryx	AYX	Market Perform	\$3,950	Data Analytics	\$48.25	\$48
Appian	APPN	Market Perform	\$2,632	Applications	\$40	\$35
Atlassian	TEAM	Market Perform	\$56,778	Applications	\$220	\$207
AvePoint	AVPT	Outperform	\$1,679	Applications	\$11.00	\$8
Braze	BRZE	Outperform	\$6,345	Data Analytics	\$68	\$57
Confluent	CFLT	Outperform	\$12,197	Data Analytics	\$34	\$34
Datadog	DDOG	Outperform	\$48,003	Applications	\$155	\$131
Dynatrace	DT	Outperform	\$15,270	Applications	\$62	\$50
Elastic NV	ESTC	Market Perform	\$14,533	Applications	\$110	\$134
Domo Inc	DOMO	Market Perform	\$481	Data Analytics	\$12.50	\$12
GitLab	GTLB	Outperform	\$12,609	Applications	\$80	\$72
HashiCorp	HCP	Market Perform	\$5,693	Applications	\$23	\$26
Klaviyo	KVYO	Outperform	\$8,180	Applications	\$39	\$27
Hubspot	HUBS	Outperform	\$33,767	Applications	\$700	\$619
Microsoft	MSFT	Outperform	\$3,113,235	Applications	\$455	\$414
Monday.com	MNDY	Outperform	\$11,343	Applications	\$250	\$223
Oracle	ORCL	Outperform	\$332,683	Apps + Analytics	\$130	\$112
PagerDuty	PD	Market Perform	\$2,488	Applications	\$23	\$24
Rimini Street	RMNI	Market Perform	\$299	Applications	\$3.50	\$0
Salesforce.com	CRM	Market Perform	\$309,584	Applications	\$315	\$309
Samsara	IOT	Outperform	\$20,271	Data Analytics	\$36	\$35
SAP	SAP	Market Perform	\$217,269	Apps + Analytics	\$180	\$188
ServiceNow	NOW	Outperform	\$163,148	Applications	\$870	\$771
Snowflake	SNOW	Outperform	\$71,071	Data Analytics	\$230	\$188
Splunk	SPLK	Market Perform	\$28,910	Data Analytics	\$157	\$156
Teradata	TDC	Market Perform	\$3,928	Data Analytics	\$46	\$165
Twilio	TWLO	Market Perform	\$12,057	Applications	\$72	\$60
Workday	WDAY	Outperform	\$82,361	Applications	\$330	\$295

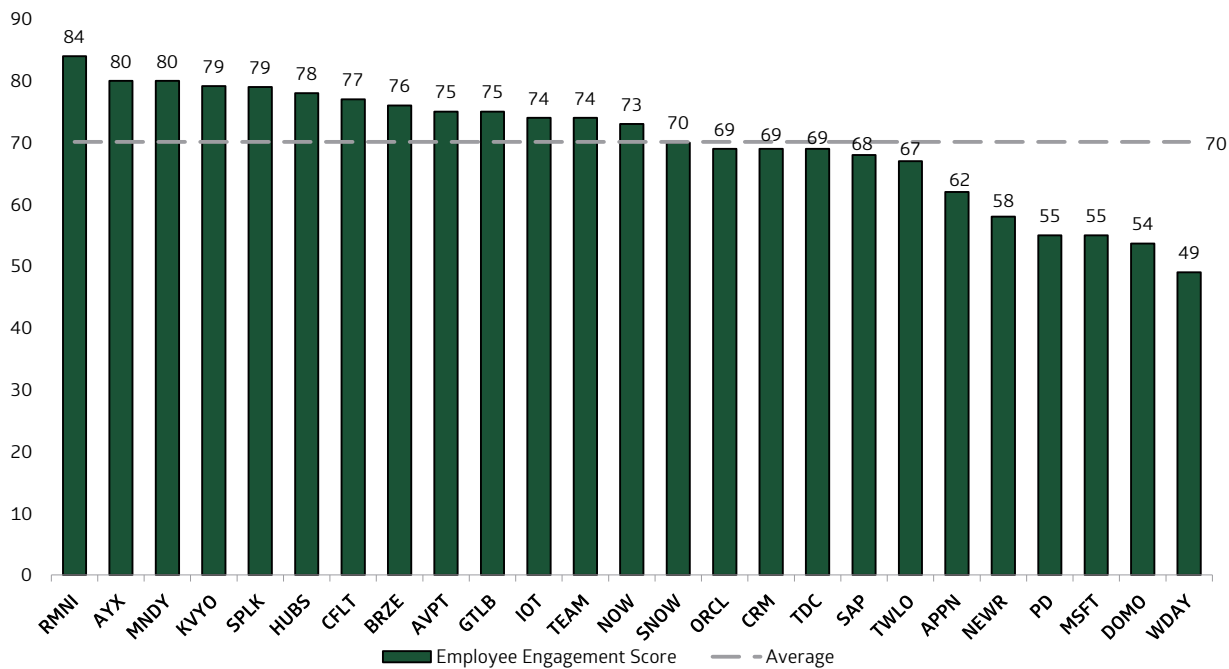
Source: TD Cowen, FactSet; Prices as of 3/1/2023



Figure 50 : TD Cowen Enterprise Software Comp Table

Company Name	Ticker	Price	Market Cap (\$M)	EV (\$M)	Revenue Estimates		Revenue Growth		FCF Estimates		FCF Margin		EV/FCF		EV/Sales		Rule of 40	Sales/Growth Ratio		
					CY2024E	CY2025E	CY2024E	CY2025E	CY2024E	CY2025E	CY2024E	CY2025E	CY2024E	CY2025E	CY2024E	CY2025E				
Large Cap (>\$150B)					3/1/2024															
Adobe	ADBE-US	\$569.31	\$257,897	\$253,689	\$21,469	\$24,006	10.6%	11.8%	\$8,824	\$9,967	41.1%	41.5%	28.8x	25.5x	11.8x	10.6x	52%	1.11x		
IBM	IBM-US	\$187.24	\$175,077	\$221,662	\$63,762	\$65,975	3.1%	3.5%	\$11,663	\$12,286	18.3%	NA	19.0x	18.0x	3.4x	3.3x	21%	1.11x		
Intuit	INTU-US	\$664.31	\$192,495	\$196,956	\$16,884	\$18,783	11.9%	11.2%	\$5,479	\$6,837	32.5%	NA	35.9x	28.8x	11.4x	10.3x	44%	0.97x		
Microsoft	MSFT-US	\$414.59	\$3,113,235	\$3,104,187	\$260,222	\$293,865	14.3%	12.9%	\$73,956	\$88,582	28.4%	30.1%	42.0x	35.0x	12.0x	10.6x	43%	0.84x		
Oracle	ORCL-US	\$113.48	\$332,683	\$412,782	\$55,435	\$60,050	7.4%	8.3%	\$10,956	\$12,489	19.8%	20.8%	37.7x	33.1x	7.1x	6.6x	27%	0.97x		
Salesforce	CRM-US	\$318.41	\$309,584	\$304,815	\$38,095	\$42,120	9.3%	10.6%	\$11,943	\$13,417	31.4%	31.9%	25.5x	22.7x	8.0x	7.2x	41%	0.86x		
SAP US	SAP-US	\$188.17	\$218,190	\$212,692	\$36,695	\$40,845	7.9%	11.3%	\$3,856	\$8,744	10.5%	21.4%	55.2x	24.3x	5.9x	5.3x	18%	0.75x		
ServiceNow	NOW-US	\$777.21	\$163,148	\$159,752	\$10,886	\$13,091	21.3%	20.3%	\$3,380	\$4,150	31.0%	31.7%	47.3x	38.5x	14.3x	11.9x	52%	0.67x		
Group Mean					\$62,931	\$69,842	10.7%	11.2%	\$16,257	\$19,559	26.6%	29.6%	36.4x	28.2x	9.3x	8.2x	37%	0.91x		
Fast Growth (>25% CY24)																				
Cloudflare	NET-US	\$100.93	\$35,734	\$35,341	\$1,651	\$2,098	27.3%	27.1%	\$154	\$224	9.3%	10.7%	NM	NM	19.8x	15.6x	37%	0.72x		
CrowdStrike	CROWD-US	\$315.28	\$82,268	\$79,843	\$3,929	\$4,923	28.8%	25.3%	\$1,227	\$1,605	31.2%	32.6%	65.1x	49.8x	19.5x	15.6x	60%	0.68x		
GitLab	GTLB-US	\$73.33	\$12,609	\$11,620	\$730	\$931	27.2%	27.5%	\$38	\$136	5.2%	14.7%	NM	85.2x	14.0x	11.0x	32%	0.52x		
Klaviyo	KVYO-US	\$27.98	\$8,180	\$7,441	\$893	\$1,130	28.0%	26.4%	\$106	\$142	11.9%	12.6%	69.9x	52.4x	6.4x	5.1x	40%	0.23x		
Monday.com	MNDY-US	\$225.47	\$11,343	\$10,227	\$934	\$1,180	28.0%	26.3%	\$204	\$262	21.8%	22.2%	50.1x	39.1x	10.4x	8.2x	50%	0.37x		
Samsara	IOT-US	\$34.75	\$20,271	\$19,611	\$1,170	\$1,473	27.3%	25.9%	\$54	\$118	4.6%	8.0%	NM	NM	15.4x	12.4x	32%	0.56x		
SentinelOne	S-US	\$27.90	\$9,760	\$8,962	\$815	\$1,059	32.2%	30.0%	\$17	\$142	2.0%	13.4%	NM	63.1x	9.3x	7.2x	34%	0.29x		
Sprout Social	SPT-US	\$64.00	\$3,680	\$3,636	\$426	\$538	27.6%	26.5%	\$26	\$47	6.0%	8.8%	NM	76.6x	8.0x	6.3x	34%	0.29x		
Group Mean					\$1,319	\$1,667	28.3%	26.9%	\$228	\$335	11.5%	15.4%	61.7x	61.0x	12.9x	10.2x	40%	0.46x		
Good Growth (15-25% CY24)																				
Atlassian	TEAM-US	\$207.34	\$56,778	\$56,154	\$4,590	\$5,631	17.9%	22.7%	\$1,124	\$1,606	24.5%	28.5%	49.9x	35.0x	11.6x	9.5x	42%	0.65x		
AvePoint	AVPT-US	\$8.02	\$1,679	\$1,452	\$312	\$374	16.0%	19.9%	\$34	\$61	11.0%	-	42.2x	23.6x	4.0x	3.4x	27%	0.25x		
Braze	BRZE-US	\$57.12	\$6,345	\$5,874	\$572	\$698	22.7%	22.2%	\$2	\$40	0.4%	5.7%	NM	NM	9.1x	7.7x	23%	0.40x		
Confluent	CFLT-US	\$33.78	\$12,197	\$11,385	\$950	\$1,199	22.3%	26.3%	\$5	\$53	0.6%	4.4%	NM	NM	9.9x	7.8x	23%	0.44x		
C3	AI-US	\$35.44	\$6,013	\$5,290	\$351	\$424	18.3%	20.9%	(\$24)	\$15	(6.9%)	-	NM	NM	10.7x	8.8x	11%	0.58x		
Datadog	DDOG-US	\$131.65	\$48,003	\$46,163	\$2,572	\$3,140	20.8%	22.1%	\$651	\$800	25.3%	25.5%	70.9x	57.7x	17.3x	14.1x	46%	0.83x		
Dynatrace	DT-US	\$49.38	\$15,270	\$14,487	\$1,614	\$1,911	18.3%	18.4%	\$396	\$470	24.6%	24.6%	36.5x	30.8x	8.7x	7.4x	43%	0.48x		
Elastic	ESTC-US	\$116.87	\$14,533	\$14,083	\$1,479	\$1,744	18.1%	17.9%	\$184	\$311	12.4%	17.9%	76.6x	45.2x	9.6x	8.2x	31%	0.53x		
Freshworks	FRSH-US	\$20.12	\$6,823	\$5,636	\$708	\$849	18.8%	19.8%	\$110	\$161	15.5%	18.9%	51.3x	35.1x	6.8x	5.7x	34%	0.36x		
Hubspot	HUBS-US	\$630.57	\$33,767	\$32,835	\$2,561	\$3,030	18.0%	18.3%	\$365	\$476	14.2%	15.7%	90.1x	69.0x	11.8x	10.0x	32%	0.66x		
MongoDB	MDB-US	\$443.15	\$36,911	\$36,129	\$2,046	\$2,509	23.1%	22.6%	\$210	\$276	10.3%	11.0%	NM	NM	15.3x	12.5x	33%	0.66x		
Palantir	PLTR-US	\$24.94	\$62,958	\$59,283	\$2,673	\$3,228	20.1%	20.8%	\$910	NM	34.1%	NM	65.1x	NA	20.3x	16.8x	54%	1.01x		
Procore	PCOR-US	\$79.67	\$12,173	\$11,495	\$1,140	\$1,367	20.0%	19.9%	\$112	\$166	9.8%	12.2%	NM	69.0x	9.2x	7.7x	30%	0.46x		
SEMRush	SEMR-US	\$12.64	\$1,883	\$1,653	\$370	\$437	20.3%	18.1%	\$8	NM	2.2%	-	NM	NA	4.3x	3.7x	23%	0.21x		
Shopify	SHOP-US	\$77.50	\$134,325	\$130,233	\$8,555	\$10,228	21.2%	19.6%	\$1,228	\$1,755	14.4%	17.2%	NM	74.2x	11.1x	9.3x	36%	0.53x		
SmartSheet	SMAR-US	\$42.97	\$6,165	\$5,596	\$1,142	\$1,370	19.4%	19.9%	\$177	\$274	15.5%	20.0%	31.6x	20.5x	4.5x	3.8x	35%	0.23x		
Snowflake	SNOW-US	\$187.95	\$71,071	\$67,225	\$3,457	\$4,304	23.2%	24.5%	\$947	\$1,277	27.4%	29.7%	71.0x	52.7x	16.9x	13.5x	51%	0.73x		
UiPath	PATH-US	\$23.68	\$14,520	\$12,702	\$1,527	\$1,783	18.7%	16.8%	\$321	\$386	21.0%	21.6%	39.6x	32.9x	7.7x	6.6x	40%	0.41x		
Veeva	VEEV-US	\$224.15	\$37,380	\$33,352	\$2,749	\$3,144	16.8%	14.4%	\$1,025	\$1,191	37.3%	37.9%	32.5x	28.0x	12.0x	10.5x	54%	0.71x		
Workday	WDAY-US	\$291.68	\$82,361	\$77,527	\$8,413	\$9,825	15.9%	16.8%	\$1,944	\$2,436	23.1%	24.8%	39.9x	31.8x	8.8x	7.5x	39%	0.55x		
Zscaler	ZS-US	\$218.70	\$40,463	\$39,138	\$2,353	\$2,964	25.3%	26.0%	\$515	\$642	21.9%	21.7%	76.0x	60.9x	14.8x	11.7x	47%	0.58x		
Group Mean					\$2,387	\$2,865	19.8%	20.4%	\$488	\$652	16.1%	19.8%	55.2x	44.4x	10.7x	8.9x	36%	0.54x		
Solid Growth (10-15% CY24)																				
Alteryx	ALTX-US	\$48.06	\$3,950	\$4,463	\$1,079	\$1,202	11.2%	11.4%	\$71	\$100	6.5%	8.3%	63.2x	44.6x	3.7x	3.3x	18%	0.33x		
Appian	APPN-US	\$35.78	\$2,632	\$2,680	\$615	\$705	12.8%	14.5%	\$8	NM	1.3%	NM	NM	NA	4.3x	3.8x	14%	0.34x		
Asana	ASAN-US	\$20.05	\$4,908	\$4,426	\$716	\$830	10.3%	15.9%	(\$5)	\$52	(0.6%)	6.3%	NM	85.0x	5.8x	5.0x	10%	0.56x		
Bill.com	BILL-US	\$65.54	\$7,109	\$6,296	\$1,309	\$1,545	9.8%	18.1%	\$251	\$382	19.1%	24.7%	25.1x	16.5x	4.6x	3.9x	29%	0.46x		
Guidewire	GWRE-US	\$117.87	\$10,730	\$10,414	\$1,045	\$1,184	12.8%	13.3%	\$140	NM	13.4%	NM	74.3x	43.7x	9.1x	8.0x	26%	0.71x		
HashiCorp	HCP-US	\$26.34	\$5,693	\$4,438	\$656	\$760	13.7%	15.9%	\$29	\$45	4.4%	6.0%	NM	97.7x	5.9x	5.1x	18%	0.43x		
Okta	OKTA-US	\$108.57	\$19,256	\$18,206	\$2,501	\$2,796	10.5%	11.8%	\$526	\$632	21.1%	22.6%	34.6x	28.8x	6.6x	5.9x	32%	0.63x		
PagerDuty	PD-US	\$24.48	\$2,488	\$2,360	\$483	\$567	12.2%	17.5%	\$94	\$127	19.6%	22.3%	25.0x	18.6x	4.4x	3.8x	32%	0.36x		
Splunk	SPLK-US	\$156.09	\$28,910	\$30,011	\$4,674	\$5,210	10.9%	11.5%	\$1,284	\$1,505	27.5%	28.9%	23.4x	19.9x	5.9x	5.3x	38%	0.54x		
Workiva	WK-US	\$85.13	\$5,066	\$5,015	\$721	\$831	14.4%	15.3%	\$109	NM	15.1%	NM	46.2x	NA	6.4x	5.6x	29%	0.45x		
Group Mean					\$1,380	\$1,563	11.9%	14.5%	\$251	\$406	12.7%	17.0%	41.7x	44.4x	5.7x	5.0x	25%	0.48x		
OK Growth (<10% CY24)																				
Amplitude	AMPL-US	\$11.49	\$1,668	\$1,346	\$293	\$324	6.1%	10.4%	\$26	NM	8.7%	NM	52.8x	NA	3.7x	3.3x	15%	0.60x		
BigCommerce	BIGC-US	\$10.80	\$640	\$709	\$332	\$366	7.2%	10.3%	\$15	\$25	4.6%	6.8%	46.1x	28.4x	2.0x	1.8x	12%	0.28x		
Docusign	DOCU-US	\$49.50	\$12,386	\$10,796	\$2,905	\$3,110	5.7%	7.0%	\$702	\$712	24.2%	22.9%	15.4x	15.2x	3.6x	3.3x	30%	0.62x		
Domo	DOMO-US	\$11.53	\$481	\$536	\$324	\$341	1.7%	5.4%	\$2	\$13	0.6%	-	NM	41.6x	1.5x	1.4x	2%	0.87x		
LivePerson	LPSN-US	\$3.93	\$108	\$479	\$307	\$305	(23.7%)	(0.5%)	(\$6)	NM	(2.0%)	NM	NM	NA	1.6x	1.6x	(26%)	NM		
Teradata	TDAC-US	\$164.90	\$3,921	\$3,934	\$1,839	\$1,919	0.3%	4.4%	\$338	\$432	18.4%	22.5%	11.6x	9.1x	2.2x	2.1x	19%	7.00x		
Twilio	TWLO-US	\$60.34	\$11,967	\$8,943	\$4,361	\$4,743	5.0%	8.8%	\$445	\$583	10.2%	12.3%	20.1x	15.4x	1.9x	1.7x	15%	0.37x		
Unity	U-US	\$29.33	\$12,342	\$13,462	\$1,818	\$2,026	(16.9%)	11.5%	\$285	\$482	15.7%	23.8%	47.3x	27.9x	6.9x	6.2x	(14%)	(0.41x)		
WalkMe	WKME-US	\$9.40	\$887	\$621	\$281	\$308	5.3%	9.0%	\$24	\$40	8.6%	-	25.7x	15.7x	2.1x	1.9x	14%	0.39x		
Zoom	ZM-US	\$72.77	\$23,629	\$16,666	\$4,610	\$4,762	1.8%	3.3%	\$1,480	\$1,571	32.1%	33.0%	11.3x	10.6x	3.2x	3.1x	34%	1.77x		
Zuora	ZUO-US	\$8.18	\$1,279	\$1,122	\$457	\$501	5.8%	9.8%	\$94	NM	20.7%	NM	11.9x	NA	2.2x	2.0x	26%	0.39x		
Group Mean					\$1,593	\$1,700	(0.1%)	7.3%	\$309	\$482	12.9%	20.2%	26.9x	20.5x	2.8x	2.6x	13%	1.19x		
Group Mean (x-Large Cap)					\$1,840	\$2,157	15.2%	17.4%	\$360	\$518	14.0%	18.4%	45.2x	41.9x	8.3x	6.9x	29%	0.65x		
Total Group Mean					\$10,266	\$11,492	14.6%	16.5%	\$2,											

Figure 51 : Truvalue ESG Employee Engagement Score



Source: TD Cowen, Truvalue

## VALUATION METHODOLOGY AND RISKS

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### Valuation Methodology

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#### Software:

Our valuation methodology is primarily based on Enterprise Value to Free Cash Flow (EV/FCF), followed by Price-to-Earnings (P/E). However, this varies by company; for instance, we will often use Enterprise Value to Revenue (EV/Revs) or a discounted cash flow (DCF) analysis for software companies that are primarily subscriptions-based, or for growth companies that have recently entered the public equity markets.

We make investment recommendations on certain early stage, pre-revenue companies based upon an assessment of their business model, technology, probability of market success, and the potential market opportunity, balanced by an assessment of applicable risks. Such companies may not be assigned a price target.

### Investment Risks

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#### Software:

The global economy or specific end markets significantly worsen, contracting IT spending and impairing software growth. The rate of SaaS/Cloud adoption slows, resulting in prolonged sales cycles and higher-than-anticipated quarterly volatility across much of our coverage universe. Competition increases materially, driving deflationary pricing pressure and compressing margins. In particular, innovation by new entrants in the software sector often produces solutions with similar or better functionality at materially lower prices than incumbents' legacy offerings.

## ADDENDUM

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