

EQUITY RESEARCH

March 3, 2023

Industry Update

Software Valuation Monthly – February 2023

Tech Reverses Gains As Rate Repricing Narrative Takes Focus

Our Conclusion

February was a weaker month for software stocks, reversing some of the gains from the January rally. The weaker returns were driven by rising interest rate expectations and persistently stubborn inflation. February was also a busy Q4 earnings month, with company-specific commentary around the demand environment and 2023 outlook driving outsized stock reactions. The S&P 500 Software Index outperformed the TSX by 190 bps in February and ended the month down 0.7%. Our coverage returned -1.3% in February, with all but four companies posting positive returns. Our coverage was impacted by negative returns as investors digested recent earnings (CTS, TIXT) and assessed the read-throughs for those yet to report (SFTC, DCBO).

We continue to take a barbell approach to our top picks, with a mix of defensive names (Constellation and CGI) balanced by higher-growth, profitable SaaS names (KXS and DCBO)

Key Points

Unprofitable SaaS names outperformed their profitable peer group by 200 bps in the month, a continuation of the trend from January. The outperformance of the unprofitable SaaS group in February appears driven by a combination of better-than-expected Q4 earnings and a focus on the path to profitability. The valuations of Canadian consolidators in our coverage were roughly in line with the broader market trends, however, CSU underperformed the peer group, down 2 turns of EBITDA after it announced the purchase of WideOrbit and the Lumine group spinoff.

Looking at software names on a Rule-of-40 basis, all groups of SaaS and Mature Software names saw multiple contraction in February regardless of Rule-of-40 scores. Tier 3 SaaS saw the largest contraction (0.8x), followed by Tier 1 SaaS (0.36x). Tier 1 and Tier 2 Mature Software also saw multiple contraction (0.52x/0.42x). The differential between Tier 1 and Tier 4 SaaS valuations is now 4x, while average Tier 1 Mature Software is now trading 1x below Tier 1 SaaS valuations, indicating an uptrend for SaaS multiples.

The average EV/Sales multiple across our coverage was 3.8x in February, 1.9x below the two-year average and ~1.7x below the five-year average. DSGX is the only name in our coverage trading above its five-year average (+1x premium), while CGI is trading at the same level as its two-year and five-year average. The rest of our coverage continues to trade at a discount to two-year and five-year averages. From a valuation perspective, we continue to like Kinaxis, which is trading at a 2.2x discount to its five-year average.

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Sector:
Information Technology

All figures in Canadian dollars unless otherwise stated.

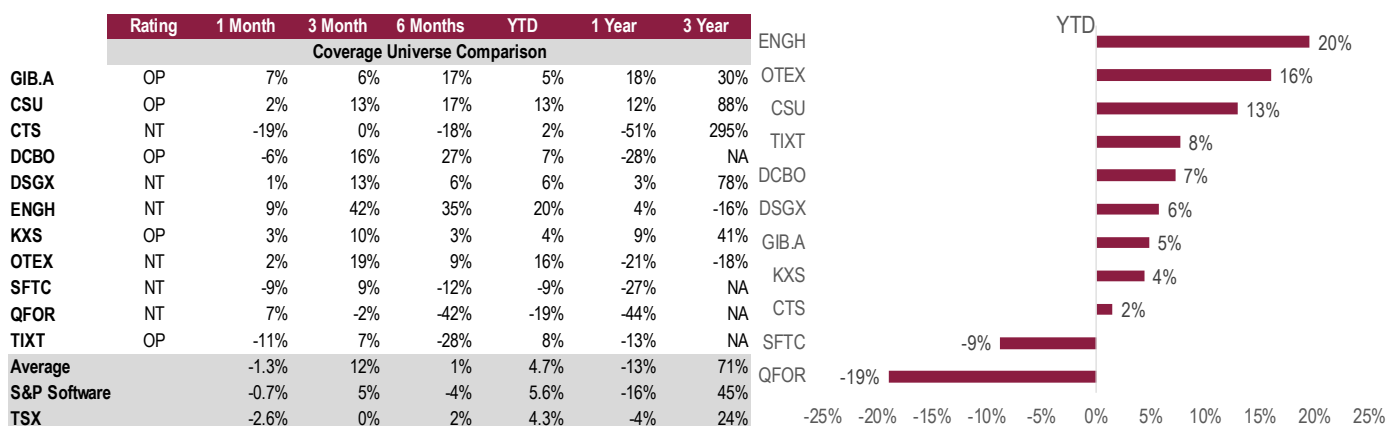
For required regulatory disclosures please refer to "Important Disclosures" beginning on page 19.

Coverage Universe Returns

January saw an average return of -1.3% for our names under coverage, reversing some of the gains from the January rally. Worse-than-expected inflation data was released in February, which brought back the Fed rate hike narrative with the terminal rate projections increasing by 50 bps during February.

Returns in our coverage were largely positive for SaaS and mature software names, with the average decline of -1.3% primarily driven by BPO and IT Solution names. The worst performers include CTS (-19%) and TIXT (-11%), due to weaker-than-expected Q4 results that highlight a slowing demand environment. The best performer was GIB.a (+7%) on a strong Q4 and ENGH (+9%), with the company expected to execute on M&A in the current valuation environment.

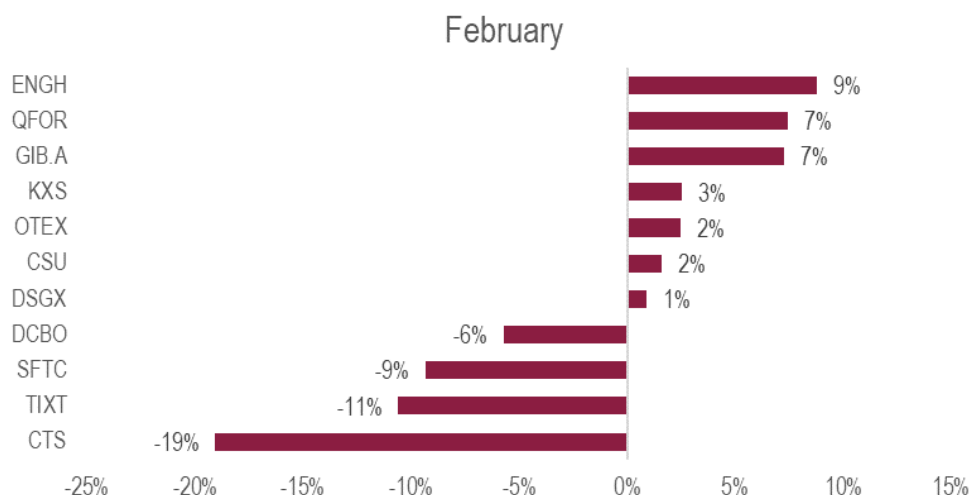
Exhibit 1: CIBC Software/Services Coverage – Share Price Return History, As Of Feb 28, 2023



Note: OP=Outperformer; NT=Neutral. Source: FactSet and CIBC World Markets Inc.

Investors focused on the more mature software names in February amid renewed interest rate concerns, with ENGH (+9%) and GIB.a (+7%) outperforming. QFOR also has a positive month (+7%) as investor focus shifted to value. CTS (-19%), SFTC (-9%), TIXT (-11%) and DCBO (-6%) generated a negative return in February. Average returns in our coverage were 60 bps below the S&P Software Index (0.7%) but outperformed the TSX returns (2.6%).

Exhibit 2: CIBC Software/Services Coverage – Stock Price Returns, Feb 2023



Source: FactSet and CIBC World Markets Inc.

The average EV/Sales multiple across our coverage was 3.8x in February, 1.9x below the two-year average of 5.7x and ~1.7x below the five-year average. The entirety of our coverage continues to trade at a discount to their respective two-year averages, with the exception of CGI which is now trading in line with its two-year and five-year average. Descartes is the only name in our coverage trading above its five-year average (+1x premium). From a valuation perspective, we continue to like Kinaxis, which is trading at a 2.2x discount to its five-year average.

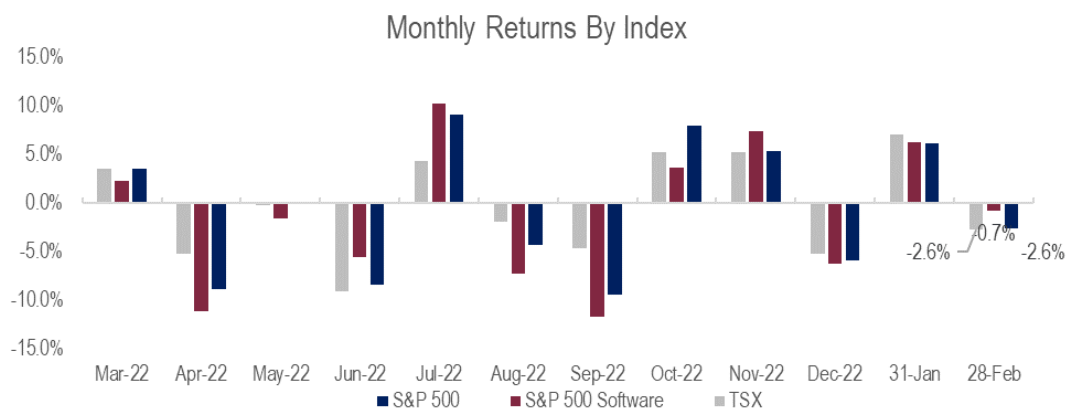
Exhibit 3: CIBC Software/Services Coverage – Historical Valuation, Feb 28, 2023

Company	EV/Sales (FY2)	2-Year Average	Δ	5-Year Average	Δ
CGI Inc.	2.2x	2.2x	0.0x	2.2x	0.0x
Constellation	4.3x	5.2x	-0.9x	5.0x	-0.7x
Converge	0.4x	0.5x	-0.1x	NA	NA
Descartes	11.5x	11.7x	-0.2x	10.3x	1.1x
Docebo	5.1x	9.3x	-4.2x	NA	NA
Enghouse	4.4x	4.8x	-0.4x	4.7x	-0.3x
Kinaxis	7.3x	10.6x	-3.3x	9.5x	-2.2x
Open Text	2.0x	4.0x	-2.0x	4.1x	-2.0x
Q4 Inc	0.6x	NA	NA	NA	NA
Softchoice	0.9x	NA	NA	NA	NA
TELUS International	2.0x	NA	NA	NA	NA
Average	3.8x	5.7x	-1.9x	5.5x	-1.8x
Median	3.2x	5.2x	-2.0x	4.9x	-1.6x

Source: FactSet and CIBC World Markets Inc.

U.S.-listed software stocks were down 0.7% in the month, outperforming the TSX and the S&P 500 by 190 bps.

Exhibit 4: S&P 500, S&P 500 Software, TSX – Index Returns, Mar 2022 – Feb 2023

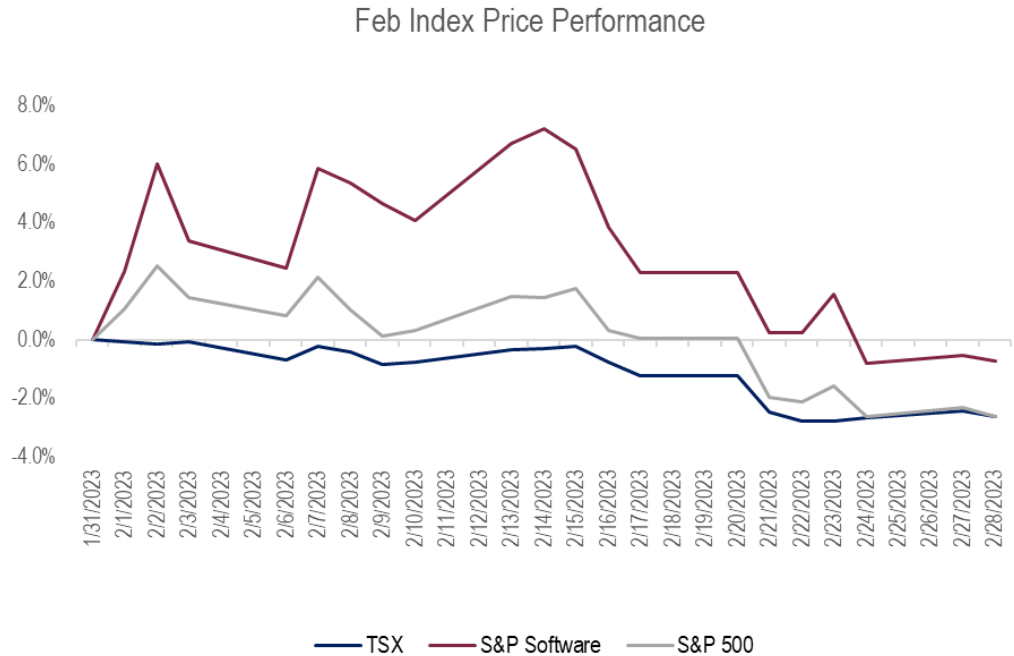


Source: FactSet and CIBC World Markets Inc.

The bullish rally of December/January slowed in February as markets digested economic data and comments from U.S. Federal Reserve officials, which prompted discussion on the odds that the Central Bank would hike rates to a higher level than market forecasts, and keep them elevated for longer than was initially expected. The S&P Software Index outperformed the broader S&P 500 this month, driven by a largely solid Q4 reported by tech companies leading to outsized stock price reactions. Both the TSX and S&P 500 closed the month down

2.6%, 190 bps below the S&P 500 Software index. The line chart in Exhibit 5 shows that the both S&P Software index and S&P 500 made gains in the first half of the month but declined over the last week of February as new economic data was released.

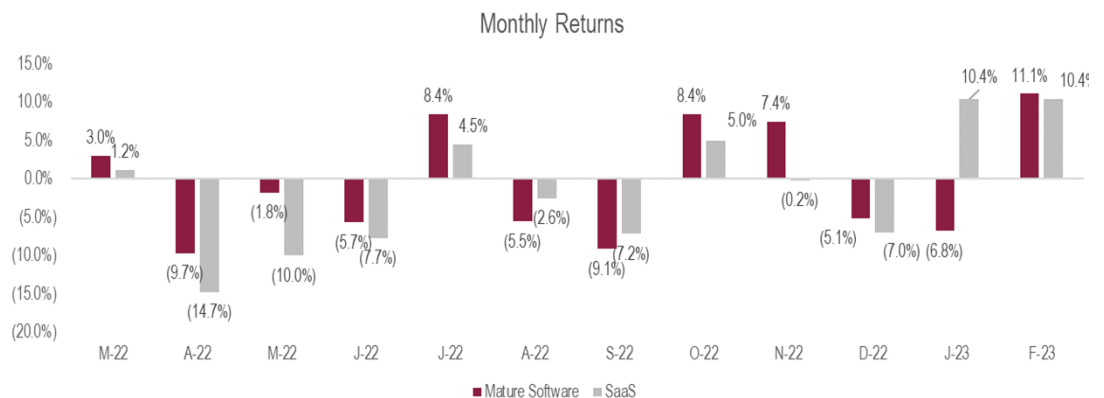
Exhibit 5: S&P 500, S&P Software, TSX Indices – Price Returns, Feb 2023



Source: FactSet and CIBC World Markets Inc.

In February, SaaS stocks extended the trend from the previous month, finishing with a positive return of 10.4% but underperforming the Mature Software names by 70 bps. Unprofitable SaaS names showing a solid outlook with a focus on generating profitability and reducing burn performed better this month as the market focused on Q4 earnings results and forward guidance.

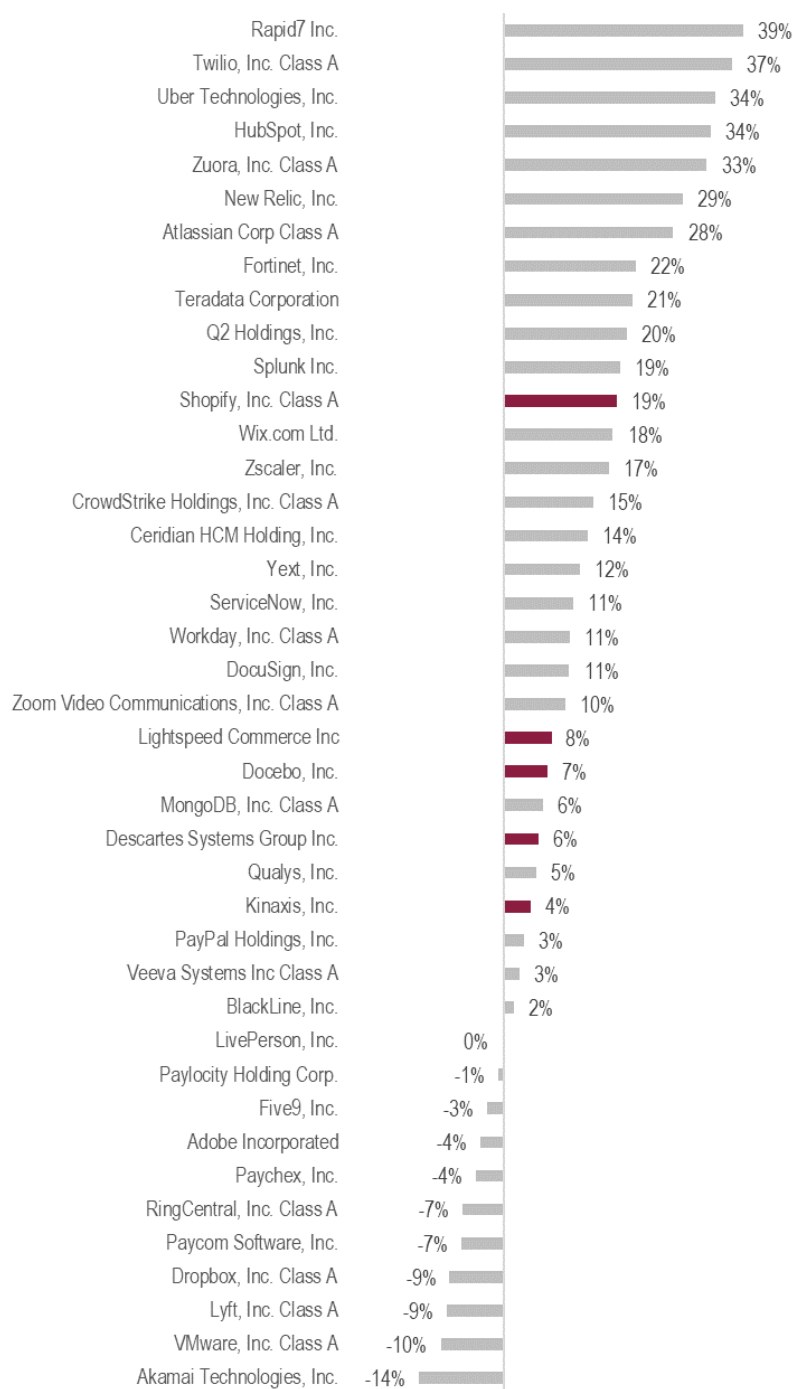
Exhibit 6: SaaS And Mature Software – Returns By Month, March 2022 – Feb 2023



Source: FactSet and CIBC World Markets Inc.

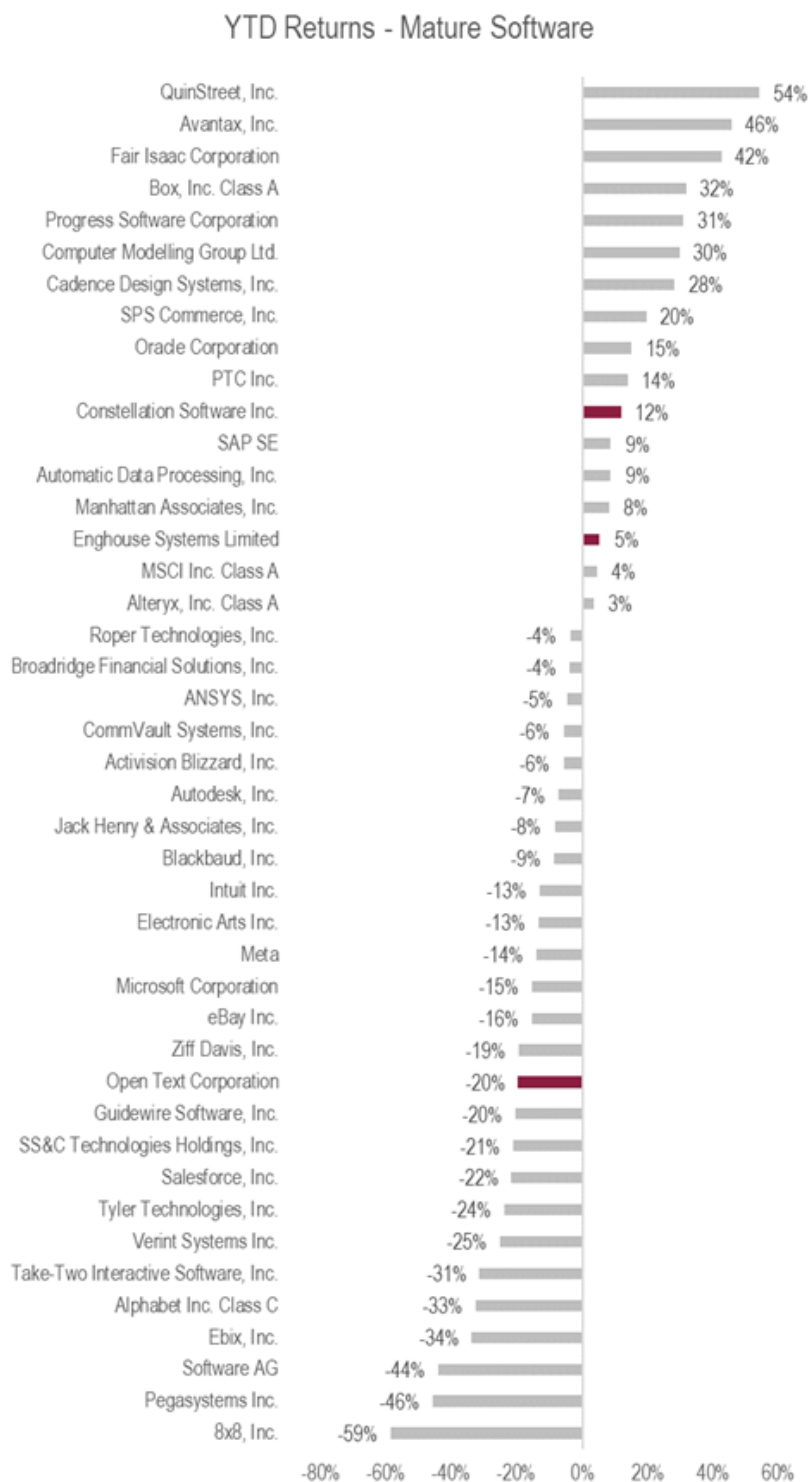
Exhibit 7: SaaS Stocks – Return Performance, Year To Date As Of Feb 28, 2023

YTD Returns - SaaS

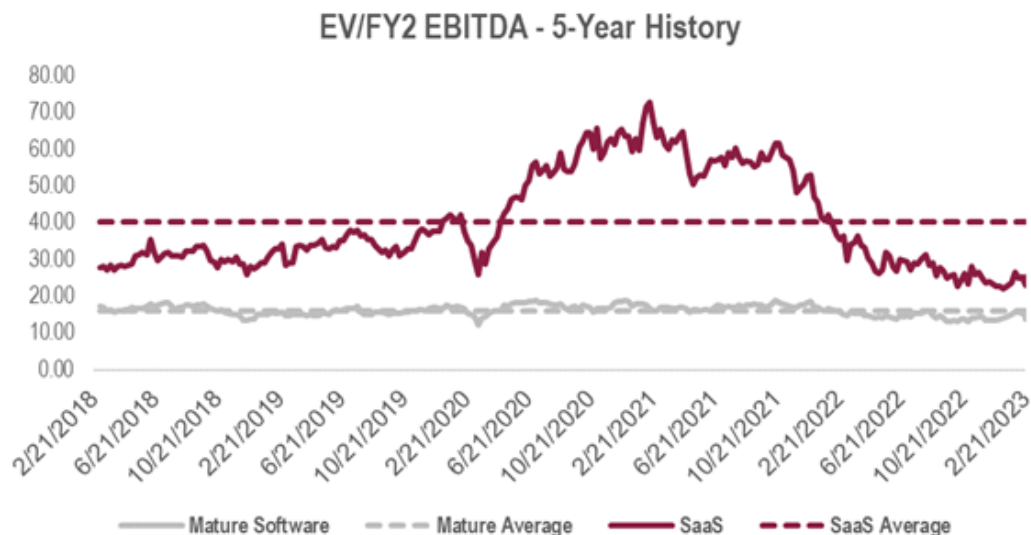


Source: FactSet and CIBC World Markets Inc.

Exhibit 8: Mature Software Stocks – Return Performance, Year To Date As Of Feb 28, 2023



Source: FactSet and CIBC World Markets Inc.

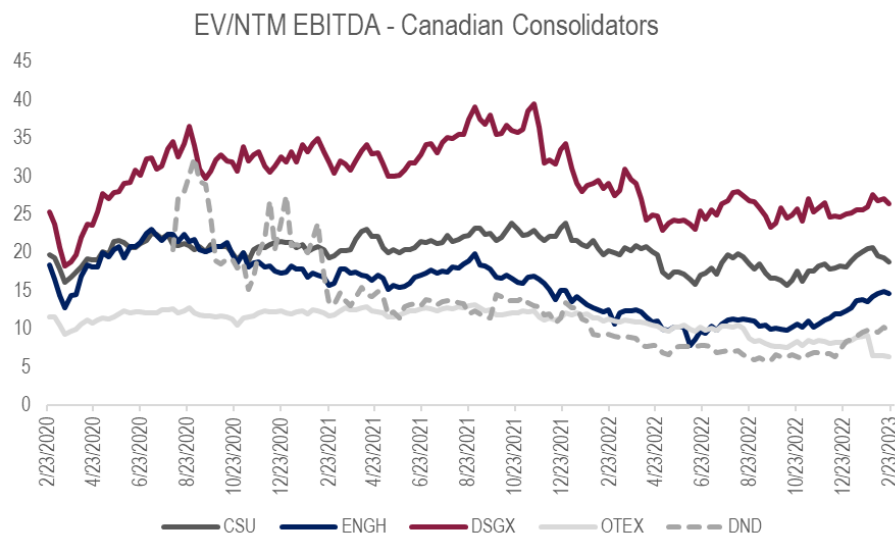
Exhibit 9: Mature Software Vs. SaaS – Five-year Valuation History, Feb 2018 – Feb 2023

Source: FactSet and CIBC World Markets Inc.

The line graphs in Exhibit 9 above highlight the decline in tech valuations since the beginning of the tech selloff in November 2021. Median EV/FY2 sales SaaS valuations are roughly 4x below the five-year average. We highlight that on an EV/FY2 sales basis, the SaaS and Mature Software names have converged since November 2021, with mature software now trading at a similar multiple compared to the 6.9x peak observed in November 2021.

From an EV/FY2 EBITDA perspective, the median valuation of 24x for our SaaS basket has improved one turn from December but down 1.3x from last month, near the five-year low. The SaaS multiple is now trading at a 40% discount to the five-year average, compared to Mature Software trading at a 15% discount over the same period.

The valuations of Canadian consolidators in our coverage were roughly in line with the broader market trends, however, CSU underperformed the peer group, down 2 turns of EBITDA after it closed the purchase of WideOrbit and the Lumine group spinoff.

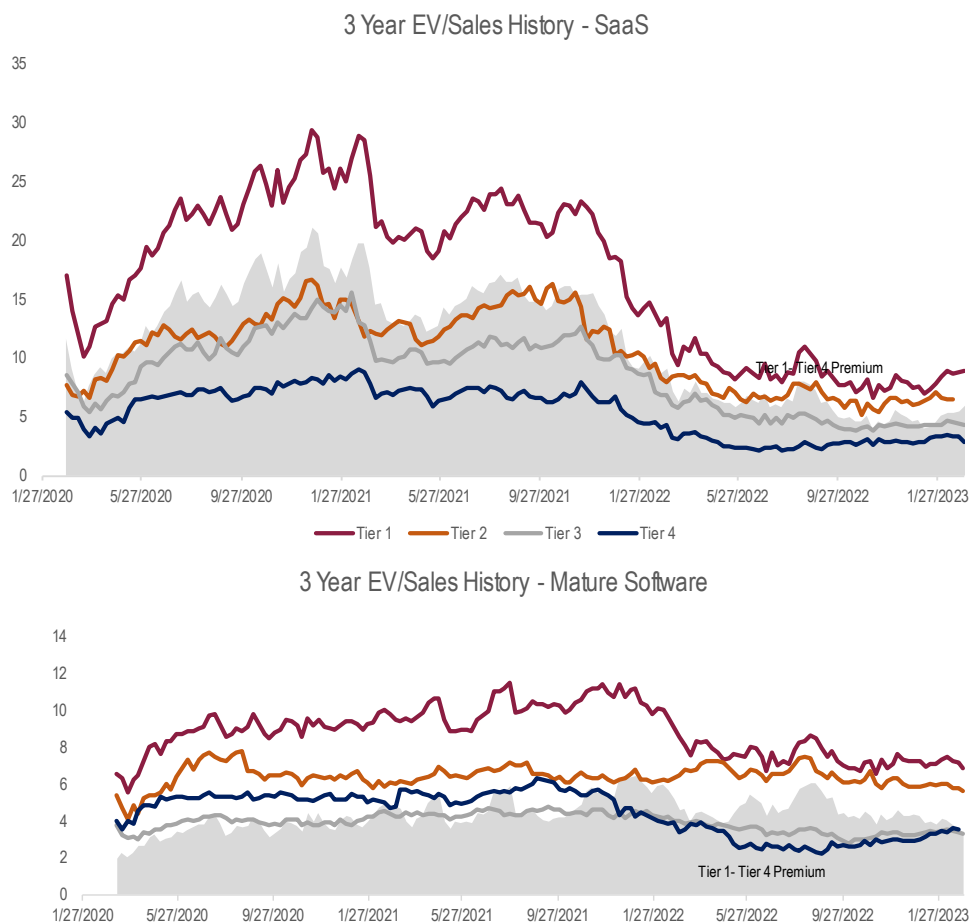
Exhibit 10: Canadian Consolidators – EV/NTM EBITDA, March 2020 – Feb 2023

Source: FactSet and CIBC World Markets Inc.

Rule-of-40 Valuation Premiums

To better understand the link between Rule-of-40 scores and valuation multiples, in the tables in Exhibits 13 and 14 further below we have grouped the SaaS and Mature Software populations into tiers based on their Rule-of-40 scores, and examined the changes in multiples over a three-year period. All SaaS and Mature Software tiers contracted during the month; Tier 3 SaaS led the outperformance (0.8x), followed by Tier 1 SaaS (0.36x). Tier 1 and Tier 2 Mature Software followed suit (0.52x/0.42x). The differential between Tier 1 and Tier 4 SaaS valuations is now 4x, while average Tier 1 Mature Software is now trading 1x below Tier 1 SaaS valuations, indicating an uptrend for SaaS multiples.

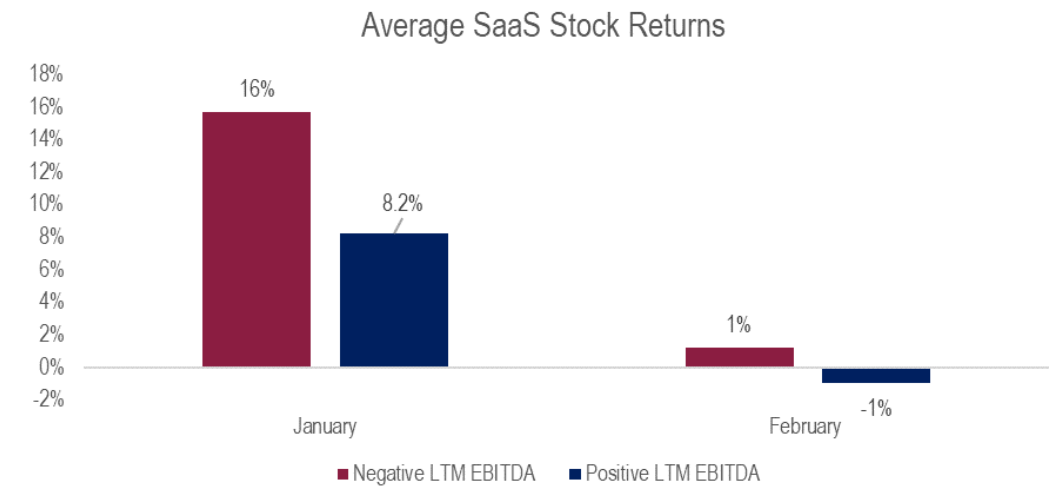
Exhibit 11: Mature Software Vs. SaaS – EV/S Valuation History, Feb 2020 – Feb 2023



Source: FactSet and CIBC World Markets Inc.

Of the 50 SaaS names we track, the 29 that reported negative LTM EBITDA outperformed the positive EBITDA group by 200 bps in the month, a continuation from the trend we saw in January. The performance of the unprofitable names is likely a combination of better-than-expected earnings that focus on cash runway and pathway to profitability.

Exhibit 12: SaaS Returns – Grouped By EBITDA Positivity, Feb 2023



Source: FactSet and CIBC World Markets Inc.

Exhibit 13: SaaS Stocks – Comp Table, 2022A – 2024E

	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C22E	C23E	C24E
Tier 1 SaaS (Rule of 40 > 60)										
Nuvei*	35%	30%	10%	36%	64%	46%	4,106	4.9x	4.2x	3.5x
CrowdStrike Holdings, Inc.	58%	30%	36%	29%	88%	65%	26,374	12.2x	9.1x	7.0x
Zscaler, Inc.	60%	23%	34%	22%	82%	56%	17,988	14.1x	10.5x	8.2x
Veeva Systems Inc	18%	44%	12%	36%	62%	47%	22,784	10.8x	9.6x	8.2x
HubSpot, Inc.	33%	15%	19%	11%	48%	30%	18,470	10.7x	9.0x	7.4x
The Trade Desk Holding	32%	33%	19%	29%	64%	48%	26,256	16.6x	13.9x	11.1x
DataDog	63%	23%	25%	18%	86%	43%	23,103	13.8x	11.0x	8.5x
Tier 1 SaaS (Rule of 40 > 60) Average								10.5x	8.5x	6.9x
	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C22E	C23E	C24E
Tier 2 SaaS (Rule of 40 b/w 41-60)										
Descartes Systems	17%	37%	10%	38%	54%	48%	5,990	12.5x	11.3x	10.3x
Cloudflare Inc	49%	-1%	37%	3%	48%	40%	19,366	19.9x	14.5x	10.9x
DocuSign, Inc.	25%	18%	8%	19%	42%	27%	11,914	4.8x	4.5x	4.1x
Qualys, Inc.	18%	38%	14%	34%	56%	48%	4,225	8.6x	7.6x	6.7x
ServiceNow, Inc.	23%	30%	22%	30%	53%	52%	84,930	11.7x	9.6x	7.9x
Twilio, Inc.	35%	-7%	13%	4%	27%	16%	9,324	2.4x	2.2x	1.9x
MongoDB, Inc.	53%	-1%	25%	3%	51%	29%	14,162	11.5x	9.1x	7.2x
Docebo, Inc.*	46%	0%	29%	-4%	46%	25%	943	6.6x	5.1x	4.0x
Kinaxis, Inc.*	44%	3%	19%	1%	46%	20%	3,053	8.3x	7.3x	6.3x
Paylocity Holding Corp.	37%	19%	28%	16%	56%	45%	10,560	10.5x	8.2x	6.8x
Workday, Inc.	21%	21%	16%	23%	42%	39%	44,760	7.3x	6.3x	5.4x
Dropbox, Inc.	8%	37%	7%	34%	44%	40%	8,354	3.6x	3.4x	3.2x
Tier 2 SaaS (Rule of 40 b/w 41-60) Average								9.0x	7.4x	6.2x
	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C22E	C23E	C24E
Tier 3 SaaS (Rule of 40 b/w 25-40)										
Lightspeed POS, Inc.*	49%	-13%	23%	-4%	36%	19%	1,481	2.2x	1.7x	1.3x
Zoom Video Communication	7%	28%	2%	29%	35%	31%	15,322	3.5x	3.4x	3.3x
Ceridian HCM Holding, Inc.	30%	3%	20%	9%	33%	29%	11,897	9.5x	8.0x	6.9x
RingCentral, Inc.	25%	6%	10%	12%	31%	22%	4,569	2.3x	2.1x	1.9x
Rapid7 Inc.	28%	8%	13%	10%	36%	23%	3,423	5.0x	4.4x	3.8x
Splunk Inc.	31%	9%	17%	18%	40%	35%	19,169	5.6x	4.8x	4.1x
Akamai Technologies, Inc.	4%	23%	3%	14%	27%	17%	13,537	3.7x	3.6x	3.4x
VMware, Inc.	4%	25%	5%	30%	30%	35%	54,903	4.1x	3.9x	3.6x
BlackLine, Inc.	23%	10%	13%	8%	33%	21%	4,466	8.5x	7.5x	6.5x
Five9, Inc.	28%	5%	16%	7%	32%	23%	4,817	6.2x	5.3x	4.5x
Tier 3 SaaS (Rule of 40 b/w 25-40) Average								5.1x	4.5x	4.0x
	LTM Revenue Growth	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S		
								C22E	C23E	C24E
Tier 4 SaaS (Rule of 40 <28)										
New Relic, Inc.	18%	2%	16%	7%	20%	23%	4,851	5.5x	4.7x	4.1x
Zuora, Inc.	14%	3%	9%	0%	17%	9%	977	2.5x	2.3x	1.9x
Q2 Holdings Inc.	13%	4%	12%	4%	18%	16%	2,134	3.8x	3.4x	2.9x
Shopify, Inc.	21%	-3%	19%	-4%	18%	15%	47,829	8.5x	7.2x	5.9x
Teradata Corporation	-6%	23%	1%	18%	16%	20%	4,205	2.3x	2.3x	2.2x
Wix.com Ltd.	10%	1%	10%	8%	11%	17%	5,229	3.8x	3.4x	3.0x
Yext, Inc.	5%	4%	3%	-1%	8%	2%	919	2.3x	2.2x	2.0x
Q4 Inc.	6%	-27%	40%	-11%	-21%	29%	40	0.7x	0.6x	0.6x
LivePerson, Inc.	15%	-30%	3%	-12%	-15%	-9%	1,084	2.1x	2.0x	1.8x
Tier 4 SaaS (Rule of 40 <28 Average								3.5x	3.1x	2.7x
SaaS Average								6.9x	5.8x	4.9x

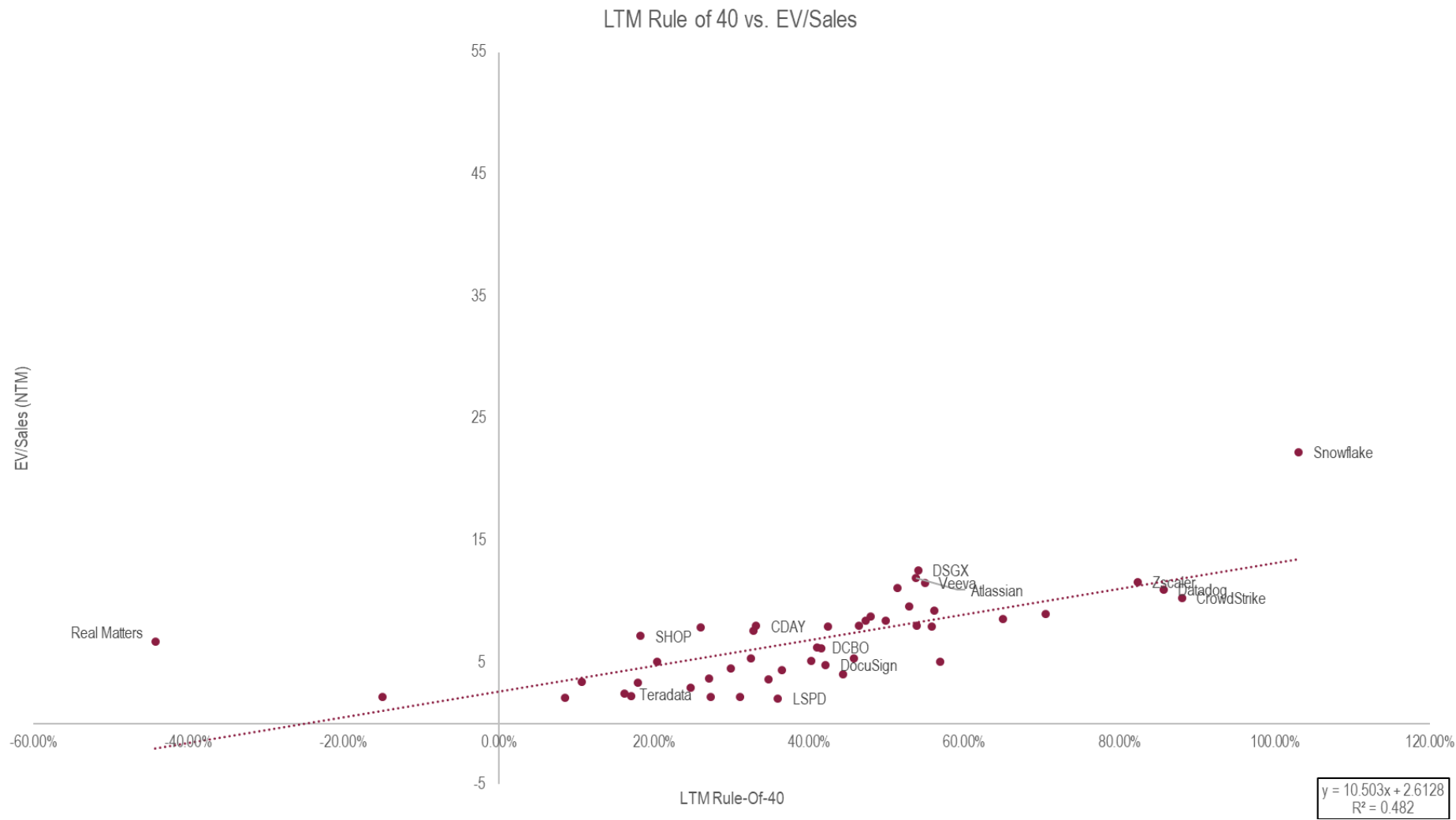
Source: FactSet and CIBC World Markets Inc.

Exhibit 14: Mature Software Stocks – Comp Table, 2022A – 2024E

	LTM Revenue	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S			EV/EBITDA		
								C22A	C23E	C24E	C22A	C23E	C24E
Tier 1 Mature Software (Rule of 40 > 45)													
Intuit Inc.	20%	30%	8%	31%	50%	40%	118,215	8.9x	8.0x	7.1x	23.5x	20.0x	17.0x
Tyler Technologies, Inc.	16%	20%	6%	15%	36%	20%	14,215	7.7x	7.3x	6.7x	29.9x	29.7x	26.3x
Progress Software	13%	32%	11%	34%	46%	NA	2,857	4.6x	4.2x	4.0x	10.9x	11.3x	10.4x
Autodesk, Inc.	13%	41%	9%	23%	54%	32%	42,997	8.7x	8.0x	7.2x	23.0x	21.0x	18.4x
Microsoft Corporation	10%	29%	7%	32%	40%	39%	1,823,647	9.0x	8.3x	7.4x	18.3x	16.9x	14.5x
Alphabet Inc. Class C	9%	21%	6%	25%	30%	31%	1,080,243	3.8x	3.6x	3.2x	9.8x	9.3x	8.2x
salesforce.com, inc.	21%	21%	9%	21%	42%	30%	168,746	5.5x	5.0x	4.5x	17.5x	15.1x	14.6x
Cadence Design Systems,	19%	31%	13%	33%	51%	46%	52,350	14.7x	13.0x	11.7x	34.0x	28.3x	24.7x
Tier 1 Mature Software (Rule of 40 > 45) Average								7.9x	7.2x	6.5x	20.9x	19.0x	16.8x
	LTM Revenue	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S			EV/EBITDA		
								C22A	C23E	C24E	C22A	C23E	C24E
Tier 2 Mature Software (Rule of 40 b/w 31-50)													
Constellation Software In	29%	19%	24%	23%	48%	47%	37,437	5.7x	4.9x	4.3x	22.4x	18.7x	16.2x
Facebook, Inc. Class A	-1%	16%	5%	14%	15%	19%	443,687	3.8x	3.6x	3.3x	8.5x	8.1x	7.1x
ANSYS, Inc.	8%	29%	11%	29%	38%	40%	26,474	12.8x	11.6x	10.6x	29.3x	26.2x	27.0x
Manhattan Associates, Inc.	16%	23%	8%	25%	38%	34%	8,772	11.4x	10.6x	9.5x	40.1x	39.8x	35.1x
SPS Commerce, Inc.	17%	18%	17%	23%	35%	39%	5,187	11.5x	9.9x	8.6x	39.2x	33.6x	28.7x
Ziff Davis Inc.	-2%	19%	-1%	21%	17%	20%	4,042	2.9x	2.9x	2.8x	8.0x	8.1x	7.5x
Jack Henry & Associates, Ir	7%	23%	6%	17%	30%	23%	11,840	5.9x	5.6x	5.2x	18.8x	17.4x	16.0x
Jack Henry & Associates, Ir	7%	23%	6%	17%	30%	23%	11,840	5.9x	5.6x	5.2x	18.8x	17.4x	16.0x
PTC Inc.	6%	23%	12%	29%	29%	41%	15,807	8.0x	7.3x	6.5x	19.7x	18.0x	15.6x
SS&C Technologies Holdin	5%	20%	5%	27%	25%	32%	21,675	4.1x	3.9x	3.8x	10.9x	10.0x	9.3x
Tier 2 Mature Software (Rule of 40 b/w 31-50) Average								7.2x	6.6x	6.0x	21.6x	19.7x	17.9x
	LTM Revenue	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S			EV/EBITDA		
								C22A	C23E	C24E	C22A	C23E	C24E
Tier 3 Mature Software (Rule of 40 b/w 20-30)													
Open Text Corporation	3%	22%	59%	10%	25%	68%	11,909	3.0x	2.3x	2.0x	8.8x	6.6x	5.4x
Blackbaud, Inc.	14%	18%	3%	16%	32%	19%	3,836	3.6x	3.5x	3.4x	14.6x	11.7x	10.9x
ADP Inc.	10%	19%	6%	22%	29%	28%	92,895	5.4x	5.1x	4.7x	20.2x	18.1x	16.6x
CommVault Systems, Inc.	4%	24%	0%	21%	28%	21%	2,361	3.0x	3.0x	2.9x	14.2x	14.4x	13.4x
SAP SE	11%	15%	6%	16%	25%	22%	141,030	4.6x	4.3x	4.0x	17.6x	15.4x	13.4x
eBay Inc.	-8%	19%	2%	15%	11%	17%	26,799	2.7x	2.7x	2.6x	8.0x	8.3x	7.8x
Altus Group Limited	18%	9%	6%	14%	27%	20%	2,987	4.1x	3.8x	3.4x	22.1x	22.0x	22.0x
Verint Systems Inc.	4%	12%	3%	16%	16%	19%	2,654	2.9x	2.8x	2.6x	11.1x	9.9x	9.0x
Blucora, Inc.	#N/A	#N/A	NA	NA	#N/A	NA	1,149	1.7x	1.5x	1.4x	21.4x	8.7x	7.7x
Tier 3 Mature Software (Rule of 40 b/w 20-30) Average								3.5x	3.2x	3.0x	15.3x	12.8x	11.8x
	LTM Revenue	LTM FCF Margin	NTM Revenue Growth	NTM FCF Margin	LTM Rule Of 40	NTM Rule Of 40	Enterprise Value (\$MM)	EV/S			EV/EBITDA		
								C22A	C23E	C24E	C22A	C23E	C24E
Tier 4 Mature Software (Rule of 40 <20)													
Enghouse Systems Limit	-8%	24%	3%	30%	15%	33%	2,188	6.8x	4.7x	4.7x	15.5x	14.4x	14.4x
Oracle Corporation	11%	18%	12%	18%	30%	30%	316,957	6.8x	6.1x	5.6x	13.5x	12.1x	10.8x
Software AG	15%	1%	1%	12%	15%	13%	1,073	1.1x	1.1x	1.0x	6.3x	5.9x	4.9x
Alteryx, Inc. Class A	60%	-16%	15%	1%	43%	16%	5,159	6.0x	5.2x	4.5x	>50	>50	44.2x
QuinStreet, Inc.	-2%	1%	15%	5%	-1%	20%	837	1.4x	1.3x	1.1x	28.8x	21.0x	13.2x
Pegasystems Inc.	9%	-1%	6%	9%	8%	16%	4,195	3.2x	3.0x	2.7x	>50	23.2x	16.3x
Guidewire Software, Inc.	14%	-3%	8%	7%	11%	15%	5,521	6.5x	5.9x	5.3x	NEG	>50	>50
BlackBerry Limited	-4%	-41%	31%	-12%	-46%	19%	2,263	2.5x	2.4x	2.2x	NEG	NEG	NEG
								4.3x	3.7x	3.4x	16.0x	15.3x	17.3x
Mature Software Average								5.7x	5.2x	4.7x	18.9x	16.9x	15.8x

Source: FactSet and CIBC World Markets Inc.

Exhibit 15: Software Stocks – Rule-of-40 Vs. EV/Sales, Last 12 Months



Source: FactSet and CIBC World Markets Inc.

Exhibit 16: SaaS Stocks Grouped By Rule-of-40 – Price Returns, Three-year History

	Rule Of 40	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
CrowdStrike	88%	10.3x	15.7%	-13.5%	-33.9%	-43.0%	-38.2%	102.4%
Zscaler	82%	11.8x	2.8%	-4.1%	-17.6%	-34.3%	-45.2%	152.3%
Veeva	72%	11.5x	-3.4%	-11.3%	-16.9%	-39.2%	-27.7%	16.7%
HubSpot	48%	8.7x	7.8%	34.0%	14.8%	-2.4%	-26.3%	115.6%
Atlassian	54%	11.8x	0.0%	30.0%	-33.6%	-29.7%	-46.2%	13.4%
DataDog	86%	11.0x	-0.9%	4.2%	-27.1%	-22.3%	-52.5%	69.5%
The Trade Desk	64%	14.2x	7.7%	14.2%	-10.7%	-30.1%	-34.4%	94.8%
Descartes	54%	12.5x	2.0%	10.3%	4.7%	26.0%	3.4%	78.3%
ServiceNow	53%	9.7x	-5.8%	7.5%	-0.6%	-21.5%	-25.5%	32.5%
Qualys	56%	7.9x	3.5%	-4.1%	-22.2%	-3.1%	-5.7%	47.4%
Average	66%	10.9x	3%	7%	-14%	-20%	-30%	72%
Median	60%	11.3x	2%	6%	-17%	-26%	-31%	74%

	Rule Of 40	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Twilio	29%	2.2x	11.3%	43.7%	-3.4%	-80.1%	-61.6%	-40.3%
MongoDB	51%	11.1x	-6.5%	46.0%	-35.1%	-41.6%	-45.2%	37.4%
Docebo	46%	6.2x	-2.2%	17.7%	21.5%	-42.0%	-28.0%	188.6%
Paylocity	56%	9.3x	-6.8%	-7.8%	-20.1%	-6.5%	-9.3%	48.7%
Workday	42%	6.1x	4.4%	27.7%	12.7%	-22.6%	-19.0%	7.1%
Dropbox	44%	4.1x	-12.8%	-8.1%	-4.6%	-8.1%	-10.1%	4.3%
Shopify	18%	7.3x	-17.9%	8.2%	30.0%	-63.7%	-40.7%	-11.2%
Lightspeed	36%	2.0x	-14.6%	2.9%	-17.0%	-76.8%	-37.4%	-37.2%
Average	40%	6.0x	-6%	16%	-2%	-43%	-31%	25%
Median	43%	6.2x	-7%	13%	-4%	-42%	-33%	6%

	Rule Of 40	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
RingCentral	34%	2.2x	-17.3%	-5.1%	-23.2%	-91.3%	-74.7%	-86.0%
Rapid7	36%	4.4x	20.1%	70.3%	-17.7%	-47.5%	-54.3%	2.2%
Five9	33%	5.3x	-15.6%	8.5%	-32.7%	-62.2%	-40.0%	-9.6%
Vmware	30%	4.5x	-11.5%	-6.3%	-5.1%	-21.5%	-6.1%	-8.6%
BlackLine	33%	7.5x	-4.7%	9.3%	0.6%	-48.7%	-9.2%	9.3%
Akamai	27%	3.7x	-17.0%	-20.7%	-19.6%	-30.9%	-32.9%	-16.1%
Ceridian	33%	8.0x	0.3%	12.4%	22.3%	-31.6%	0.0%	3.1%
Wix.com	11%	3.5x	2.6%	7.7%	43.0%	-63.8%	-1.1%	-32.5%
Average	30%	4.9x	-5%	9%	-4%	-50%	-27%	-17%
Median	33%	4.4x	-8%	8%	-11%	-48%	-21%	-9%

	Rule Of 40	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Splunk	40%	5.1x	7.6%	34.0%	13.9%	-39.7%	-13.2%	-30.4%
Teradata	16%	2.4x	17.3%	24.2%	23.9%	81.4%	-18.5%	104.4%
Kinaxis	46%	8.0x	6.3%	7.1%	4.7%	-12.1%	9.1%	40.5%
Q2 Holdings	19%	3.4x	-1.6%	27.6%	-18.7%	-74.5%	-50.4%	-57.2%
Zuora	17%	2.2x	12.9%	12.9%	10.3%	-39.2%	-44.2%	-36.0%
New Relic	20%	5.0x	18.9%	38.6%	20.2%	11.6%	10.2%	29.7%
Yext	8%	2.1x	9.1%	35.4%	64.9%	-53.3%	-1.1%	-51.6%
LivePerson	-15%	2.2x	-20.3%	-5.1%	-12.8%	-83.7%	-50.1%	-61.8%
Average	19%	3.8x	6%	22%	13%	-26%	-20%	-8%
Median	18%	2.9x	8%	26%	12%	-39%	-16%	-33%

Source: FactSet and CIBC World Markets Inc.

Exhibit 17: Mature Software Stocks Grouped By Rule-of-40 – Price Returns, Three-year History

	Rule Of 40	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Intuit Inc.	58%	22.0x	-3.7%	5.6%	-5.7%	7.2%	-14.2%	53.2%
Tyler Technologies	46%	30.2x	-1.9%	-1.7%	-13.5%	-26.4%	-25.0%	2.5%
Alphabet Inc.	40%	10.2x	-10.3%	-6.2%	-17.3%	3.1%	-33.1%	34.8%
Meta Platforms Inc. Class A	27%	8.4x	15.3%	60.8%	7.4%	-36.0%	-17.1%	-9.1%
Progress Software	48%	11.6x	8.7%	9.5%	19.3%	27.1%	30.3%	54.0%
Microsoft	46%	18.4x	0.5%	3.2%	-4.6%	12.1%	-16.5%	54.0%
Autodesk	53%	21.3x	-5.8%	1.7%	-1.5%	-34.9%	-9.8%	4.1%
Cadence Design	47%	28.8x	4.3%	17.0%	11.0%	41.4%	27.4%	191.7%
Salesforce.com	42%	17.4x	-0.6%	6.5%	4.8%	-26.5%	-22.3%	-4.0%
Average	58%	0.6x	58%	58%	58%	58%	58%	58%
Median	54%	0.5x	54%	54%	54%	54%	54%	54%

	Rule Of 40	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Constellation Software	48%	19.1x	1.4%	13.7%	20.8%	44.5%	11.8%	87.6%
ANSYS	35%	26.5x	13.9%	25.6%	22.3%	-16.5%	-6.3%	25.4%
Manhattan Associates	37%	40.5x	12.6%	18.6%	1.8%	36.7%	7.5%	113.4%
SPS Commerce	39%	34.8x	10.1%	13.3%	23.4%	38.7%	16.0%	186.4%
Ziff Davis Inc	15%	8.1x	-11.9%	-11.1%	2.2%	-7.0%	-21.5%	4.0%
PTC Inc.	29%	18.9x	-7.2%	2.2%	9.1%	4.8%	12.6%	65.9%
Jack Henry & Associates	34%	18.9x	-9.0%	-13.0%	-14.5%	1.4%	-7.1%	8.2%
SS&C Technologies	29%	10.3x	-1.6%	13.6%	5.3%	-19.3%	-21.7%	5.8%
Open Text	26%	8.3x	1.2%	16.1%	9.2%	-24.4%	-21.0%	-18.0%
Average	33%	20.6x	1%	9%	9%	7%	-3%	53%
Median	34%	18.9x	1%	14%	9%	1%	-6%	25%

	Rule Of 40	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
CommVault Systems	30%	14.8x	-6.8%	-9.5%	8.5%	6.3%	-6.4%	41.2%
Automatic Data Processing	31%	19.0x	-0.4%	-14.9%	-10.1%	24.8%	7.5%	42.1%
Blackbaud	33%	11.5x	-9.9%	-4.2%	6.5%	-3.2%	-10.9%	-17.9%
eBay	10%	8.5x	-6.3%	3.5%	4.0%	-8.7%	-15.9%	32.5%
Altus Group	26%	21.7x	8.9%	18.4%	18.9%	24.1%	24.2%	35.9%
Verint Systems	16%	13.0x	-1.3%	-2.2%	-22.9%	9.3%	-25.6%	33.7%
Pegasystems	4%	23.2x	20.7%	28.7%	26.7%	-65.2%	-46.8%	-48.8%
SAP SE	26%	14.6x	2.6%	2.5%	26.5%	0.2%	6.1%	-3.7%
Average	22%	15.8x	1%	3%	7%	-2%	-8%	14%
Median	26%	14.7x	-1%	0%	7%	3%	-9%	33%

	Rule Of 40	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Blucora	6%	8.9x	-2.6%	16.8%	42.4%	79.7%	43.7%	64.3%
Oracle	30%	13.2x	-1.8%	7.4%	17.9%	35.1%	15.0%	76.7%
Enghouse	15%	15.1x	9.4%	42.8%	34.1%	-30.3%	3.9%	-15.5%
Software AG	10%	9.0x	-28.5%	-24.8%	-30.7%	-43.8%	-44.7%	-36.4%
Alteryx	24%	66.4x	16.6%	50.3%	4.8%	-46.4%	4.8%	-53.2%
QuinStreet	-1%	31.2x	11.6%	21.3%	41.3%	-20.8%	50.8%	31.8%
Guidewire Software	11%	5996.0x	-4.1%	21.8%	-2.1%	-45.5%	-20.4%	-35.9%
BlackBerry Limited	-46%	NA	-9.2%	-18.3%	-32.1%	-37.2%	-39.1%	-23.5%
Average	6%	877.1x	-1%	15%	9%	-14%	2%	1%
Median	10%	15.1x	-2%	19%	11%	-34%	4%	-20%

Source: FactSet and CIBC World Markets Inc.

Exhibit 18: SaaS Stocks Grouped By LTM Revenue Growth – Price Returns, Three-year History

	LTM Rev Growth	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Lightspeed	49%	2.0x	-14.6%	2.9%	-17.0%	-76.8%	-37.4%	-37.2%
CrowdStrike	58%	10.3x	15.7%	-13.5%	-33.9%	-43.0%	-38.2%	102.4%
Twilio	35%	2.2x	11.3%	43.7%	-3.4%	-80.1%	-61.6%	-40.3%
Zscaler	60%	11.8x	2.8%	-4.1%	-17.6%	-34.3%	-45.2%	152.3%
Shopify	21%	7.3x	-17.9%	8.2%	30.0%	-63.7%	-40.7%	-11.2%
Docebo	46%	6.2x	-2.2%	17.7%	21.5%	-42.0%	-28.0%	188.6%
Zoom	11%	3.9x	0.6%	4.2%	-7.2%	-77.9%	-43.7%	-29.0%
MongoDB	53%	11.1x	-6.5%	46.0%	-35.1%	-41.6%	-45.2%	37.4%
HubSpot	33%	8.7x	7.8%	34.0%	14.8%	-2.4%	-26.3%	115.6%
DataDog	63%	11.0x	-0.9%	4.2%	-27.1%	-22.3%	-52.5%	69.5%
The Trade Desk	32%	14.2x	7.7%	14.2%	-10.7%	-30.1%	-34.4%	94.8%
CrowdStrike	58%	10.3x	15.7%	-13.5%	-33.9%	-43.0%	-38.2%	102.4%
Average	42%	8.2x	2%	12%	-10%	-46%	-41%	62%
Median	47%	9.5x	2%	6%	-14%	-43%	-39%	82%

	LTM Rev Growth	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Five9	32%	5.3x	-15.6%	8.5%	-32.7%	-62.2%	-40.0%	-9.6%
RingCentral	25%	2.2x	-17.3%	-5.1%	-23.2%	-91.3%	-74.7%	-86.0%
Atlassian	31%	11.8x	0.0%	30.0%	-33.6%	-29.7%	-46.2%	13.4%
Ceridian	30%	8.0x	0.3%	12.4%	22.3%	-31.6%	0.0%	3.1%
Rapid7	28%	4.4x	20.1%	70.3%	-17.7%	-47.5%	-54.3%	2.2%
ServiceNow	23%	9.7x	-5.8%	7.5%	-0.6%	-21.5%	-25.5%	32.5%
Docebo	46%	6.2x	-2.2%	17.7%	21.5%	-42.0%	-28.0%	188.6%
Average	28%	6.9x	-3%	21%	-14%	-47%	-40%	-7%
Median	29%	6.7x	-3%	10%	-20%	-40%	-43%	3%

	LTM Rev Growth	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Wix.com	10%	3.5x	2.6%	7.7%	43.0%	-63.8%	-1.1%	-32.5%
LivePerson	15%	2.2x	-20.3%	-5.1%	-12.8%	-83.7%	-50.1%	-61.8%
Veeva	18%	11.5x	-3.4%	-11.3%	-16.9%	-39.2%	-27.7%	16.7%
Paylocity	37%	9.3x	-6.8%	-7.8%	-20.1%	-6.5%	-9.3%	48.7%
Q2 Holdings	16%	3.4x	-1.6%	27.6%	-18.7%	-74.5%	-50.4%	-57.2%
Descartes	17%	12.5x	2.0%	10.3%	4.7%	26.0%	3.4%	78.3%
BlackLine	23%	7.5x	-4.7%	9.3%	0.6%	-48.7%	-9.2%	9.3%
Splunk	31%	5.1x	7.6%	34.0%	13.9%	-39.7%	-13.2%	-30.4%
Workday	21%	6.1x	4.4%	27.7%	12.7%	-22.6%	-19.0%	7.1%
Average	21%	6.8x	-2%	10%	1%	-39%	-20%	-2%
Median	18%	6.1x	-2%	9%	1%	-40%	-13%	7%

	LTM Rev Growth	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
New Relic	18%	5.0x	18.9%	38.6%	20.2%	11.6%	10.2%	29.7%
Qualys	18%	7.9x	3.5%	-4.1%	-22.2%	-3.1%	-5.7%	47.4%
Zuora	14%	2.2x	12.9%	12.9%	10.3%	-39.2%	-44.2%	-36.0%
Dropbox	8%	4.1x	-12.8%	-8.1%	-4.6%	-8.1%	-10.1%	4.3%
Yext	5%	2.1x	9.1%	35.4%	64.9%	-53.3%	-1.1%	-51.6%
Vmware	4%	4.5x	-11.5%	-6.3%	-5.1%	-21.5%	-6.1%	-8.6%
Akamai	4%	3.7x	-17.0%	-20.7%	-19.6%	-30.9%	-32.9%	-16.1%
Kinaxis	44%	8.0x	6.3%	7.1%	4.7%	-12.1%	9.1%	40.5%
Teradata	-6%	2.4x	17.3%	24.2%	23.9%	81.4%	-18.5%	104.4%
Average	12.2%	4.4x	3%	9%	8%	-8%	-11%	13%
Median	7.7%	4.1x	6%	7%	5%	-12%	-6%	4%

Source: FactSet and CIBC World Markets Inc.

Exhibit 19: Mature Software Stocks Grouped By LTM Revenue Growth – Price Returns, Three-year History

	LTM Revenue Growth	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Tyler Technologies	16%	30.2x	-1.9%	-1.7%	-13.5%	-26.4%	-25.0%	2.5%
Intuit Inc.	29%	22.0x	-3.7%	5.6%	-5.7%	7.2%	-14.2%	53.2%
Alphabet Inc.	9%	10.2x	-10.3%	-6.2%	-17.3%	3.1%	-33.1%	34.8%
Meta Platforms Inc. Class A	-1%	8.4x	15.3%	60.8%	7.4%	-36.0%	-17.1%	-9.1%
Salesforce.com	21%	17.4x	-0.6%	6.5%	4.8%	-26.5%	-22.3%	-4.0%
Progress Software	13%	11.6x	8.7%	9.5%	19.3%	27.1%	30.3%	54.0%
SPS Commerce	17%	34.8x	10.1%	13.3%	23.4%	38.7%	16.0%	186.4%
Constellation Software	29%	19.1x	1.4%	13.7%	20.8%	44.5%	11.8%	87.6%
Microsoft	10%	18.4x	0.5%	3.2%	-4.6%	12.1%	-16.5%	54.0%
Pegasystems	9%	23.2x	20.7%	28.7%	26.7%	-65.2%	-46.8%	-48.8%
Average	15%	19.5x	4%	13%	6%	-2%	-12%	41%
Median	15%	18.8x	1%	8%	6%	5%	-17%	44%

	LTM Revenue Growth	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Autodesk	15%	21.3x	-5.8%	1.7%	-1.5%	-34.9%	-9.8%	4.1%
Manhattan Associates	16%	40.5x	12.6%	18.6%	1.8%	36.7%	7.5%	113.4%
Altus Group	19%	21.7x	8.9%	18.4%	18.9%	24.1%	24.2%	35.9%
PTC Inc.	6%	18.9x	-7.2%	2.2%	9.1%	4.8%	12.6%	65.9%
Alteryx	60%	>100x	16.6%	50.3%	4.8%	-46.4%	4.8%	-53.2%
ANSYS	8%	26.5x	13.9%	25.6%	22.3%	-16.5%	-6.3%	25.4%
Cadence Design	19%	28.8x	4.3%	17.0%	11.0%	41.4%	27.4%	191.7%
Jack Henry & Associates	7%	18.9x	-9.0%	-13.0%	-14.5%	1.4%	-7.1%	8.2%
Average	19%	25.2x	4%	15%	6%	1%	7%	49%
Median	15%	21.7x	7%	18%	7%	3%	6%	31%

	LTM Revenue Growth	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Automatic Data Processing	10%	19.0x	-0.4%	-14.9%	-10.1%	24.8%	7.5%	42.1%
SS&C Technologies	5%	10.3x	-1.6%	13.6%	5.3%	-19.3%	-21.7%	5.8%
QuinStreet	-2%	31.2x	11.6%	21.3%	41.3%	-20.8%	50.8%	31.8%
eBay	-5%	8.5x	-6.3%	3.5%	4.0%	-8.7%	-15.9%	32.5%
CommVault Systems	4%	14.8x	-6.8%	-9.5%	8.5%	6.3%	-6.4%	41.2%
Software AG	15%	9.0x	-28.5%	-24.8%	-30.7%	-43.8%	-44.7%	-36.4%
Blackbaud	14%	11.5x	-9.9%	-4.2%	6.5%	-3.2%	-10.9%	-17.9%
Average	6%	14.9x	-6%	-2%	4%	-9%	-6%	14%
Median	5%	11.5x	-6%	-4%	5%	-9%	-11%	32%

	LTM Revenue Growth	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Verint Systems	4%	13.0x	-1.3%	-2.2%	-22.9%	9.3%	-25.6%	33.7%
Oracle	11%	13.2x	-1.8%	7.4%	17.9%	35.1%	15.0%	76.7%
Guidewire Software	14%	5996.0x	-4.1%	21.8%	-2.1%	-45.5%	-20.4%	-35.9%
SAP SE	11%	14.6x	2.6%	2.5%	26.5%	0.2%	6.1%	-3.7%
Open Text	3%	8.3x	1.2%	16.1%	9.2%	-24.4%	-21.0%	-18.0%
Enghouse	-8%	15.1x	9.4%	42.8%	34.1%	-30.3%	3.9%	-15.5%
Average	6%	1010.0x	1%	15%	10%	-9%	-7%	6%
Median	7%	13.9x	0%	12%	14%	-12%	-8%	-10%

Source: FactSet and CIBC World Markets Inc.

Exhibit 20: SaaS Stocks Grouped By Market Cap – Price Returns, Three-year History

	Market Cap	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
ServiceNow	87,731	9.7x	-5.8%	7.5%	-0.6%	-21.5%	-25.5%	32.5%
Vmware	46,852	4.5x	-11.5%	-6.3%	-5.1%	-21.5%	-6.1%	-8.6%
CrowdStrike	26,344	10.3x	15.7%	-13.5%	-33.9%	-43.0%	-38.2%	102.4%
Shopify	49,252	7.3x	-17.9%	8.2%	30.0%	-63.7%	-40.7%	-11.2%
Workday	37,465	6.1x	4.4%	27.7%	12.7%	-22.6%	-19.0%	7.1%
Veeva	23,345	11.5x	-3.4%	-11.3%	-16.9%	-39.2%	-27.7%	16.7%
■ #N/A	18,323	3.9x	0.6%	4.2%	-7.2%	-77.9%	-43.7%	-29.0%
Atlassian	54,438	11.8x	0.0%	30.0%	-33.6%	-29.7%	-46.2%	13.4%
Zscaler	18,913	11.8x	2.8%	-4.1%	-17.6%	-34.3%	-45.2%	152.3%
MongoDB	14,517	11.1x	-6.5%	46.0%	-35.1%	-41.6%	-45.2%	37.4%
Akamai	11,416	3.7x	-17.0%	-20.7%	-19.6%	-30.9%	-32.9%	-16.1%
Average	35,327	8.3x	-3%	6%	-12%	-39%	-34%	27%
Median	26,344	9.7x	-3%	4%	-17%	-34%	-38%	13%

	Market Cap	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Twilio	11,730	2.2x	11.3%	43.7%	-3.4%	-80.1%	-61.6%	-40.3%
HubSpot	19,108	8.7x	7.8%	34.0%	14.8%	-2.4%	-26.3%	115.6%
Splunk	16,779	5.1x	7.6%	34.0%	13.9%	-39.7%	-13.2%	-30.4%
■ #N/A	12,336	4.8x	3.5%	34.0%	5.4%	-72.4%	-48.2%	-28.9%
Paylocity	10,742	9.3x	-6.8%	-7.8%	-20.1%	-6.5%	-9.3%	48.7%
Ceridian	11,202	8.0x	0.3%	12.4%	22.3%	-31.6%	0.0%	3.1%
Five9	4,653	5.3x	-15.6%	8.5%	-32.7%	-62.2%	-40.0%	-9.6%
Average	12,364	6.2x	1%	23%	0%	-42%	-28%	8%
Median	11,730	5.3x	4%	34%	5%	-40%	-26%	-10%

	Market Cap	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Dropbox	5,720	4.1x	-12.8%	-8.1%	-4.6%	-8.1%	-10.1%	4.3%
Descartes	6,270	12.5x	2.0%	10.3%	4.7%	26.0%	3.4%	78.3%
RingCentral	2,839	2.2x	-17.3%	-5.1%	-23.2%	-91.3%	-74.7%	-86.0%
Qualys	4,488	7.9x	3.5%	-4.1%	-22.2%	-3.1%	-5.7%	47.4%
Rapid7	2,802	4.4x	20.1%	70.3%	-17.7%	-47.5%	-54.3%	2.2%
Wix.com	5,322	3.5x	2.6%	7.7%	43.0%	-63.8%	-1.1%	-32.5%
BlackLine	4,086	7.5x	-4.7%	9.3%	0.6%	-48.7%	-9.2%	9.3%
Average	4,504	6.0x	-1%	11%	-3%	-34%	-22%	3%
Median	4,488	4.4x	2%	8%	-5%	-48%	-9%	4%

	Market Cap	EV/NTM Sales	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
New Relic	5,026	5.0x	18.9%	38.6%	20.2%	11.6%	10.2%	29.7%
Lightspeed	2,304	2.0x	-14.6%	2.9%	-17.0%	-76.8%	-37.4%	-37.2%
Kinaxis	3,245	8.0x	6.3%	7.1%	4.7%	-12.1%	9.1%	40.5%
Q2 Holdings	1,864	3.4x	-1.6%	27.6%	-18.7%	-74.5%	-50.4%	-57.2%
Zuora	1,063	2.2x	12.9%	12.9%	10.3%	-39.2%	-44.2%	-36.0%
LivePerson	762	2.2x	-20.3%	-5.1%	-12.8%	-83.7%	-50.1%	-61.8%
Docebo	1,159	6.2x	-2.2%	17.7%	21.5%	-42.0%	-28.0%	188.6%
Yext	896	2.1x	9.1%	35.4%	64.9%	-53.3%	-1.1%	-51.6%
Average	2,040	3.9x	1%	17%	9%	-46%	-24%	2%
Median	1,512	2.8x	2%	15%	7%	-48%	-33%	-37%

*In US\$ unless otherwise noted

Source: FactSet and CIBC World Markets Inc.

Exhibit 21: Mature Software Stocks Grouped By Market Cap – Price Returns, Three-year History

	Market Cap	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Microsoft	1,856,634	18.4x	0.5%	3.2%	-4.6%	12.1%	-16.5%	54.0%
Alphabet Inc.	1,075,308	10.2x	-10.3%	-6.2%	-17.3%	3.1%	-33.1%	34.8%
Meta Platforms Inc. Class A	389,375	8.4x	15.3%	60.8%	7.4%	-36.0%	-17.1%	-9.1%
Oracle	235,653	13.2x	-1.8%	7.4%	17.9%	35.1%	15.0%	76.7%
Salesforce.com	163,610	17.4x	-0.6%	6.5%	4.8%	-26.5%	-22.3%	-4.0%
SAP SE	140,028	14.6x	2.6%	2.5%	26.5%	0.2%	6.1%	-3.7%
Intuit Inc.	114,387	22.0x	-3.7%	5.6%	-5.7%	7.2%	-14.2%	53.2%
Automatic Data Processing	91,083	19.0x	-0.4%	-14.9%	-10.1%	24.8%	7.5%	42.1%
Cadence Design	52,661	28.8x	4.3%	17.0%	11.0%	41.4%	27.4%	191.7%
Autodesk	42,871	21.3x	-5.8%	1.7%	-1.5%	-34.9%	-9.8%	4.1%
Average	416,161	17.3x	0%	8%	3%	3%	-6%	44%
Median	151,819	17.9x	0%	4%	2%	5%	-12%	38%

	Market Cap	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Constellation Software	36,519	19.1x	1.4%	13.7%	20.8%	44.5%	11.8%	87.6%
eBay	24,908	8.5x	-6.3%	3.5%	4.0%	-8.7%	-15.9%	32.5%
ANSYS	26,448	26.5x	13.9%	25.6%	22.3%	-16.5%	-6.3%	25.4%
SS&C Technologies	14,787	10.3x	-1.6%	13.6%	5.3%	-19.3%	-21.7%	5.8%
Tyler Technologies	13,434	30.2x	-1.9%	-1.7%	-13.5%	-26.4%	-25.0%	2.5%
Jack Henry & Associates	11,988	18.9x	-9.0%	-13.0%	-14.5%	1.4%	-7.1%	8.2%
PTC Inc.	14,822	18.9x	-7.2%	2.2%	9.1%	4.8%	12.6%	65.9%
Open Text	9,331	8.3x	1.2%	16.1%	9.2%	-24.4%	-21.0%	-18.0%
Average	69,372	18.9x	-2%	6%	4%	-5%	-8%	31%
Median	24,908	18.9x	-2%	4%	3%	-4%	-8%	29%

	Market Cap	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
Manhattan Associates	8,984	40.5x	12.6%	18.6%	1.8%	36.7%	7.5%	113.4%
Guidewire Software	5,749	5996.0x	-4.1%	21.8%	-2.1%	-45.5%	-20.4%	-35.9%
Pegasystems	3,825	23.2x	20.7%	28.7%	26.7%	-65.2%	-46.8%	-48.8%
SPS Commerce	5,470	34.8x	10.1%	13.3%	23.4%	38.7%	16.0%	186.4%
Alteryx	4,026	66.4x	16.6%	50.3%	4.8%	-46.4%	4.8%	-53.2%
Verint Systems	2,462	13.0x	-1.3%	-2.2%	-22.9%	9.3%	-25.6%	33.7%
Blackbaud	2,957	11.5x	-9.9%	-4.2%	6.5%	-3.2%	-10.9%	-17.9%
Average	4,782	883.6x	6%	18%	5%	-11%	-11%	25%
Median	4,026	34.8x	10%	19%	5%	-3%	-11%	-18%

	Market Cap	EV/NTM EBITDA	1 Month	3 Month	6 Month	YTD	1 Year	3 Year
CommVault Systems	2,623	14.8x	-6.8%	-9.5%	8.5%	6.3%	-6.4%	41.2%
Software AG	1,471	9.0x	-28.5%	-24.8%	-30.7%	-43.8%	-44.7%	-36.4%
Progress Software	2,490	11.6x	8.7%	9.5%	19.3%	27.1%	30.3%	54.0%
Altus Group	1,999	21.7x	8.9%	18.4%	18.9%	24.1%	24.2%	35.9%
Enghouse	1,745	15.1x	9.4%	42.8%	34.1%	-30.3%	3.9%	-15.5%
QuinStreet	913	31.2x	11.6%	21.3%	41.3%	-20.8%	50.8%	31.8%
Average	1,874	17.2x	1%	10%	15%	-6%	10%	18%
Median	1,872	14.9x	9%	14%	19%	-7%	14%	34%

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Source: FactSet and CIBC World Markets Inc.

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