

EQUITY RESEARCH

November 24, 2022

Industry Update

Calling For Cuts – Bits & Bytes Weekly

Activist Investors Latest Target: Alphabet

Our Conclusion

A wave of layoffs has been hitting Silicon Valley in recent weeks, with Meta and Amazon the latest of the big tech names to join the trend. So far, Alphabet has managed to avoid cutting headcount, but a recent letter by activist investor TCI might be the catalyst for change, as TCI called on Alphabet to emulate headcount cuts introduced by its competitors and to normalize workforce salaries to the levels of its peers. In its letter, TCI also referenced conversations with former Google executives who suggest that the company could be operated much more effectively with significantly fewer employees.

Key Points

In late October, Altimeter Capital's Brad Gerstner wrote an open letter to Meta management, calling for a headcount reduction by as much as 20%. Gerstner wrote in the letter: "In short, Meta needs to get fit and focused." While Meta did not explicitly respond to the letter, only two weeks later the company announced its biggest layoff in history, cutting 11% of its workforce. A war for talent over the last decade amongst the ranks of big tech has resulted in high salaries and excessive hoarding of talent. It has been long speculated that one of the reasons for talent hoarding through high-paying salaries is to deter talented engineers from starting their own ventures, also known as the blockers strategy. Today we are seeing the downside of that strategy with much of that talent now back on the market as cost control is back in focus.

Last week, Christopher Hohn from London-based TCI wrote a similar letter to Alphabet, urging it to reduce its excessive headcount while also calling out that staff at Google and YouTube are significantly overpaid. The letter pointed out that last year's median compensation for an Alphabet employee was \$296K according to filings with the SEC; 67% higher than the Microsoft median and 153% higher than the 20 largest technology companies in the U.S. according to data by S&P Global. Hohn's letter also calls on Alphabet to scale back at least half of the annual losses incurred by its "Other Bets" business segment which takes on high-risk, speculative projects and has made \$3B in revenues but generated \$20B in operating losses over the last five years.

Well paid, excess headcount is likely reducing returns on shareholder invested capital, with the marginal employee contributing minimally to top-line growth and innovation. Time will tell just how lean big tech companies can get without impacting the pace of innovation, but former Google executives reportedly seem to believe that these companies can operate just as effectively with significantly fewer employees.

All figures in Canadian dollars unless otherwise stated.

For required regulatory disclosures please refer to "Important Disclosures" beginning on page 10.

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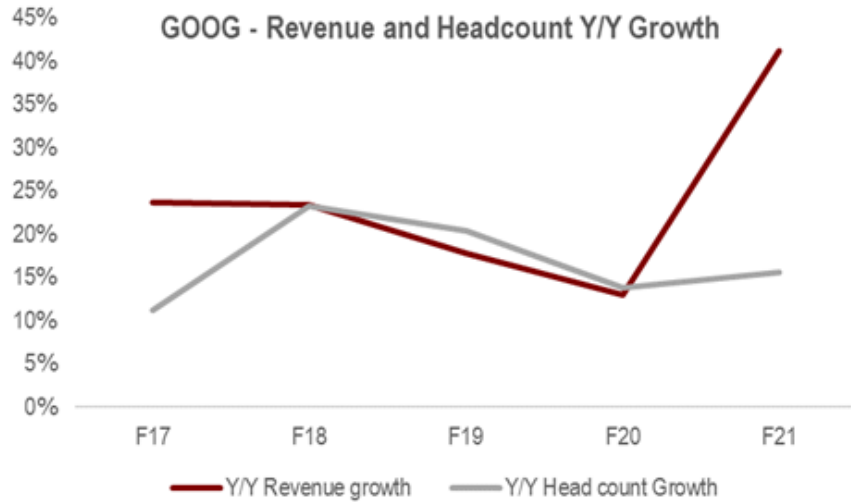
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Sector:
Information Technology

Headcount Growth Over The Years

Alphabet (GOOG) has seen significant growth in headcount in recent years, going from 72K employees in F16 to 156.6K in F21, a total increase of 117%. While that may seem like a significant step up in headcount, it is worth noting that revenue has grown 187% over the same period. Given Alphabet's scale, concerned shareholders are likely taking the view that headcount, and with it payroll expenses, should not be increasing at even close to the pace of revenue growth. Further, recent quarterly results at GOOG have been negatively impacted by a slowdown in advertising spending, and cutting headcount is a tried and true strategy to protect or improve operating margins.

Exhibit 1: Alphabet - Revenue And Headcount Growth, F17-F21



Source: Company reports and CIBC World Markets Inc.

News Impacting Our Coverage

Converge Announces Strategic Review To Unlock Shareholder Value

Converge announced the creation of a special committee to evaluate strategic alternatives in response to expressions of interest that it has received. We see private equity as the most likely buyer, given its ability to fund Converge's M&A strategy at an attractive cost of capital. However, we see valuation as a potential sticking point. A valuation in line with hardware VAR peers would lead to a value of ~\$7/share. However, this implies the completion of the integration of the +\$1B in gross revenue acquired YTD (done at an average of multiple of 5.2x) and comfort with Converge's ability to navigate the uncertain demand environment. We retain our Neutral rating and \$7.00 price target as we await more details on the strategic process. [Link To Note](#)

A Deeper Look At Constellation's Altera

We believe that the acquisition of Allscripts Hospitals and Large Physician Practice (rebranded Altera) is on strategy. While we see the business as mature, it adds significant scale to Constellation's U.S. Healthcare business, with Altera being the third-largest electronic medical records provider in the U.S. We see opportunities for Constellation to use its traditional playbook to stabilize the maintenance base of the business while optimizing operating expenses to improve margins and free cash flow. We expect Constellation to disclose Altera's results separately for the next few quarters and will be watching the margin and FCF improvement closely. We reiterate our Outperformer rating and \$2,300 price target. [Link To Note](#)

Exhibit 2: CIBC Software/Services – Coverage Performance, 11/24/2021 - 11/24/2022

Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,117.85	4.7	10.3	2.7	9.0	(4.8)	(9.8)	2385.80	1783.98
Descartes Systems	69.23	(5.4)	4.4	(2.1)	13.1	(17.8)	(16.3)	84.34	56.19
Enghouse Systems Limited	29.90	(0.6)	2.6	(9.3)	(8.5)	(46.0)	(38.3)	57.03	23.96
Open Text Corp	29.67	0.3	6.2	(20.5)	(24.2)	(40.5)	(37.5)	50.16	24.91
Kinaxis	150.79	(3.8)	6.6	(5.8)	14.5	(24.6)	(15.0)	206.10	119.48
Docebo, Inc.	41.80	(1.0)	7.7	2.8	(0.5)	(54.6)	(50.7)	95.50	31.66
Magnet Forensics	34.72	1.5	35.0	36.4	104.0	(0.3)	5.6	35.80	14.89
Q4 Inc.	2.97	(0.7)	(11.1)	(33.4)	(33.3)	NA	(65.1)	10.40	2.80
Average		(0.6)	7.7	(3.7)	9.3	(26.9)	(28.4)		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	113.61	0.5	4.8	7.0	6.7	5.0	1.6	114.68	95.45
Converge Technologies	4.76	14.4	(31.5)	(25.4)	(30.2)	(57.8)	(56.2)	12.04	3.60
Softchoice Corporation	14.77	(5.2)	(21.4)	(26.8)	(26.8)	(42.6)	(30.8)	28.66	14.25
Telus International	27.17	1.4	(21.3)	(31.0)	(11.3)	(37.9)	(35.0)	45.54	25.21
Average		2.8	(17.4)	(19.0)	(15.4)	(33.3)	(30.1)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	20,350.94	2.0	7.2	1.3	(0.0)	(5.9)	(4.4)
S&P 500 Index	4,027.26	1.7	7.3	(2.5)	1.3	(14.1)	(15.5)
S&P/TSX Software Index	137.82	1.7	9.4	1.1	5.1	(39.5)	(35.1)
S&P500 Software Index	4,242.18	1.2	3.3	(9.5)	(3.3)	(29.2)	(27.5)

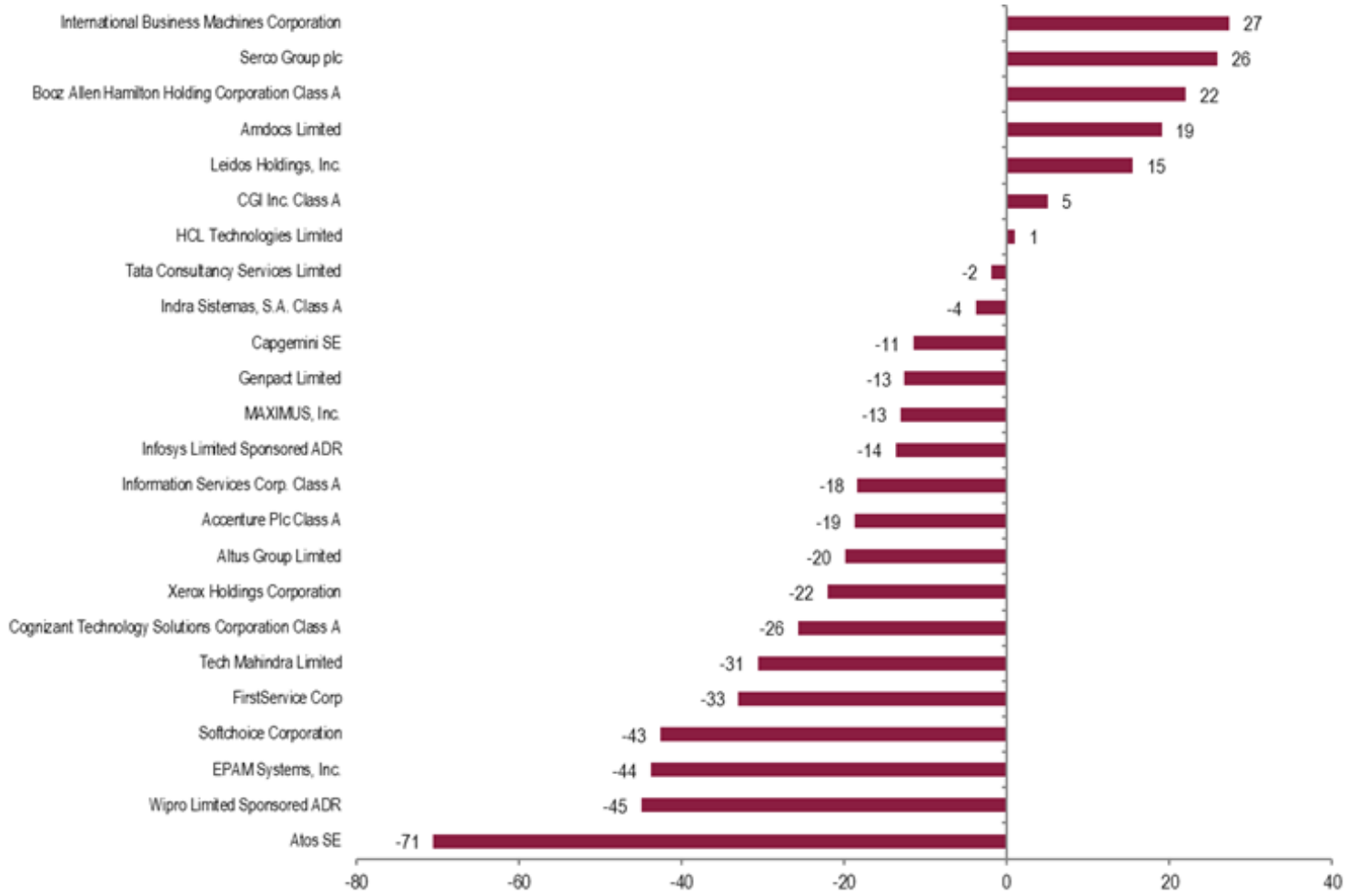
Source: FactSet and CIBC World Markets Inc.

Exhibit 3: Software Stocks – Return Performance (%), 11/24/2021 - 11/24/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 4: Business Services Stocks – Return Performance (%), 11/24/2021 - 11/24/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 5: Software Stocks – Comp Table, 2021 - 2023E

	Enterprise Value	EV/S			EV/EBITDA			P/E		
		C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E
Enterprise Application Software										
Constellation Software Inc.*	34,904	6.8x	5.3x	4.7x	23.1x	21.3x	18.4x	>50	28.7x	27.1x
BlackBerry Limited*	2,673	3.0x	3.9x	2.7x	>50	NEG	NEG	NEG	NEG	NEG
Sage Group plc	9,047	4.9x	4.5x	4.1x	21.9x	19.9x	17.5x	31.2x	30.6x	26.1x
Tyler Technologies, Inc.	14,894	9.4x	8.0x	7.4x	42.4x	31.3x	29.8x	>50	43.9x	42.9x
Roper Technologies, Inc.	53,789	9.3x	10.0x	9.1x	24.3x	24.4x	22.2x	42.1x	30.8x	27.2x
Enghouse Systems Limited	1,443	3.1x	3.4x	3.48x	8.9x	10.7x	10.5x	17.9x	22.7x	22.5x
Oracle Corporation	280,179	6.9x	6.0x	5.5x	15.0x	12.0x	11.0x	18.2x	16.8x	15.6x
SAP SE	132,853	4.8x	4.3x	4.0x	18.5x	15.5x	13.8x	23.6x	23.4x	19.4x
Enterprise Application Software Average		6.0x	5.7x	5.1x	22.0x	19.3x	17.6x	26.6x	28.1x	25.8x
Extended ERP										
Adobe Incorporated	154,979	9.8x	8.7x	7.9x	23.2x	17.8x	16.3x	33.5x	24.4x	21.6x
Open Text Corporation	10,788	3.1x	3.0x	3.0x	8.4x	8.9x	7.9x	9.4x	9.8x	8.7x
Manhattan Associates, Inc.	7,488	11.3x	10.0x	9.2x	>50	38.0x	34.7x	>50	>50	47.5x
Pegasystems Inc.	3,404	2.8x	2.7x	2.4x	NEG	>50	42.7x	NEG	>50	>50
Software AG	1,612	1.9x	1.7x	1.6x	10.4x	8.0x	7.1x	22.8x	17.1x	14.3x
Fiserv, Inc.	85,963	5.3x	5.1x	4.8x	15.5x	11.8x	11.0x	>50	15.7x	14.0x
Extended ERP Average		5.7x	5.2x	4.8x	14.4x	16.9x	20.0x	21.9x	16.7x	21.2x
Software As A Service										
Descartes Systems Group Inc.	5,690	13.4x	11.6x	10.4x	30.7x	26.5x	23.4x	>50	>50	>50
Kinaxis, Inc.*	2,965	11.8x	8.0x	7.2x	>50	40.1x	39.4x	>50	>50	>50
Docebo, Inc.*	817	7.8x	5.7x	4.3x	NEG	NEG	>50	NEG	>50	>50
Lightspeed Commerce Inc*	1,518	3.2x	2.2x	1.7x	NEG	NEG	NEG	NEG	NEG	NEG
Veeva Systems Inc Class A	26,881	18.3x	12.7x	11.1x	>50	32.0x	27.9x	>50	45.7x	41.3x
Shopify, Inc. Class A	36,070	7.8x	6.5x	5.4x	>50	NEG	>50	16.1x	NEG	>50
Q4 Inc*	52	0.9x	0.9x	0.9x	NEG	NEG	NEG	NEG	NEG	NEG
Magnet Forensics, Inc.*	944	13.4x	9.7x	7.3x	>50	>50	32.2x	>50	>50	>50
Ceridian HCM Holding, Inc.	11,080	10.8x	9.0x	7.7x	>50	47.2x	37.6x	NEG	>50	>50
ServiceNow, Inc.	81,762	13.9x	11.3x	9.2x	>50	36.3x	29.5x	>50	>50	44.9x
Workday, Inc. Class A	36,683	8.5x	6.0x	5.0x	>50	23.5x	19.3x	NEG	43.5x	34.6x
Software As A Service Average		10.0x	7.6x	6.4x	30.7x	34.3x	29.9x	16.1x	44.6x	40.3x
Infrastructure Vendors										
Microsoft Corporation	1,819,221	10.8x	8.8x	8.0x	22.5x	18.1x	16.4x	30.7x	26.4x	23.9x
Infrastructure Vendors Average		10.8x	8.8x	8.0x	22.5x	18.1x	16.4x	30.7x	26.4x	23.9x
Software Average										
		7.8x	6.5x	5.7x	20.4x	23.3x	22.3x	24.5x	27.1x	27.0x

*Share Price Converted to USD

Source: FactSet and CIBC World Markets Inc.

Exhibit 6: Business Services Stocks – Comp Table, 2021 - 2023E

	Enterprise Value (\$mlns.)	EV/EBITDA			P/E			EV/S		
		C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E
Business & IT Services										
CGI Inc. Class A	30,126	12.2x	11.8x	11.2x	20.3x	18.5x	17.4x	2.5x	2.3x	2.2x
TELUS International (CDA), Inc.	6,183	11.4x	10.2x	9.0x	19.9x	17.0x	14.2x	2.8x	2.5x	2.2x
Accenture Plc Class A	191,231	19.9x	16.6x	15.7x	32.2x	26.9x	25.0x	3.8x	3.1x	2.9x
Booz Allen Hamilton	16,434	18.4x	16.6x	15.6x	24.3x	24.1x	22.1x	2.1x	1.8x	1.7x
CACI International Inc Class A	9,182	12.4x	13.7x	12.7x	16.7x	17.0x	16.1x	1.5x	1.4x	1.4x
DXC Technology Co.	10,308	5.1x	4.2x	4.2x	NEG	8.4x	6.8x	0.6x	0.7x	0.7x
Genpact Limited	9,232	14.3x	11.9x	10.7x	23.2x	16.2x	14.8x	2.3x	2.1x	2.0x
International Business Machines	182,072	13.5x	11.7x	11.7x	23.4x	16.3x	15.5x	3.2x	3.0x	3.0x
Atos SE	3,015	2.9x	3.1x	2.9x	NEG	>50	7.6x	0.3x	0.3x	0.3x
Capgemini SE	36,401	12.6x	10.3x	9.7x	27.1x	16.6x	15.5x	2.0x	1.7x	1.6x
Sopra Steria Group SA	4,308	8.2x	7.1x	6.6x	16.2x	10.9x	10.0x	0.9x	0.8x	0.8x
Converge Technology Solutions C	1,218	13.0x	9.0x	6.8x	>50	32.7x	25.9x	0.8x	0.5x	0.4x
Business & IT Services Average		11.9x	10.7x	10.0x	22.6x	17.2x	15.0x	2.0x	1.8x	1.7x
HR Outsourcing										
		EV/EBITDA			P/E			EV/S		
Ceridian HCM Holding, Inc.	11,080	>50	47.2x	37.6x	NEG	>50	>50	10.8x	9.0x	7.7x
Willis Towers Watson	26,888	12.0x	11.6x	10.8x	7.4x	18.0x	15.9x	3.0x	3.0x	2.9x
Aon Plc Class A	72,520	18.9x	18.2x	17.1x	>50	23.2x	21.0x	5.9x	5.8x	5.5x
Automatic Data Processing, Inc.	111,033	29.0x	24.1x	21.6x	43.3x	34.7x	30.7x	7.4x	6.5x	6.0x
Paychex, Inc.	44,019	26.6x	20.5x	19.1x	40.6x	30.7x	28.3x	10.9x	9.1x	8.6x
HR Outsourcing Average		21.6x	24.3x	21.2x	30.4x	26.6x	24.0x	7.6x	6.7x	6.1x
Information Services										
		EV/EBITDA			P/E			EV/S		
Broadridge Financial Solutions, Inc.	21,304	18.3x	16.3x	15.2x	31.9x	22.1x	20.5x	4.2x	3.6x	3.4x
Dye & Durham Ltd.	1,893	11.9x	11.9x	8.4x	>50	>50	22.2x	5.0x	3.3x	2.8x
Deluxe Corporation	2,269	6.2x	5.5x	5.6x	13.0x	4.6x	4.7x	1.1x	1.0x	1.0x
Information Services Corp	415	6.1x	6.4x	6.6x	11.2x	10.8x	11.4x	2.4x	2.2x	2.0x
Information Services Average		10.6x	10.0x	8.9x	18.7x	12.5x	14.7x	3.2x	2.5x	2.3x
Financial Services Technology										
		EV/EBITDA			P/E			EV/S		
Fidelity National Information Services	57,989	9.5x	9.2x	8.7x	>50	9.9x	9.7x	4.2x	4.0x	3.8x
Fiserv, Inc.	85,963	15.5x	11.8x	11.0x	>50	15.7x	14.0x	5.3x	5.1x	4.8x
Jack Henry & Associates, Inc.	14,041	20.2x	22.1x	20.1x	46.2x	38.5x	36.4x	8.0x	7.0x	6.5x
ACI Worldwide, Inc.	3,330	9.1x	9.0x	8.3x	19.2x	15.3x	16.1x	2.4x	2.4x	2.3x
Temenos AG	5,317	9.7x	14.6x	13.4x	25.1x	21.4x	19.5x	5.5x	5.5x	5.2x
Global Payments Inc.	37,595	10.3x	9.6x	9.0x	30.5x	10.7x	9.6x	4.4x	4.7x	4.4x
Financial Services Technology Average		12.4x	12.7x	11.7x	30.2x	18.6x	17.6x	5.0x	4.8x	4.5x
Diversified Real Estate Services										
		EV/EBITDA			P/E			EV/S		
Colliers International Group Inc.	4,926	9.0x	7.8x	7.2x	-10.4x	13.2x	12.9x	1.2x	1.1x	1.0x
Altus Group Limited	2,479	23.9x	22.6x	18.8x	27.2x	27.2x	29.8x	4.0x	4.0x	3.3x
CBRE Group, Inc. Class A	26,027	12.2x	9.0x	9.2x	14.2x	13.8x	14.2x	0.9x	0.8x	0.8x
Jones Lang LaSalle Incorporated	9,587	6.6x	7.3x	7.7x	8.8x	9.8x	10.0x	0.5x	0.5x	0.5x
Diversified Real Estate Services Average		12.9x	11.6x	10.7x	10.0x	16.0x	16.7x	1.6x	1.6x	1.4x
Software Focused IT Solutions/VARs										
		EV/EBITDA			P/E			EV/S*		
Softchoice Corporation* USD	735	30.1x	9.0x	7.9x	NEG	17.9x	13.6x	2.8x	2.3x	2.1x
Softcat Plc*	2,499	14.8x	15.0x	14.0x	19.9x	20.2x	19.6x	6.7x	6.3x	5.6x
Crayon Group Holding ASA*	10,755	>50	>50	>50	>50	>50	>50	>50	25.2x	21.6x
Bytes Technology Group Plc*	938	19.3x	14.3x	12.7x	38.3x	19.5x	18.4x	NA	NA	NA
SoftwareONE Holding Ltd.*	1,776	10.8x	6.9x	6.1x	17.1x	16.2x	14.2x	8.5x	1.7x	1.6x
Bytes Technology Group Plc* Average		18.7x	11.3x	10.2x	25.1x	18.5x	16.5x	6.0x	8.9x	7.7x
Business Services Average		14.0x	13.2x	11.9x	22.6x	18.2x	16.9x	3.8x	3.9x	3.6x

*Software Focused IT Solutions/VARs uses EV/GP metric.

Source: FactSet and CIBC World Markets Inc.

Exhibit 7: SaaS Stocks – Comp Table, 2021 - 2023E

	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		
								C21	C22E	C23E
Tier 1 SaaS (Rule of 40 > 60)										
Zoom Video Communications	18%	31%	5%	27%	49%	31%	17,339	6.5x	4.0x	4.0x
CrowdStrike Holdings, Inc.	61%	30%	44%	29%	91%	73%	31,659	36.2x	14.6x	14.6x
Shopify, Inc.	25%	-4%	21%	-9%	21%	12%	33,118	7.2x	6.0x	6.0x
Zscaler, Inc.	62%	24%	38%	22%	86%	60%	19,353	28.8x	15.3x	15.3x
Lightspeed POS, Inc.	101%	-19%	33%	-5%	82%	28%	1,406	6.3x	2.0x	2.0x
DocuSign, Inc.	30%	20%	11%	15%	51%	27%	9,385	6.5x	3.8x	3.8x
Veeva Systems Inc	20%	38%	15%	37%	58%	52%	26,881	18.3x	12.7x	12.7x
Atlassian Corp. Plc	34%	27%	29%	22%	61%	50%	31,668	15.2x	10.1x	10.1x
Twilio, Inc.	51%	-6%	28%	-2%	45%	26%	4,842	1.7x	1.3x	1.3x
ServiceNow, Inc.	25%	27%	21%	29%	53%	50%	81,762	13.9x	11.3x	11.3x
HubSpot, Inc.	42%	16%	22%	12%	58%	34%	13,568	10.4x	8.0x	8.0x
Tier 1 SaaS (Rule of 40 > 60) Average								13.7x	8.1x	8.1x
	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		
								C21E	C22E	C23E
Tier 2 SaaS (Rule of 40 b/w 40-60)										
Docebo, Inc.	50%	-2%	35%	-4%	48%	31%	813	7.8x	5.7x	4.2x
Qualys, Inc.	17%	40%	18%	37%	56%	55%	4,395	10.6x	9.0x	9.0x
Descartes Systems	20%	37%	10%	37%	57%	47%	5,690	13.4x	11.6x	10.4x
Five9, Inc.	34%	-4%	23%	7%	30%	30%	4,630	7.6x	6.0x	6.0x
Dropbox, Inc.	11%	33%	6%	34%	44%	40%	8,790	4.1x	3.8x	3.8x
Wix.com Ltd.	16%	-1%	8%	3%	15%	11%	4,566	3.6x	3.3x	3.3x
Workday, Inc.	22%	21%	19%	19%	43%	38%	36,683	8.5x	6.0x	6.0x
VMware, Inc.	7%	24%	6%	29%	31%	35%	60,776	5.2x	4.6x	4.6x
Tier 2 SaaS (Rule of 40 b/w 40-60) Average								7.6x	6.2x	5.9x
	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		
								C21E	C22E	C23E
Tier 3 SaaS (Rule of 40 b/w 28-40)										
BlackLine, Inc.	22%	8%	21%	6%	30%	27%	3,709	8.7x	7.1x	7.1x
MongoDB, Inc.	54%	-2%	25%	2%	52%	27%	9,770	16.5x	8.3x	8.3x
LivePerson, Inc.	19%	-27%	5%	-4%	-8%	1%	880	1.9x	1.7x	1.7x
Rapid7 Inc.	33%	5%	23%	11%	38%	34%	2,352	4.4x	3.5x	3.5x
Paylocity Holding Corp.	34%	16%	28%	15%	50%	43%	11,908	18.7x	12.0x	12.0x
Q2 Holdings, Inc.	18%	0%	18%	3%	18%	21%	1,680	3.4x	3.0x	3.0x
Akamai Technologies, Inc.	7%	24%	2%	21%	31%	24%	16,234	4.7x	4.5x	4.5x
Tier 3 SaaS (Rule of 40 b/w 28-40) Average								8.3x	5.7x	5.7x
	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		
								C21E	C22E	C23E
Tier 4 SaaS (Rule of 40 <28)										
RingCentral, Inc.	33%	8%	21%	9%	40%	30%	4,631	2.9x	2.3x	2.3x
Teradata Corporation	-3%	19%	-3%	23%	16%	20%	3,361	1.8x	1.9x	1.9x
Zuora, Inc.	15%	4%	14%	0%	19%	14%	850	2.8x	2.2x	2.2x
New Relic, Inc.	20%	3%	17%	1%	23%	18%	3,377	5.1x	3.8x	3.8x
Kinaxis, Inc.	35%	7%	22%	9%	42%	31%	2,951	11.8x	8.0x	7.2x
Yext, Inc.	8%	3%	3%	-1%	11%	2%	547	1.5x	1.4x	1.4x
Splunk Inc.	26%	7%	21%	14%	33%	35%	14,438	6.5x	4.3x	4.3x
Tier 4 SaaS (Rule of 40 <28) Average								4.6x	3.4x	3.3x
SaaS Average								9.2x	6.1x	6.0x

Source: Company reports, FactSet and CIBC World Markets Inc.

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Neutral	NT	Stock is expected to perform in line with similar stocks in the coverage universe during the next 12-18 months.
Underperformer	UN	Stock is expected to underperform similar stocks in the coverage universe during the next 12-18 months.
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None	NA	Sector rating is not applicable.

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