

EQUITY RESEARCH

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Industry Update

IT Spending Slowing? Bits & Bytes Weekly

Early Reporters Results Raise Questions About Demand

Sector:
Information Technology

Our Conclusion

Recent earnings results from IT services firms have painted a mixed picture of the demand environment for IT spending. Infosys and TCS noted slowing decision making at clients and delayed or cancelled discretionary spending projects. Value added resellers (VARs) have been navigating supply chain pressures and now appear to be facing a more challenging demand environment. Large-cap VAR CDW pre-reported Q1 earnings that missed Street forecasts. CDW now expects 2023 U.S. IT market spending to decline at a high-single-digit rate versus its previous forecast of flat Y/Y growth. Uncertainty appears to be broad-based across geographies and verticals, with particular delays in banking and financial services in the wake of U.S. regional bank failures. However, IT spending commentary hasn't been all negative. IBM was more optimistic on the demand environment, particularly for software solutions and digitization projects focused on cost optimization. With a handful of our coverage (CTS, SFTC, GIB.a) potentially exposed to similar trends, we are paying close attention to IT spending activity and the impact on IT services equities.

Key Points

Outsourcing: Indian IT consultancies Infosys and TCS had Q1 results of differing quality as TCS met expectations while Infosys missed on all headline metrics. Both companies struck a very cautious tone on the demand environment, referring to weakness in Telecom, Retail, Technology and Financial Services. TCS specifically called out poor sentiment in the U.S. and Europe where growth decelerated while the U.K. remained solid. Both firms noted that they expect the slowdown to be short term in nature, and that deal flow remained strong despite some current cancellations and deferrals. Commentary around slowdowns in financial services and high tech could have some read-through to CGI and TIXT respectively, although we do not see the Indian outsourcers as directly comparable to our coverage.

Resellers: CDW significantly revised its U.S. IT spending from flat to down high-single digits, a revision that could have wide-reaching impacts across the IT Industry. If CDW is accurate in its prediction, many IT Services firms and suppliers may be set to significantly revise their outlook downwards. CDW's negative update is particularly relevant to SFTC and CTS given their similar business models and their SMB customer bases, which may be feeling macroeconomic pressure more acutely than larger customers.

Software/IP & Digitization: News isn't all bad for the IT Services group, as IBM reported a solid quarter with commentary that was much more constructive. Spending on software and cost-saving digitization projects remains strong despite some softness in the Consulting business. IBM's software business is ~40% of revenue relative to CGI's IP solutions at +20%.

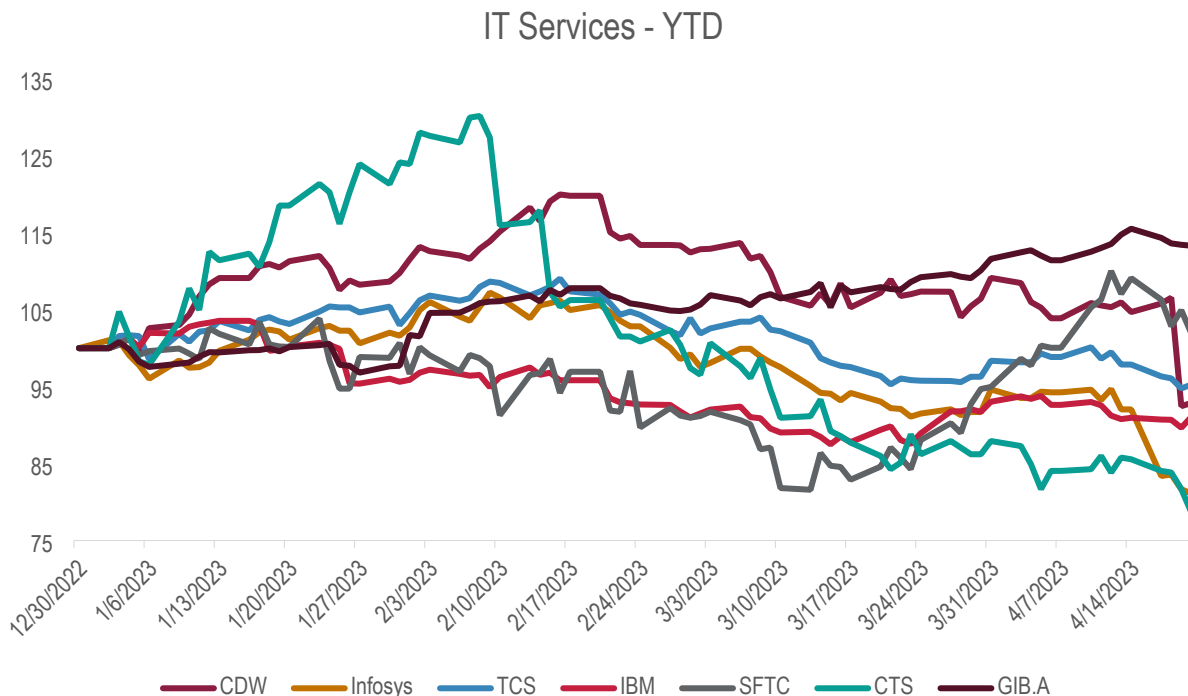
All figures in Canadian dollars unless otherwise stated.

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

How IT Services Names Have Done In 2023

To illustrate the impact of recent commentary on IT services share prices, we have charted the indexed YTD return for the companies mentioned in the report. The sharp declines in Infosys and CDW shares following their earning releases and negative commentary on demand clearly show the downside risks present in the IT services names.

Exhibit 1: IT Services Share Prices – Indexed To 100, 2023 YTD



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

CDW's updated forecast expects IT spending to decline at a high-single-digit rate in 2023, well below Gartner's expectations that spending will grow 2.4% in the year. Gartner's expectations were published in January 2023, and CDW's expectations at the same time called for flat Y/Y spending. The delta between CDW's expectations during its February earnings release and April commentary does suggest a notable deceleration that could see Gartner also revise forecasts downwards.

Exhibit 2: Gartner's IT Spending Forecast, 2022 – 2023E

	2022 Spending (\$US MM)	2022 Growth	2023 Spending (\$US MM)	2023 Growth
Data Centre Systems	212,376	12.0%	213,853	0.7%
Software	783,462	7.1%	856,029	9.3%
Devices	722,181	-10.6%	685,633	-5.1%
IT Services	1,244,746	3.0%	1,312,588	5.5%
Communications Services	1,422,506	-2.4%	1,423,367	0.1%
Overall IT	4,385,270	-0.2%	4,491,471	2.4%

Source: Gartner and CIBC World Markets Inc.

News Impacting Our Coverage

Research Highlight: [Q1 Software & Services Preview](#)

Despite concerns arising from the Silicon Valley Bank (SVB) collapse, the technology sector outperformed the overall market in Q1, with investors responding to stabilizing interest rates and normalizing inflation while discounting the risk of a broader contagion. Overall, the Street is forecasting a solid Q1, with average revenue for the names we cover expected to be up 13% Y/Y and average EBITDA expected to be up 11% Y/Y. We expect the focus to remain on the demand environment as rising rates continue to impact client spending. Post Q4 earnings revisions for the companies we cover were relatively modest, with consensus 2023E revenue down 1% and EBITDA down 3%, driven largely by revisions for acquirers as they integrate M&A. We remain watchful for commentary on lengthening sales cycles and spending slowdowns, especially in European regions.

Research Highlight: Thomson Reuters – [Staying Positive On A Quality Business](#)

TRI shares have had an excellent start to 2023, up 14% vs. TSX returns of 6% and the S&P 500 at 8%. We increased our price target from \$126 to \$140 as we increased our target multiple on the 'Big 3' segments to 22.5x, a 1.5x premium to the current peer average given expectation of sector outperformance. While our price target reflects only an 8% return to target, we continue to recommend TRI as an Outperformer. With the state of the macro environment remaining uncertain, we view TRI as a resilient, high-quality name that is well suited for an uncertain environment. We have confidence in 2023 earnings estimates given TRI's strong recurring revenue base, sticky product, and end markets that are likely to see growth even in the event of broader economic contraction.

Descartes Acquires Localz

Descartes announced it had acquired Localz, a platform that combines real-time vehicle location tracking and communications in a SaaS solution for the final-mile customer delivery experience. End customers can schedule services and deliveries through an online portal and track the progress of their order in real-time. The acquisition is a relatively small one for Descartes, with a total cost of \$6.2 million paid out of cash on hand.

Descartes eBookings For Ocean Ship Management Now A SAP-endorsed App

Descartes' eBookings for Ocean Ship Management solution was granted SAP-endorsed App status, making it available for online purchase at the SAP Store. The eBookings solution connects carriers across the globe and transforms shipment data to help manufacturers, retailers and distributors digitize supply chain operations.

Q4 Chief Operations Officer

Q4 Inc. announced that it had appointed Keith Reid as its new Chief Operation Officer, a role previously held by CFO Donna de Winter. Mr. Reid has experience at a number of technology companies, most recently serving as the Chief Customer Officer at VersaPay. Prior to VersaPay, Mr. Reid worked at Keap and Intuit.

Exhibit 3: CIBC Coverage – Price Returns, For The Period Ending April 20, 2023

Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,605.63	(0.8)	9.5	14.4	43.2	21.7	25.8	2674.98	1747.83
Descartes Systems	79.49	(1.7)	1.3	12.0	23.4	25.6	14.1	82.02	56.19
Enghouse Systems Limited	38.10	(2.7)	4.5	(4.2)	32.7	4.8	5.9	44.59	23.96
Open Text Corp	38.21	(1.5)	1.5	15.5	40.2	(10.1)	28.9	43.04	24.91
Kinaxis	178.96	(1.4)	0.1	19.2	24.4	25.0	17.8	187.01	119.48
Docebo, Inc.	50.78	(1.8)	(1.3)	6.7	32.5	(16.2)	13.5	62.52	31.66
Dye & Durham	15.85	(4.8)	(13.2)	(25.1)	(2.0)	(25.3)	(3.4)	24.68	11.62
Altus Group	55.57	1.7	(4.3)	2.0	15.7	9.6	2.8	61.60	41.27
Q4 Inc.	3.74	(2.6)	24.7	68.5	0.4	NA	16.5	5.04	1.88
Average		(1.7)	2.5	12.1	23.4	4.4	13.6		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	132.83	(0.8)	5.5	13.7	26.8	30.1	13.8	134.89	95.45
Converge Technologies	3.69	(7.4)	(7.6)	(33.0)	(43.8)	(59.1)	(19.7)	9.45	3.60
Information Services Corp	23.00	0.0	2.2	(0.2)	3.3	2.6	(4.8)	25.36	19.12
Softchoice Corporation	18.61	(4.8)	20.4	1.7	(5.9)	(27.0)	1.9	26.12	13.57
Telus International	27.42	(0.1)	(2.0)	(9.4)	(22.5)	(5.9)	2.6	40.55	24.11
Average		(3.3)	4.1	(6.8)	(11.3)	(15.5)	(0.4)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	20,673.63	0.5	5.9	0.8	11.3	(6.0)	6.6
S&P 500 Index	4,146.62	0.0	4.9	4.4	13.1	(7.0)	8.0
S&P/TSX Software Index	169.09	0.5	5.9	13.3	35.6	10.0	24.0
S&P500 Software Index	4,931.41	(0.1)	6.3	17.3	23.1	1.3	20.4

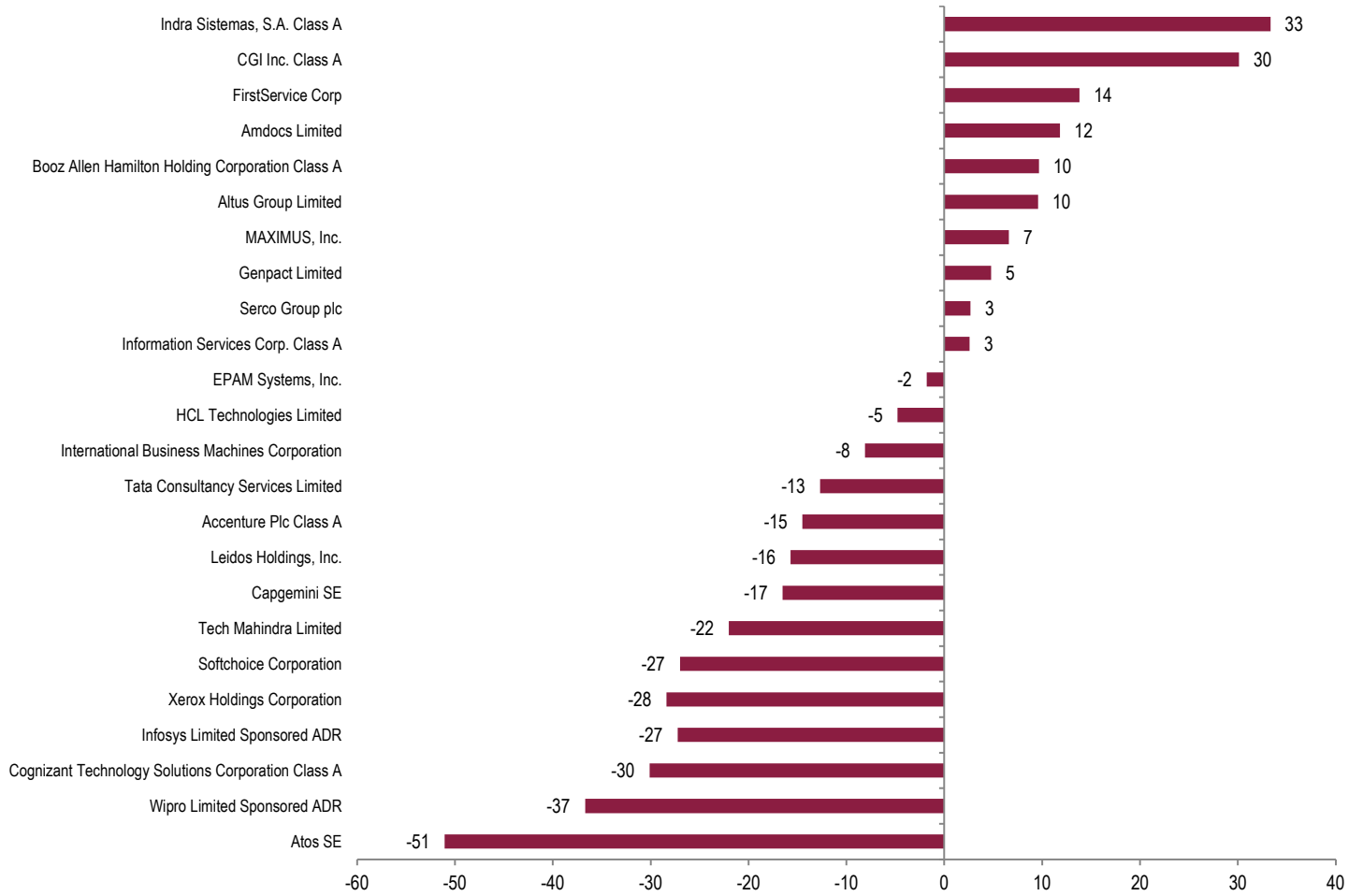
Source: FactSet and CIBC World Markets Inc.

Exhibit 4: Software Stocks – Return Performance (%), 4/20/2022–4/20/2023



Source: FactSet and CIBC World Markets Inc.

Exhibit 5: Business Services Stocks – Return Performance (%), 4/20/2022–4/20/2023



Source: FactSet and CIBC World Markets Inc.

Exhibit 6: Software Stocks – Comp Table, 2022–2024E

Enterprise Value (\$mlns.)	EV/S			EV/EBITDA			P/E			
	C22	C23E	C24E	C22	C23E	C24E	C22	C23E	C24E	
Enterprise Application Software										
Constellation Software Inc.*	42,459	6.4x	5.4x	4.8x	25.0x	21.1x	18.8x	34.0x	31.4x	27.4x
BlackBerry Limited*	2,472	3.7x	2.7x	2.4x	NEG	NEG	>50	NEG	NEG	NEG
Sage Group plc	8,911	4.5x	4.1x	3.8x	19.5x	17.4x	15.9x	30.0x	25.9x	23.2x
Tyler Technologies, Inc.	16,442	8.9x	8.4x	7.7x	34.6x	34.3x	30.4x	49.8x	49.2x	43.2x
Roper Technologies, Inc.	53,344	9.9x	8.9x	8.4x	24.4x	21.8x	20.4x	31.2x	27.5x	25.6x
Enghouse Systems Limited	1,873	4.4x	4.33x	4.26x	13.6x	13.9x	12.86x	19.2x	29.8x	26.42x
Oracle Corporation	314,349	6.7x	6.1x	5.6x	13.4x	12.0x	10.9x	19.1x	17.8x	15.8x
SAP SE	145,401	4.3x	4.6x	4.3x	18.4x	16.0x	14.0x	28.3x	21.8x	18.6x
Enterprise Application Software Average		6.1x	5.6x	5.2x	21.3x	19.5x	17.6x	30.2x	29.0x	25.8x
Extended ERP										
Adobe Incorporated	173,285	9.8x	8.9x	8.0x	19.9x	18.3x	16.5x	27.5x	24.3x	21.4x
Open Text Corporation	12,964	3.7x	2.4x	2.1x	10.4x	7.9x	5.5x	12.1x	14.9x	7.1x
Manhattan Associates, Inc.	9,645	12.6x	11.6x	10.4x	44.1x	43.8x	38.6x	>50	>50	>50
Pegasystems Inc.	4,175	3.2x	3.0x	2.7x	>50	23.3x	16.2x	>50	31.4x	21.8x
Software AG	1,678	1.8x	1.7x	1.6x	9.4x	9.5x	8.0x	20.4x	13.8x	11.4x
Fiserv, Inc.	94,751	5.6x	5.3x	4.9x	13.1x	12.1x	11.1x	18.0x	16.0x	14.0x
Extended ERP Average		6.1x	5.5x	4.9x	19.4x	19.1x	16.0x	19.5x	20.1x	15.2x
Software As A Service										
Descartes Systems Group Inc.	6,473	13.3x	11.8x	10.7x	30.1x	26.5x	23.5x	>50	>50	>50
Kinaxis, Inc.*	3,542	9.7x	8.2x	6.9x	44.6x	>50	43.5x	>50	>50	>50
Docebo, Inc.*	1,031	7.2x	5.6x	4.3x	>50	>50	32.9x	>50	>50	>50
Lightspeed Commerce Inc*	1,265	1.8x	1.5x	1.2x	NEG	NEG	37.1x	NEG	>50	>50
Veeva Systems Inc Class A	26,193	12.3x	11.2x	9.4x	31.0x	31.5x	25.5x	43.2x	42.4x	35.6x
Shopify, Inc. Class A	58,138	10.4x	8.7x	7.2x	>50	>50	>50	>50	>50	>50
Q4 Inc*	84	1.5x	1.5x	1.3x	NEG	NEG	NEG	NEG	NEG	NEG
Ceridian HCM Holding, Inc.	11,268	9.0x	7.6x	6.5x	45.0x	30.7x	24.7x	>50	>50	42.8x
ServiceNow, Inc.	93,454	12.9x	10.5x	8.7x	40.9x	34.0x	27.0x	>50	>50	41.4x
Workday, Inc. Class A	46,800	7.6x	6.6x	5.6x	29.8x	23.5x	19.6x	>50	38.5x	31.3x
Software As A Service Average		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	43.2x	40.4x	37.7x
Infrastructure Vendors										
Microsoft Corporation	2,119,096	10.4x	9.6x	8.6x	21.3x	19.7x	16.9x	31.1x	28.7x	24.8x
Infrastructure Vendors Average		10.4x	9.6x	8.6x	21.3x	19.7x	16.9x	31.1x	28.7x	24.8x
Software Average		#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	28.0x	27.6x	25.4x

*Share Price Converted to USD

Note: Bolded names are covered by CIBC World Markets Inc.

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

Exhibit 7: Business Services Stocks – Comp Table, 2022–2024E

	Enterprise Value (\$mlns.)	EV/EBITDA			P/E			EV/S		
		C22	C23E	C24E	C22	C23E	C24E	C22	C23E	C24E
Business & IT Services										
CGI Inc. Class A	34,215	13.8x	12.2x	11.8x	21.2x	19.0x	18.1x	2.6x	2.4x	2.4x
TELUS International (CDA), Inc.	6,402	10.5x	9.0x	7.8x	16.5x	16.4x	13.6x	2.6x	2.1x	1.9x
Accenture Plc Class A	178,799	15.6x	15.0x	13.7x	25.1x	23.3x	21.3x	2.9x	2.7x	2.5x
Booz Allen Hamilton	15,438	15.6x	14.6x	13.5x	22.3x	20.6x	18.5x	1.7x	1.6x	1.5x
CACI International Inc Class A	9,254	13.8x	12.8x	12.0x	17.2x	16.2x	14.7x	1.4x	1.4x	1.3x
DXC Technology Co.	9,113	3.8x	3.9x	4.0x	7.1x	6.4x	5.6x	0.6x	0.6x	0.6x
Genpact Limited	9,275	11.8x	10.8x	9.8x	16.3x	15.1x	13.5x	2.1x	2.0x	1.8x
International Business Machines	160,461	10.3x	10.7x	10.2x	13.9x	13.5x	12.7x	2.7x	2.6x	2.5x
Atos SE	2,996	3.0x	2.7x	2.5x	>50	5.2x	3.7x	0.3x	0.3x	0.3x
Capgemini SE	33,196	9.5x	9.1x	8.4x	13.9x	14.3x	12.9x	1.5x	1.4x	1.4x
Sopra Steria Group SA	5,193	8.8x	7.6x	7.0x	14.1x	11.5x	10.1x	1.0x	0.9x	0.9x
Converge Technology Solutions Corp	1,032	7.2x	6.2x	5.7x	34.8x	22.1x	24.4x	0.5x	0.4x	0.4x
Business & IT Services Average		10.6x	9.9x	9.2x	16.8x	14.7x	13.2x	1.8x	1.6x	1.6x
HR Outsourcing										
		EV/EBITDA			P/E			EV/S		
Ceridian HCM Holding, Inc.	11,268	45.0x	30.7x	24.7x	>50	>50	42.8x	9.0x	7.6x	6.5x
Willis Towers Watson	29,751	12.5x	12.2x	11.0x	17.9x	16.6x	14.0x	3.4x	3.2x	3.1x
Aon Plc Class A	78,966	19.8x	18.4x	17.2x	24.9x	22.8x	20.5x	6.3x	6.0x	5.7x
Automatic Data Processing, Inc.	91,591	19.9x	17.8x	16.2x	28.5x	25.3x	22.6x	5.3x	5.0x	4.6x
Paychex, Inc.	39,101	18.2x	16.9x	15.7x	26.9x	24.5x	22.8x	8.1x	7.6x	7.1x
HR Outsourcing Average		23.1x	19.2x	17.0x	24.6x	22.3x	24.5x	6.4x	5.9x	5.4x
Information Services										
		EV/EBITDA			P/E			EV/S		
Broadridge Financial Solutions, Inc.	20,554	15.6x	14.4x	13.7x	21.2x	19.7x	17.9x	3.5x	3.3x	3.1x
Dye & Durham Ltd.	2,047	12.9x	11.7x	9.4x	0.1x	0.1x	0.1x	4.3x	4.3x	4.1x
Deluxe Corporation	2,035	4.9x	5.1x	5.0x	3.8x	5.2x	4.7x	0.9x	0.9x	0.9x
Information Services Corp	448	6.9x	6.8x	6.5x	11.5x	11.0x	10.2x	2.4x	2.2x	2.1x
Information Services Average		10.1x	9.5x	8.7x	9.1x	9.0x	8.2x	2.8x	2.7x	2.6x
Financial Services Technology										
		EV/EBITDA			P/E			EV/S		
Fidelity National Information Services	51,690	8.3x	8.6x	8.1x	8.5x	9.6x	8.7x	3.6x	3.6x	3.5x
Fiserv, Inc.	94,751	13.1x	12.1x	11.1x	18.0x	16.0x	14.0x	5.6x	5.3x	4.9x
Jack Henry & Associates, Inc.	11,499	18.3x	16.9x	15.6x	31.8x	30.5x	27.5x	5.8x	5.4x	5.0x
ACI Worldwide, Inc.	3,818	10.2x	9.9x	9.2x	20.8x	23.7x	19.2x	2.7x	2.6x	2.5x
Temenos AG	5,565	15.2x	14.4x	12.6x	22.8x	21.2x	18.0x	5.9x	5.6x	5.1x
Global Payments Inc.	41,385	10.6x	9.7x	8.9x	11.7x	10.7x	9.3x	5.1x	4.8x	4.5x
Financial Services Technology Average		12.6x	11.9x	10.9x	18.9x	18.6x	16.1x	4.8x	4.6x	4.2x
Diversified Real Estate Services										
		EV/EBITDA			P/E			EV/S		
Colliers International Group Inc.	6,144	9.7x	8.5x	7.9x	14.6x	13.5x	12.4x	1.4x	1.3x	1.2x
Altus Group Limited	2,646	19.6x	19.4x	15.2x	29.2x	27.1x	23.6x	3.6x	3.4x	3.0x
CBRE Group, Inc. Class A	24,430	8.4x	9.3x	8.3x	12.6x	14.7x	12.3x	0.8x	0.8x	0.7x
Jones Lang LaSalle Incorporated	8,877	7.1x	7.7x	6.7x	8.6x	9.6x	7.8x	0.4x	0.4x	0.4x
Diversified Real Estate Services Average		11.2x	11.2x	9.5x	16.2x	16.2x	14.0x	1.5x	1.5x	1.3x
Software Focused IT Solutions/VARs										
		EV/EBITDA			P/E			EV/S**		
Softchoice Corporation* USD	917	11.2x	10.4x	9.5x	17.3x	17.0x	15.2x	2.9x	2.8x	2.6x
Softcat Plc*	2,567	15.1x	13.7x	12.6x	20.3x	19.1x	18.0x	6.2x	5.3x	4.8x
Crayon Group Holding ASA*	8,494	>50	>50	>50	>50	>50	>50	19.2x	16.9x	14.5x
Bytes Technology Group Plc*	915	13.6x	12.1x	10.8x	18.4x	17.1x	15.3x	NA	NA	NA
Bytes Technology Group Plc* Average		13.3x	12.1x	11.0x	18.6x	17.7x	16.2x	9.4x	8.3x	7.3x
Business Services Average		13.1x	12.0x	10.8x	17.3x	16.1x	15.2x	3.8x	3.5x	3.2x

*Share Price Converted to USD

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

Note: Bolded names are covered by CIBC World Markets Inc.

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

Exhibit 8: SaaS Stocks – Comp Table, 2022–2024E

	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 > 50)										
Snowflake, Inc. Class A	69%	26%	40%	25%	95%	65%	42,872	21.5x	15.2x	11.1x
DataDog	63%	23%	25%	20%	86%	45%	20,769	12.4x	9.9x	7.8x
CrowdStrike Holdings, Inc.	54%	31%	34%	30%	85%	64%	28,330	13.0x	9.7x	7.5x
Zscaler, Inc.	57%	23%	43%	21%	80%	64%	13,955	10.8x	8.0x	6.3x
The Trade Desk Holding	32%	33%	20%	28%	64%	48%	29,609	18.8x	15.7x	12.7x
Paylocity Holding Corp.	37%	19%	36%	19%	56%	55%	10,890	10.8x	8.5x	7.0x
Qualys, Inc.	18%	38%	14%	34%	56%	48%	4,324	8.8x	7.8x	6.9x
Kinaxis, Inc.*	52%	2%	16%	19%	54%	35%	3,160	8.6x	7.4x	6.2x
Toast, Inc. Class A	60%	-6%	33%	-1%	54%	32%	3,160	1.2x	1.4x	1.1x
Atlassian Corp Class A	31%	23%	25%	20%	54%	45%	3,160	1.0x	2.1x	1.8x
ServiceNow, Inc.	23%	30%	22%	30%	53%	52%	93,454	12.9x	10.5x	8.7x
Veeva Systems Inc	16%	36%	9%	35%	53%	45%	26,193	12.3x	11.2x	9.4x
Adobe Incorporated	10%	41%	11%	40%	52%	51%	3,160	0.2x	NEG	NEG
Descartes Systems	14%	37%	14%	35%	51%	49%	6,473	13.5x	12.4x	10.7x
Tier 1 SaaS (Rule of 40 > 50) Average								10.4x	9.2x	7.5x
Tier 2 SaaS (Rule of 40 b/w 41-49)										
Okta, Inc. Class A	43%	6%	17%	10%	49%	27%	12,173	6.7x	5.7x	4.8x
Splunk Inc.	37%	12%	6%	20%	49%	27%	17,365	4.9x	4.5x	4.0x
HubSpot, Inc.	33%	15%	19%	11%	48%	30%	20,196	11.7x	9.8x	8.0x
Cloudflare Inc	49%	-1%	37%	3%	48%	40%	20,289	20.8x	15.2x	11.4x
Box, Inc. Class A	13%	34%	6%	29%	47%	35%	4,024	4.1x	3.8x	3.5x
Paycom Software, Inc.	30%	17%	24%	18%	47%	41%	17,786	12.9x	10.5x	8.6x
MongoDB, Inc.	47%	-1%	18%	6%	46%	24%	15,258	12.2x	10.2x	8.3x
Docebo, Inc.*	43%	2%	28%	9%	45%	37%	1,031	6.6x	5.6x	4.5x
JFrog Ltd.	35%	9%	22%	10%	45%	32%	1,646	5.9x	4.8x	3.9x
Dropbox, Inc.	8%	37%	7%	34%	44%	41%	8,742	3.8x	3.5x	3.4x
Workday, Inc.	20%	21%	16%	24%	41%	40%	46,800	7.6x	6.6x	5.6x
Tier 2 SaaS (Rule of 40 b/w 41-49) Average								8.8x	7.3x	6.0x
Tier 3 SaaS (Rule of 40 b/w 25-40)										
Paychex, Inc.	9%	30%	8%	37%	40%	45%	38,726	8.0x	7.5x	7.0x
DocuSign, Inc.	19%	19%	7%	19%	38%	26%	10,463	4.2x	3.9x	3.6x
Rapid7 Inc.	28%	8%	13%	10%	36%	23%	3,602	5.3x	4.7x	4.0x
Lightspeed POS, Inc.*	49%	-13%	33%	-13%	36%	20%	1,265	1.8x	1.5x	1.2x
Qualtrics International, Inc. Cl	36%	-1%	14%	7%	35%	22%	10,432	7.2x	6.3x	5.5x
Zoom Video Communications	7%	28%	2%	29%	35%	31%	14,209	3.3x	3.2x	3.0x
BlackLine, Inc.	23%	10%	13%	10%	33%	23%	4,081	7.8x	6.9x	6.0x
VMware, Inc.	4%	29%	7%	28%	33%	35%	61,597	4.6x	4.4x	4.1x
Five9, Inc.	28%	5%	16%	7%	32%	23%	4,909	6.3x	5.4x	4.6x
RingCentral, Inc.	25%	6%	10%	11%	31%	21%	4,143	2.1x	1.9x	1.7x
Twilio, Inc.	35%	-7%	13%	3%	27%	16%	8,025	2.1x	1.9x	1.6x
Akamai Technologies, Inc.	4%	23%	3%	14%	27%	17%	14,750	4.1x	4.0x	3.7x
PayPal Holdings, Inc.	6%	19%	9%	20%	25%	29%	84,793	3.1x	2.9x	2.6x
Ceridian HCM Holding, Inc.	22%	3%	20%	11%	25%	31%	11,268	9.0x	7.6x	6.5x
Tier 3 SaaS (Rule of 40 b/w 25-40) Average								4.9x	4.4x	3.9x
Tier 4 SaaS (Rule of 40 <28)										
Confluent Inc Class A	51%	-28%	30%	-9%	23%	21%	6,128	10.5x	8.0x	6.3x
New Relic, Inc.	18%	2%	18%	3%	20%	21%	4,763	5.4x	4.6x	4.0x
Shopify, Inc.	21%	-3%	19%	-3%	18%	16%	58,138	10.4x	8.7x	7.2x
Q2 Holdings Inc.	13%	4%	12%	4%	18%	16%	1,671	3.0x	2.6x	2.3x
Teradata Corporation	-6%	23%	1%	18%	16%	20%	4,107	2.3x	2.3x	2.2x
UiPath, Inc. Class A	19%	-3%	19%	8%	16%	27%	6,986	6.7x	5.6x	4.7x
Wix.com Ltd.	10%	1%	10%	9%	11%	18%	5,144	3.7x	3.4x	3.0x
Zuora, Inc.	14%	-5%	9%	6%	10%	15%	1,053	2.7x	2.4x	2.2x
Yext, Inc.	3%	6%	1%	8%	8%	8%	1,046	2.6x	2.6x	2.5x
2U, Inc.	2%	0%	3%	1%	2%	4%	1,258	1.3x	1.3x	1.2x
LivePerson, Inc.	10%	-21%	-18%	-6%	-11%	-24%	737	1.4x	1.8x	1.7x
Q4 Inc.	5%	-59%	10%	-12%	-54%	-2%	90	1.6x	1.5x	1.3x
Tier 4 SaaS (Rule of 40 <28) Average								4.3x	3.7x	3.2x
SaaS Average								7.1x	6.1x	5.1x

* Share Price Converted to USD

Source: Company reports, FactSet and CIBC World Markets Inc. Bolded names covered by CIBC World Markets Inc.

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