

EQUITY RESEARCH

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March 16, 2023

Industry Update

Q4/22 Canadian Software Recap – Bits & Bytes Weekly

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Key Themes From Q4 Earnings

Sector:
Information Technology

Our Conclusion

Q4 prints reflected a stable environment for our coverage universe, with average revenue 2% below consensus amid pockets of softer demand and EBITDA 7% above as companies focus on profitability. The revenue miss versus consensus was driven largely by Softchoice’s results, which were 19% below consensus expectations against a backdrop of normalizing demand for IT Solutions. Post Q4, consensus F2023E revisions for our coverage universe were mostly positive, with 1% average increases to both revenue and EBITDA. Outliers include QFOR, for which there was a 20% increase to the consensus F2023E EBITDA as the company focuses on driving profitability, and KXS, for which F2023E EBITDA was revised down 13% as F2023 guidance highlighted another year of growth investments.

Key Points

IT Solutions/Business Services Seeing Softer Demand: Three of the four business services names under coverage posted Q4 revenue that was below consensus, although in most cases adjusted EBITDA was roughly in line. CGI was the one outlier, posting a revenue beat as it continues to see strong demand for its managed services and IP Solutions. In general, business services firms are seeing a pullback in enterprise spending on the back of lengthening sales cycles and approval processes.

Profitability Ahead Of Expectations: Q4 adjusted EBITDA for our coverage universe was, on average, 7% above consensus, continuing the trend seen in 2022. DCBO had the largest Q4 profitability beat, exceeding its profitability targets and leading to a +6% revision to F2023E consensus EBITDA. Kinaxis’ adjusted EBITDA also significantly beat expectations, although that beat related more to the timing of investments, with consensus F2023E adjusted EBITDA down 13% post quarter.

F2023 Estimates Appear Stable: Street estimate revisions for F2023 and F2024 were mostly positive, reflecting the resiliency of the business models for the companies under our coverage. On average, F2023E revenue and EBITDA were up 1%, respectively, and F2024E revenue and EBITDA were up 1% and 7%, respectively. With most companies under coverage issuing F2023 guidance with Q4 results, we regard these revisions as positive signs.

Consolidators Turn To M&A: Consolidators within our coverage universe used 2022 to execute on M&A as the pullback in valuations provided opportunities to effectively leverage their balance sheets. Margins for these companies were down Y/Y and we expect 2023 to be a year of integration, moving target companies onto the acquirer’s operating models. CSU completed 58 acquisitions in 2022, including that of Altera for \$700MM, driving margins lower by 550 bps in the latest quarter. ENGH posted a similar dip in margins, down over 400 bps Y/Y, as it acquires SaaS targets to drive growth and remain competitive.

All figures in Canadian dollars unless otherwise stated.

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

Coverage Universe Results

The table in Exhibit 1 shows Q4/22 consensus estimates and the actual numbers reported by companies within our coverage universe. On average, revenue was 2% below consensus estimates while EBITDA was 7% ahead.

Exhibit 1: Coverage Universe – Consensus Vs. Actuals, Q4/C22 (\$MM except per share)

Company	Consensus (Q4/C22E)			Actual (Q4/C22)			% Change (Consensus/Q4/C22 Actual)		
	Revenue	EBITDA	EPS	Revenue	EBITDA	EPS	Revenue	EBITDA	EPS
Software & Systems									
CSU (US\$)	Not Reported			Not Reported			Not Reported		
DSGX (US\$)	123	55	0.29	124	55	0.34	1%	1%	19%
DCBO (US\$)	39	1	0.05	39	2	0.05	1%	98%	0%
ENGH (C\$)	110	36	0.35	108	36	0.31	-2%	-1%	-11%
KXS (US\$)	99	14	0.60	98	21	0.61	-1%	54%	1%
OTEX (US\$)	878	313	0.79	897	341	0.89	2%	9%	13%
QFOR (US\$)	15	(5)	(0.16)	14	(4)	(0.16)	-4%	12%	0%
Business Services									
GIB.A (C\$) (EBIT)	3,319	542	1.60	3,450	554	1.66	4%	2%	4%
CTS (C\$)	792	52	NA	771	43	NA	-3%	-18%	NA
SFTC (US\$)	281	32	0.28	229	32	0.32	-19%	0%	13%
TIXT (US\$)	634	157	0.32	630	157	0.35	-1%	0%	10%
Average							-2%	7%	5%

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

Street Estimate Changes Demonstrate Resiliency

The table in Exhibit 2 compiles the Street estimate revisions made for the companies in our coverage universe post Q4/22 earnings. The largest revision was for Kinaxis as the company issued F2023 guidance which outlined increased investments in the business, leading to lower-than-expected margins for the year. Softchoice also saw downward estimate revisions of 6% for revenue and 5% for EBITDA as the company's Q4/22 sales were well below expectations.

Exhibit 2: Coverage Universe – Street Estimate Revisions, F2023E And F2024E

Coverage	Q1/C23E		F2023E		F2024E	
	Revenue Δ %	EBITDA Δ %	Revenue Δ %	EBITDA Δ %	Revenue Δ %	EBITDA Δ %
QFOR-CA	-4%	21%	-4%	20%	-3%	>100%
ENGH-CA	2%	-8%	1%	-7%	-1%	0%
DCBO-CA	0%	6%	-1%	6%	-2%	54%
OTEX-US	0%	-1%	0%	0%	0.0%	0.1%
CTS-CA	NR	NR	NR	NR	NR	NR
CSU-CA	NR	NR	NR	NR	NR	NR
TIXT-US	7%	-3%	7%	2%	7%	5%
SFTC-CA	-5%	-9%	-6%	-5%	-7%	-6%
GIB.A-CA	3%	2%	3%	1%	3%	3%
DSGX-US	4%	0%	4%	1%	5%	3%
KXS-CA	5%	7%	2%	-13%	5%	-3%
Average	1%	2%	1%	1%	1%	7%

NR – Has not reported results.

Source: FactSet and CIBC World Markets Inc.

News Impacting Our Coverage

Research Highlight: ENGH – Weak Results As Competitive Pressures Remain High

Enghouse's FQ1 results were a continuation of what we had seen in prior quarters, with a structural shift to cloud contact centre software impacting the sale of on-premise solutions and weaker Vidyo revenue driving organic declines. Management's outlook included margins in the 30% range going forward, in line with historical margins but below the 35% range through the pandemic. We foresee upside from M&A as valuations become increasingly attractive. That being said, we expect it will be difficult for Enghouse to return the contact centre business to organic growth given its greater focus than cloud competitors on financial discipline. We retain our Neutral rating. [Link to note](#)

CGI Partners With NetApp To Help Clients Accelerate Data-intensive Digital Transformation In The Cloud

CGI announced a new global alliance partnership with NetApp under which CGI and NetApp will provide clients with a single, consistent cloud environment, unified data services, and centralized management that supports full visibility of both on-premise and cloud-based systems and data.

U.S. Nuclear Regulatory Commission Awards CGI Federal Five-year Contract For Financial System Modernization

CGI announced that it has been awarded a five-year, indefinite-delivery, indefinite quantity (IDIQ) contract with a total value of up to \$40MM with the U.S. Nuclear Regulatory Commission (NRC). Under this new contract vehicle, CGI Federal will provide ongoing support for NRC's financial management systems, which use CGI Federal's Momentum enterprise resource planning (ERP) solution at their core.

Exhibit 3: CIBC Coverage – Price Returns, For The Period Ending March 15, 2023

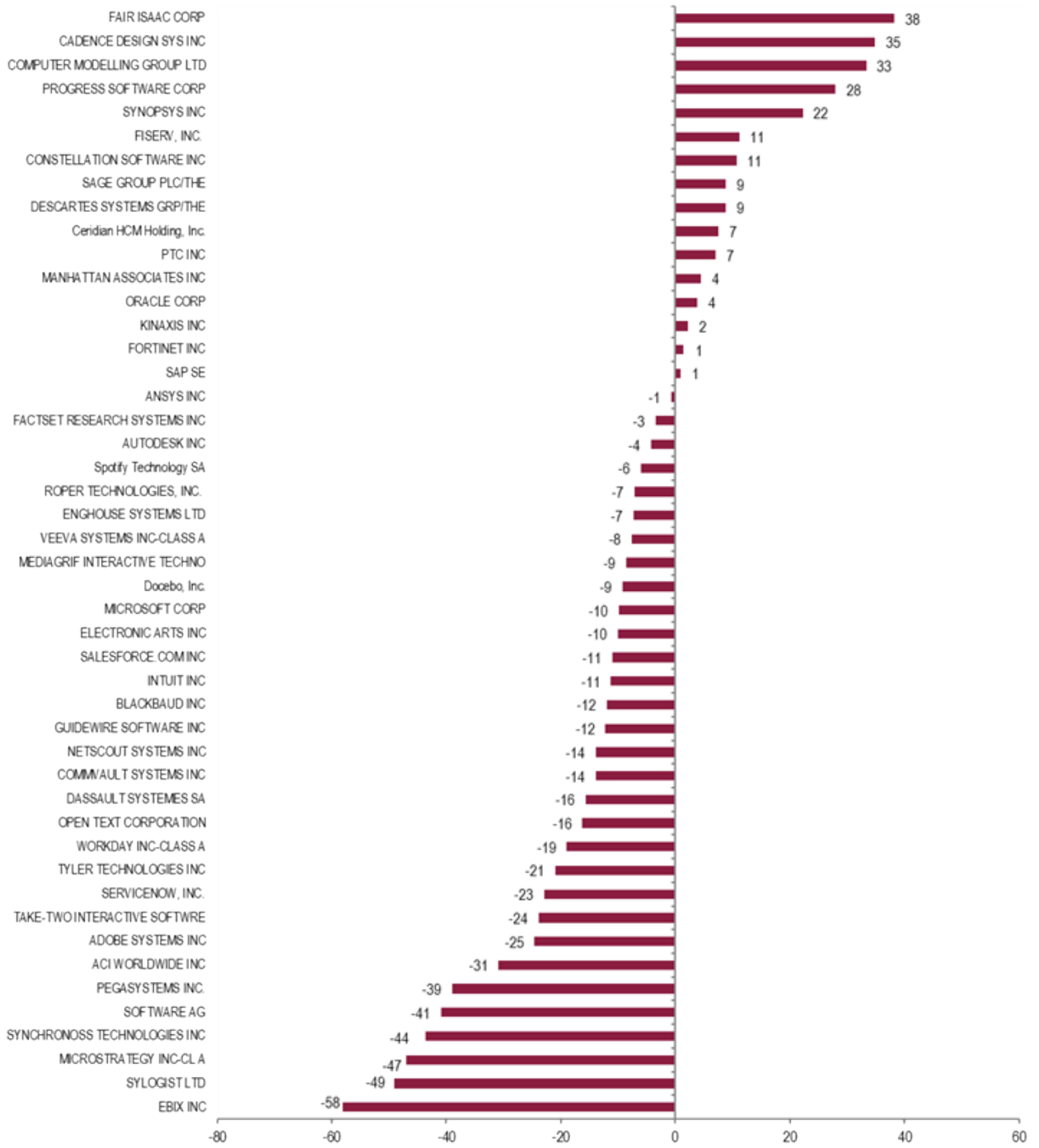
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52 Week High	52 Week Low
Constellation Software Inc	2,312.35	(0.1)	(1.2)	9.6	17.9	15.2	0.3	2417.15	1752.90
Descartes Systems	76.45	(0.1)	2.6	8.6	12.0	7.6	(7.5)	79.08	56.19
Enghouse Systems Limited	37.88	(13.7)	(8.4)	18.5	26.4	(0.6)	(21.8)	44.59	23.96
Open Text Corp	35.48	1.3	0.2	20.6	18.0	(13.3)	(25.3)	44.10	24.91
Kinaxis	169.17	(2.1)	4.1	10.4	21.6	5.3	(4.6)	173.50	119.48
Docebo, Inc.	52.67	6.6	5.1	16.0	28.3	(0.8)	(37.9)	66.10	31.66
Magnet Forensics R	44.12	(0.5)	(0.4)	3.6	87.0	75.5	34.2	45.20	14.89
Q4 Inc.	3.00	8.3	14.1	39.5	(34.1)	NA	(64.7)	5.65	1.88
Software & Systems Average		(0.0)	2.0	15.8	22.1	12.7	(15.9)		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52 Week High	52 Week Low
CGI Group Inc	122.91	(1.2)	(1.4)	3.7	18.4	21.1	9.9	126.62	95.45
Converge Technologies	4.14	(9.6)	(23.3)	(13.0)	(29.4)	(54.6)	(61.9)	11.04	3.60
Softchoice Corporation	15.47	(2.5)	(12.2)	(11.6)	(17.3)	(37.9)	(27.5)	28.66	13.57
Telus International	20.63	(6.2)	(6.9)	6.9	(29.6)	(10.8)	(37.6)	31.52	17.65
Business Services Average		(4.9)	(11.0)	(3.5)	(14.5)	(20.6)	(29.3)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	19,378.84	(4.8)	(6.4)	(2.6)	(1.4)	(8.5)	(8.7)
S&P 500 Index	3,891.93	(2.5)	(5.9)	(2.6)	(1.0)	(8.7)	(18.3)
S&P/TSX Software Index	156.75	(0.8)	(2.6)	10.8	20.3	1.1	(26.1)
S&P500 Software Index	4,516.42	1.8	(2.8)	4.0	4.4	(6.7)	(22.8)

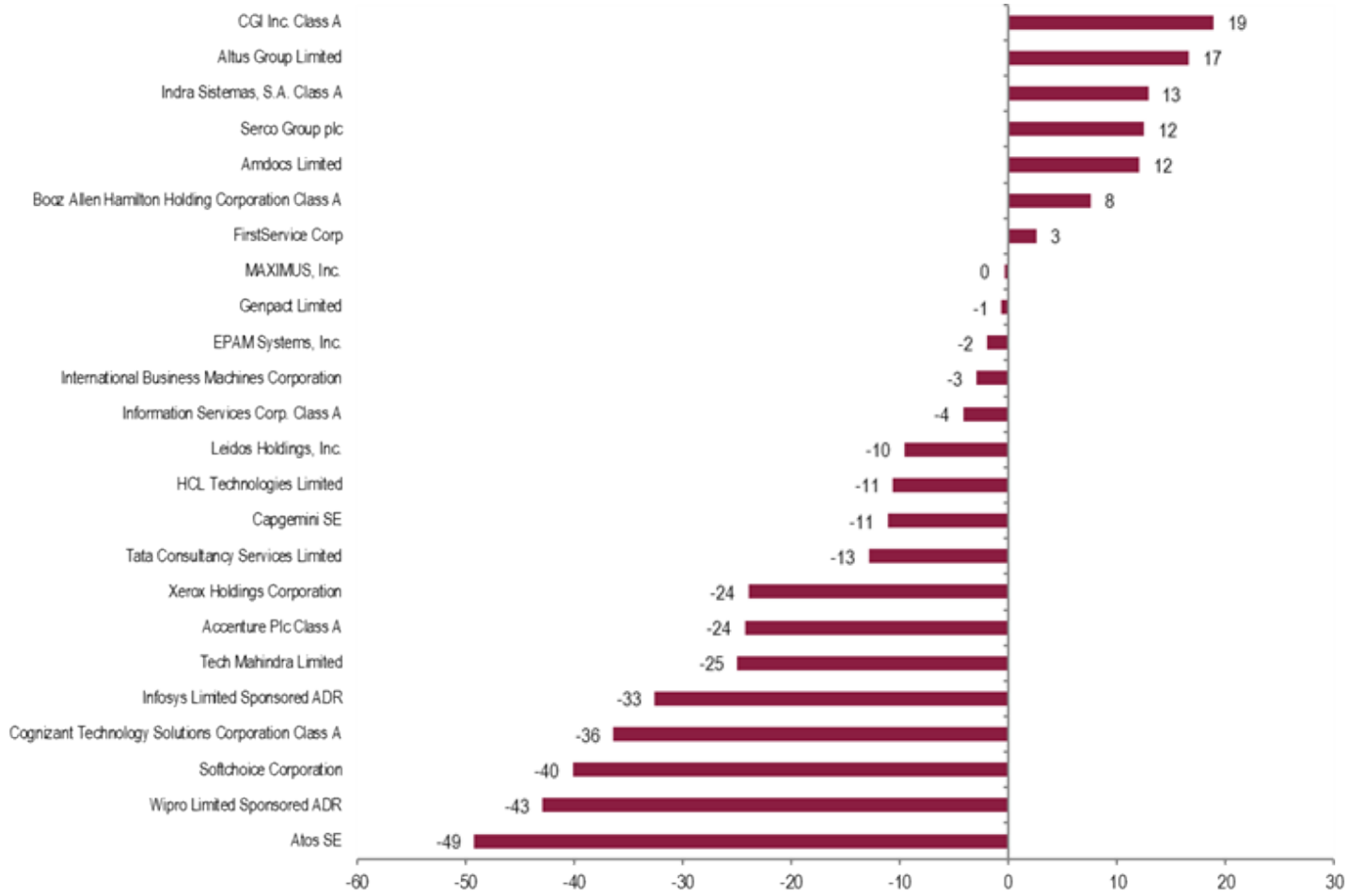
Source: FactSet and CIBC World Markets Inc.

Exhibit 4: Software Stocks – Return Performance, 3/15/2022 - 3/15/2023 (%)



Source: FactSet and CIBC World Markets Inc.

Exhibit 5: Business Services Stocks – Return Performance, 3/15/2022 - 3/15/2023 (%)



Source: FactSet and CIBC World Markets Inc.

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

	Enterprise Value	EV/S			EV/EBITDA			P/E		
		C22	C23E	C24E	C22	C23E	C24E	C22	C23E	C24E
Enterprise Application Software										
Constellation Software Inc.*	36,867	5.6x	5.0x	4.2x	22.5x	19.4x	16.6x	30.4x	28.7x	24.1x
BlackBerry Limited*	2,021	3.0x	2.2x	2.1x	NEG	NEG	NEG	NEG	NEG	NEG
Sage Group plc	8,392	4.2x	3.8x	3.5x	18.4x	16.3x	14.8x	28.1x	24.2x	21.6x
Tyler Technologies, Inc.	14,557	7.9x	7.4x	6.8x	30.6x	30.4x	26.9x	43.7x	43.3x	38.1x
Roper Technologies, Inc.	50,800	9.5x	8.5x	8.0x	23.1x	20.7x	19.4x	29.5x	26.0x	24.3x
Enghouse Systems Limited	1,860	4.4x	4.30x	4.23x	13.5x	12.9x	12.77x	19.1x	26.8x	26.50x
Oracle Corporation	281,614	6.0x	5.4x	5.0x	12.0x	10.8x	9.8x	16.7x	15.5x	13.7x
SAP SE	139,595	4.2x	4.3x	4.0x	17.5x	15.4x	13.4x	27.0x	20.4x	17.7x
Enterprise Application Software Average		5.6x	5.1x	4.7x	19.7x	18.0x	16.2x	27.8x	26.4x	23.7x
Extended ERP										
Adobe Incorporated	151,264	8.5x	7.8x	7.0x	17.4x	16.0x	14.4x	24.1x	21.4x	18.8x
Open Text Corporation	12,225	3.5x	2.2x	2.0x	9.8x	7.1x	5.2x	11.2x	12.7x	6.6x
Manhattan Associates, Inc.	8,633	11.3x	10.4x	9.3x	39.5x	39.2x	34.6x	>50	>50	45.3x
Pegasystems Inc.	4,211	3.2x	3.0x	2.7x	>50	23.5x	16.3x	>50	30.9x	21.9x
Software AG	1,677	1.8x	1.7x	1.6x	9.8x	9.1x	7.6x	17.8x	12.7x	10.9x
Fiserv, Inc.	89,897	5.4x	5.0x	4.7x	12.4x	11.5x	10.5x	16.8x	14.9x	13.1x
Extended ERP Average		5.6x	5.0x	4.5x	17.8x	17.7x	14.8x	17.5x	18.5x	19.4x
Software As A Service										
Descartes Systems Group Inc.	6,215	12.8x	11.6x	10.5x	28.9x	26.1x	23.6x	>50	>50	>50
Kinaxis, Inc.*	3,246	8.8x	8.0x	6.7x	43.9x	43.3x	35.4x	>50	>50	>50
Docebo, Inc.*	1,043	7.3x	5.4x	4.1x	NEG	>50	>50	>50	>50	>50
Lightspeed Commerce Inc*	1,363	2.0x	1.6x	1.2x	NEG	NEG	40.0x	NEG	>50	>50
Veeva Systems Inc Class A	23,556	11.1x	10.1x	8.5x	27.9x	28.1x	22.8x	40.4x	39.8x	33.3x
Shopify, Inc. Class A	51,927	9.3x	7.8x	6.4x	>50	>50	>50	>50	>50	>50
Q4 Inc*	59	1.1x	1.1x	0.9x	NEG	NEG	NEG	NEG	NEG	NEG
Ceridian HCM Holding, Inc.	11,405	9.2x	7.7x	6.6x	45.5x	31.1x	25.1x	>50	>50	43.5x
ServiceNow, Inc.	83,666	11.5x	9.4x	7.7x	36.6x	30.4x	24.1x	>50	45.9x	37.1x
Workday, Inc. Class A	44,868	7.3x	6.3x	5.4x	28.6x	22.5x	18.7x	>50	37.1x	30.1x
Software As A Service Average		8.4x	7.1x	5.9x	35.2x	31.6x	27.2x	40.4x	40.9x	36.0x
Infrastructure Vendors										
Microsoft Corporation	1,949,526	9.6x	8.9x	7.9x	19.6x	18.1x	15.5x	28.7x	26.4x	22.8x
Infrastructure Vendors Average		9.6x	8.9x	7.9x	19.6x	18.1x	15.5x	28.7x	26.4x	22.8x
Software Average		6.9x	6.1x	5.3x	24.1x	22.5x	19.8x	25.7x	26.7x	25.0x

*Share Price Converted to USD

Source: FactSet and CIBC World Markets Inc.

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

	Enterprise Value (\$mlns.)	EV/EBIT	EV/EBITDA				P/E			EV/S		
		C21	C22	C23E	C24E	C22	C23E	C24E	C22	C23E	C24E	
Business & IT Services												
CGI Inc. Class A	31,823	12.9x	12.9x	11.4x	11.0x	19.6x	17.6x	16.8x	2.4x	2.3x	2.2x	
TELUS International (CDA), Inc.	6,340	11.7x	10.4x	8.9x	7.7x	16.7x	16.6x	13.8x	2.6x	2.1x	1.9x	
Accenture Plc Class A	157,507	16.4x	13.7x	12.9x	12.0x	22.4x	20.8x	18.9x	2.5x	2.4x	2.2x	
Booz Allen Hamilton	14,340	16.1x	14.5x	13.5x	12.4x	20.4x	18.9x	17.0x	1.6x	1.5x	1.4x	
CACI International Inc Class A	8,650	11.7x	12.9x	11.9x	11.2x	15.8x	14.9x	13.4x	1.3x	1.3x	1.2x	
DXC Technology Co.	8,808	4.4x	3.7x	3.8x	3.8x	6.7x	6.0x	5.3x	0.6x	0.6x	0.6x	
Genpact Limited	9,079	14.1x	11.5x	10.6x	9.6x	15.9x	14.7x	13.1x	2.1x	1.9x	1.8x	
International Business Machines	156,633	11.7x	10.0x	10.4x	10.1x	13.5x	13.0x	12.2x	2.6x	2.5x	2.4x	
Atos SE	3,293	3.1x	3.2x	3.0x	2.7x	>50	7.0x	4.7x	0.3x	0.3x	0.3x	
Capgemini SE	34,341	11.9x	9.8x	9.4x	8.6x	14.5x	14.8x	13.4x	1.6x	1.5x	1.4x	
Sopra Steria Group SA	5,148	9.7x	8.7x	7.5x	6.9x	13.9x	11.4x	10.1x	1.0x	0.9x	0.9x	
Converge Technology Solutions C	1,066	11.3x	7.7x	5.8x	5.1x	26.0x	20.7x	17.4x	0.4x	0.4x	0.3x	
Business & IT Services Average		11.2x	10.1x	9.4x	8.7x	16.0x	14.2x	12.6x	1.7x	1.6x	1.5x	
HR Outsourcing												
Ceridian HCM Holding, Inc.	11,405	>50	45.5x	31.1x	25.1x	>50	>50	43.5x	9.2x	7.7x	6.6x	
Willis Towers Watson	27,603	12.4x	11.6x	11.3x	10.2x	16.4x	15.2x	12.8x	3.1x	3.0x	2.8x	
Aon Plc Class A	69,175	18.1x	17.4x	16.0x	15.0x	21.3x	19.6x	17.5x	5.5x	5.2x	5.0x	
Automatic Data Processing, Inc.	90,468	23.6x	19.6x	17.6x	16.2x	28.2x	25.0x	22.5x	5.3x	4.9x	4.6x	
Paychex, Inc.	38,202	23.1x	17.7x	16.5x	15.2x	26.4x	24.3x	22.7x	7.9x	7.4x	7.0x	
HR Outsourcing Average		19.3x	22.4x	18.5x	16.4x	23.1x	21.0x	23.8x	6.2x	5.6x	5.2x	
Information Services												
Broadridge Financial Solutions, Inc.	19,865	17.1x	15.0x	13.9x	13.2x	20.4x	18.9x	17.2x	3.4x	3.2x	3.0x	
Dye & Durham Ltd.	2,178	13.7x	13.7x	12.4x	9.9x	0.1x	0.1x	0.1x	4.5x	4.6x	4.3x	
Deluxe Corporation	2,049	5.6x	4.9x	5.2x	5.0x	3.9x	5.3x	4.6x	0.9x	0.9x	0.9x	
Information Services Corp	427	6.3x	6.6x	6.3x	6.9x	10.3x	10.4x	10.7x	2.2x	2.1x	2.0x	
Information Services Average		10.7x	10.1x	9.4x	8.8x	8.7x	8.7x	8.2x	2.8x	2.7x	2.6x	
Financial Services Technology												
Fidelity National Information Services	48,889	8.0x	7.9x	8.1x	7.6x	7.8x	8.7x	8.0x	3.4x	3.4x	3.3x	
Fiserv, Inc.	89,897	16.2x	12.4x	11.5x	10.5x	16.8x	14.9x	13.1x	5.4x	5.0x	4.7x	
Jack Henry & Associates, Inc.	10,793	15.5x	17.1x	15.9x	14.6x	29.8x	28.6x	25.9x	5.4x	5.1x	4.7x	
ACI Worldwide, Inc.	3,487	9.5x	9.3x	9.0x	8.4x	18.3x	20.9x	16.9x	2.5x	2.4x	2.3x	
Temenos AG	5,216	9.5x	14.4x	14.0x	12.2x	21.1x	20.0x	17.2x	5.5x	5.3x	4.8x	
Global Payments Inc.	38,693	10.6x	9.9x	9.1x	8.4x	10.6x	9.7x	8.4x	4.8x	4.5x	4.2x	
Financial Services Technology Average		11.5x	11.8x	11.3x	10.3x	17.4x	17.1x	14.9x	4.5x	4.3x	4.0x	
Diversified Real Estate Services												
Colliers International Group Inc.	6,291	11.5x	10.0x	8.7x	8.1x	15.1x	13.8x	12.7x	1.4x	1.3x	1.3x	
Altus Group Limited	2,681	24.4x	19.8x	18.3x	17.8x	28.8x	27.1x	24.7x	3.6x	3.4x	3.1x	
CBRE Group, Inc. Class A	25,083	11.7x	8.6x	9.4x	8.2x	13.0x	14.5x	12.3x	0.8x	0.8x	0.7x	
Jones Lang LaSalle Incorporated	9,425	6.5x	7.5x	8.0x	7.1x	9.3x	9.9x	8.3x	0.5x	0.4x	0.4x	
Diversified Real Estate Services Average		13.5x	11.5x	11.1x	10.3x	16.6x	16.3x	14.5x	1.6x	1.5x	1.4x	
Software Focused IT Solutions/VARs												
Softchoice Corporation* USD	762	31.2x	9.3x	8.6x	7.9x	14.0x	13.8x	12.3x	2.4x	2.3x	2.1x	
Softcat Plc*	2,048	12.2x	12.4x	11.5x	10.5x	16.7x	16.2x	15.2x	5.1x	4.5x	4.0x	
Crayon Group Holding ASA*	8,896	>50	>50	>50	>50	>50	>50	>50	20.2x	18.2x	15.6x	
Bytes Technology Group Plc*	816	16.8x	12.7x	11.2x	9.9x	17.2x	16.1x	14.1x	NA	NA	NA	
Bytes Technology Group Plc* Average		20.1x	11.5x	10.5x	9.4x	16.0x	15.3x	13.9x	9.3x	8.3x	7.3x	
Business Services Average		13.3x	12.6x	11.4x	10.4x	16.3x	15.3x	14.5x	3.7x	3.4x	3.1x	

*Share Price Converted to USD

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

Source: 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			
								C21	C22	C23E	C24E
Tier 1 SaaS (Rule of 40 > 60)											
Zoom Video Communications	11%	28%	4%	27%	39%	31%	15,434	5.8x	3.5x	3.5x	3.3x
CrowdStrike Holdings, Inc.	58%	30%	36%	29%	88%	65%	27,990	32.0x	12.9x	9.5x	7.4x
Shopify, Inc.	21%	-3%	19%	-4%	18%	15%	51,927	11.3x	9.3x	7.8x	6.4x
Zscaler, Inc.	60%	23%	34%	22%	82%	56%	14,939	22.2x	11.6x	8.6x	6.7x
Lightspeed Commerce Inc*	49%	-13%	23%	-4%	36%	19%	1,281	5.8x	1.9x	1.5x	1.2x
DocuSign, Inc.	25%	18%	8%	18%	42%	26%	11,227	7.7x	4.5x	4.2x	3.9x
Veeva Systems Inc	18%	38%	12%	36%	56%	48%	23,556	16.1x	11.1x	10.1x	8.5x
Atlassian Corp. Plc	31%	23%	21%	23%	54%	43%	40,518	19.4x	12.8x	10.4x	8.3x
Twilio, Inc.	35%	-6%	12%	4%	29%	16%	8,957	3.2x	2.3x	2.1x	1.8x
ServiceNow, Inc.	23%	30%	22%	30%	53%	52%	83,666	14.2x	11.5x	9.4x	7.7x
HubSpot, Inc.	33%	15%	19%	11%	48%	30%	18,710	14.4x	10.8x	9.1x	7.5x
Tier 1 SaaS (Rule of 40 > 60) Average								13.8x	8.4x	6.9x	5.7x
Tier 2 SaaS (Rule of 40 b/w 40-60)											
Docebo, Inc.*	46%	0%	29%	-4%	46%	25%	1,043	10.0x	7.3x	5.4x	4.1x
Qualys, Inc.	18%	38%	14%	34%	56%	48%	4,186	10.1x	8.5x	7.5x	6.6x
Descartes Systems	17%	37%	9%	39%	54%	48%	6,215	14.6x	12.8x	11.6x	10.5x
Five9, Inc.	32%	1%	16%	6%	33%	22%	4,594	7.5x	5.9x	5.1x	4.3x
Dropbox, Inc.	8%	37%	7%	34%	44%	40%	7,994	3.7x	3.4x	3.2x	3.1x
Wix.com Ltd.	10%	1%	9%	9%	11%	17%	5,174	4.1x	3.7x	3.4x	3.0x
Workday, Inc.	21%	21%	17%	21%	42%	38%	44,868	10.4x	7.3x	6.3x	5.4x
VMware, Inc.	4%	25%	5%	30%	30%	35%	56,981	4.8x	4.3x	4.0x	3.7x
Tier 2 SaaS (Rule of 40 b/w 40-60) Average								8.2x	6.7x	5.8x	5.1x
Tier 3 SaaS (Rule of 40 b/w 28-40)											
BlackLine, Inc.	23%	10%	13%	8%	33%	21%	4,167	9.8x	8.0x	7.0x	6.1x
MongoDB, Inc.	53%	-1%	26%	3%	51%	29%	14,046	23.8x	11.2x	9.3x	7.6x
LivePerson, Inc.	15%	-30%	3%	-4%	-15%	-1%	1,084	2.3x	2.1x	2.4x	2.3x
Rapid7 Inc.	28%	8%	13%	2%	36%	15%	3,075	5.7x	4.5x	4.0x	3.4x
Paylocity Holding Corp.	37%	19%	28%	16%	56%	45%	9,794	15.4x	9.7x	7.6x	6.3x
Q2 Holdings, Inc.	16%	3%	16%	3%	19%	19%	1,634	3.3x	2.9x	2.6x	2.3x
Akamai Technologies, Inc.	4%	23%	3%	14%	27%	17%	13,312	3.8x	3.7x	3.6x	3.4x
Tier 3 SaaS (Rule of 40 b/w 28-40) Average								9.2x	6.0x	5.2x	4.5x
Tier 4 SaaS (Rule of 40 <28)											
RingCentral, Inc.	25%	9%	10%	12%	34%	22%	4,498	2.8x	2.3x	2.1x	1.8x
Teradata Corporation	-6%	23%	1%	18%	16%	20%	3,815	2.0x	2.1x	2.1x	2.0x
Zuora, Inc.	14%	3%	9%	0%	17%	9%	1,101	3.6x	2.8x	2.6x	2.3x
New Relic, Inc.	18%	2%	16%	7%	20%	23%	4,601	6.9x	5.2x	4.5x	3.9x
Kinaxis, Inc.*	44%	3%	19%	10%	46%	29%	3,246	12.9x	8.8x	8.0x	6.7x
Yext, Inc.	5%	4%	3%	-1%	8%	2%	1,091	3.1x	2.7x	2.7x	2.6x
Splunk Inc.	31%	9%	17%	18%	40%	35%	16,453	7.4x	4.6x	4.3x	3.8x
Tier 4 SaaS (Rule of 40 <28) Average								5.5x	4.1x	3.7x	3.3x
SaaS Average								9.7x	6.5x	5.6x	4.8x

*Share Price Converted to USD

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

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