

EQUITY RESEARCH

September 23, 2022

Industry Update

**Eastern Institutional Investor Conference
Takeaways – Bits & Bytes Weekly**

Positive Tone As Macro Environment Remains Volatile

Sector:
Information Technology

Our Conclusion

CIBC's 21st Annual Eastern Institutional Investor Conference was held in-person in Montreal this week. The tone from our presenting companies was positive, with software companies still seeing a strong demand environment despite inflationary pressures and recessionary concerns. Our three key takeaways from discussions with company managements are: 1) spending on digital transformations remains strong, with a special focus on automation and optimization technology; 2) inflationary pressures are mitigated well through price increases and automation; and 3) M&A remains a focus with public market valuation compression trickling into private markets.

Key Points

Strong Demand As Inflationary Pressures Persist: The general tone at the conference was fairly positive around the demand environment, with software companies noting consistent spending patterns across North America and Europe. While digitization and supply chain continue to be tailwinds, the tight labour market is also driving need for IT service providers as they step in to act as an extension of the IT team for their customers. Vendor consolidation was another theme acting as a tailwind for businesses like CGI as customers look for more flexibility and cost-cutting opportunities. All companies in our coverage noted that while the labour market has started easing in the last few months, it still remains a cause for concern. Inflationary pressures are driving companies to pass on price increases to customers, to mitigate the impact on margins.

European Markets And FX: While FX movements are a headwind, to date we have seen little indication that fundamental European software demand has been impacted by the more uncertain macro environment. GIB.A, which could be viewed as a leading indicator given its consulting practice, noted no signs of a slowdown in the European market although did note a higher focus on cost savings in that region, driving customers to more of its IP products and managed services. Similar comments were echoed by the other software firms with significant European exposure. Looking forward, slowing enterprise IT demand in Europe is a potential headwind to the sector, although long-term contracts (GIB.A) and strong recurring revenue (DSGX) should partially offset.

M&A Environment Becoming Favourable: With tech valuations falling and a favourable FX environment, we have seen an increase in European acquisitions by Canadian technology firms. OTEX announced the \$6B acquisition of U.K.-based Macro Focus in August 2022, following GIB.A's EUR310MM acquisition of Umanis in March 2022 and Converge's \$60MM announced acquisition of U.K.-based Stone Pay. Given the current environment, we would not be surprised to see further M&A activity, with management teams sounding more bullish on the M&A environment.

All figures in Canadian dollars unless otherwise stated.

For required regulatory disclosures please refer to "Important Disclosures" beginning on page 11.

Stephanie Price, CFA
+1 416-594-7047
Stephanie.Price@cibc.com

Scott Fletcher, CPA, CA
+1 416-956-3229
Scott.Fletcher@cibc.com

Javeria Gaya, CPA
+1 416-594-7261
Javeria.Gaya@cibc.com

Natalie Zhang, CFA
+1 416-581-2120
Natalie.Zhang@cibc.com

Eastern Institutional Conference Research Highlights

CGI: Spending patterns remain fairly consistent. Mr. Schindler noted a customer comment that the 'digitization race never ends', which sums up what is being seen by management in the market globally. There is, however, more focus on cost savings and outcomes given recessionary concerns. With the conflict in Europe, the company noted a higher focus on cost savings in that region, driving customers to more of CGI's IP products and managed services. Managed services and IP are areas that perform well during uncertain times as customers struggle to retain talent and focus on cost optimization. There was also a recurring theme of customers looking for vendor consolidation to drive some flexibility and cost savings, which will likely act as a tailwind for CGI. On pricing, the company has built in indexation in its managed services contracts and has utilized its offshore teams and automation to mitigate the impact of cost inflation. Price increases will not be the driver of growth in the business, but rather to mitigate inflationary impacts. [Link To Note](#)

Converge: In the U.S., Mr. Maine confirmed no slowdown in demand for its services, noting expectations for a strong Q4. In Canada, the company sees a more cautionary tone for spending in F23. And in Europe, while the situation is more volatile for certain market segments, there appears to be no slowdown in Converge's primary market (education). With the company focusing on mid-market customers that are struggling to handle IT support and analytics internally, the tight labour market and ramp-up to digitize have acted as tailwinds for Converge's services. [Link To Note](#)

Softchoice: Softchoice noted that recession fears have not resulted in any slowdown in spending across its SMB and Commercial customers, which comprise ~90% of overall revenue and 75% of Gross Profit. These companies are typically earlier in their digital journey and rely on Softchoice as an extension of their team, especially given the tight IT labour market. Softchoice has seen some slowdown in Enterprise (~10% revenue and 25% Gross Profit), but it appears more company-specific (M&A integration, overbuying hardware in F21 etc.). [Link To Note](#)

Descartes Systems: Management confirmed that there appears to be no slowdown in customer spending, as supply chain technology projects remain a key priority for customers. Current backlog remains strong due to congestion in west and east coast ports, delaying shipment timelines. Mr. Ryan noted that tailwinds from current events such as the Ukraine war are driving clients to engage Descartes for incremental services. [Link To Note](#)

News Impacting Our Coverage

Research Highlight – CTS – Converge To Acquire Stone Group For C\$60 Million

Converge announced the acquisition of Stone Group for \$59.6MM or ~6.6x TTM EBITDA. Headquartered in the U.K., Stone Group is an IT solutions provider for education institutions as well as public and private sector organizations in the U.K. The 6.6x EV/EBITDA multiple is above Converge's typical 5x, with management continuing to build out Converge's European/U.K. business [Link To Note](#)

Research Highlight – CGI – Read-throughs From Accenture's FQ4/F22 Results

CGI peer Accenture reported roughly in-line FQ4/F22 results, with a book to bill of 1.19x. The company posted outsourcing numbers 7% above expectations, while the consulting division missed consensus by 3%. Accenture also released FY23 guidance, which was roughly in line with consensus, although the FQ1 revenue guide was 4% below. Accenture's results highlight a solid demand environment, despite macro headwinds. We retain our Outperformer rating and \$135 price target on CGI. [Link To Note](#)

Research Highlight – DND - Dye & Durham Updates Link Group Proposal In Response To FCA's Requirement; Link's Board Does Not Recommend

Following the UK Financial Conduct Authority's (FCA) requirement for DND to cover a potential £306 million redress payment associated with the Woodford Equity & Income Fund (link), Dye & Durham has revised its offer for Link to account for the potential redress payment. The new deal structure reduces upfront consideration by the maximum potential redress, with the balance of the payment structured as contingent consideration. Link Group's Board has stated it is unable to recommend the revised offer to shareholders, a sign in our view that we may be nearing an end of the drawn-out acquisition process without a deal being agreed to. [Link To Note](#)

Research Highlight – CARE – Business Update Includes Q3 Outlook & Highlights \$4.6 Million Optima Customer Non-renewal

Dialogue provided a business update that was highlighted by the nonrenewal of an EAP customer at Dialogue's acquired Optima business. The non-renewal represents approximately \$4.6 million in revenue, with the contract expiring on December 31, 2022. The \$4.6 million in revenue represents 13% of our 2023E EAP revenue forecast and 3.4% of our overall 2023E revenue forecast. The update also included an outlook for Q3/22 results, which included revenue that is 7% below consensus expectations, gross margins ~250bps above consensus and an adjusted EBITDA loss that was in line with consensus, implying margins that are 100bps below the Street. On the positive side, Dialogue highlighted the addition of Dialogue's Mental Health and EAP services to the Canada Life Consult+ platform as well as \$5.2 million of new ARR added quarter-to-date, with more expected to close before quarter-end. Overall, we expect the update to be taken negatively, although the positive momentum on ARR growth and service expansion may provide some level of mitigation. [Link To Note](#)

CGI Partners With UiPath To Offer Automation-As-A-Service Within Managed Services

CGI and UiPath expanded partnership aimed to expand automation deployment for CGI's managed service clients. CGI Accel360 is a subscription service aimed to help clients implement enterprise automation by removing upfront investment costs.

Kinaxis Wins Contract With Global Tea Leader ekaterra

Kinaxis announced that ekaterra, the world's largest tea company and owner of Lipton, has chosen Kinaxis to digitize its supply chain. The company will deploy Kinaxis RapidResponse for concurrent planning capabilities in supply chain planning.

Truth Labs Leveraging Magnet Forensics AXIOM For Child Abuse And Fraud Cases

India's independent, non-profit forensic science laboratory Truth Labs is leveraging Magnet Forensics AXIOM product against fraud and child abuse cases. Truth Labs has been using Magnet AXIOM since 2019 to recover, analyze and report on digital evidence from phones, computers, IoT devices, and in the cloud across more than 300 cases.

Softchoice Named Canada 2022 AWS Solution Provider Partner Of the Year

Amazon AWS named Softchoice as the Canada 2022 AWS Solution Provider Partner of the Year. The award was determined based on customer and revenue growth for AWS solutions.

Exhibit 1: CIBC Software/Services – Coverage Performance, 9/22/2021 - 9/22/2022

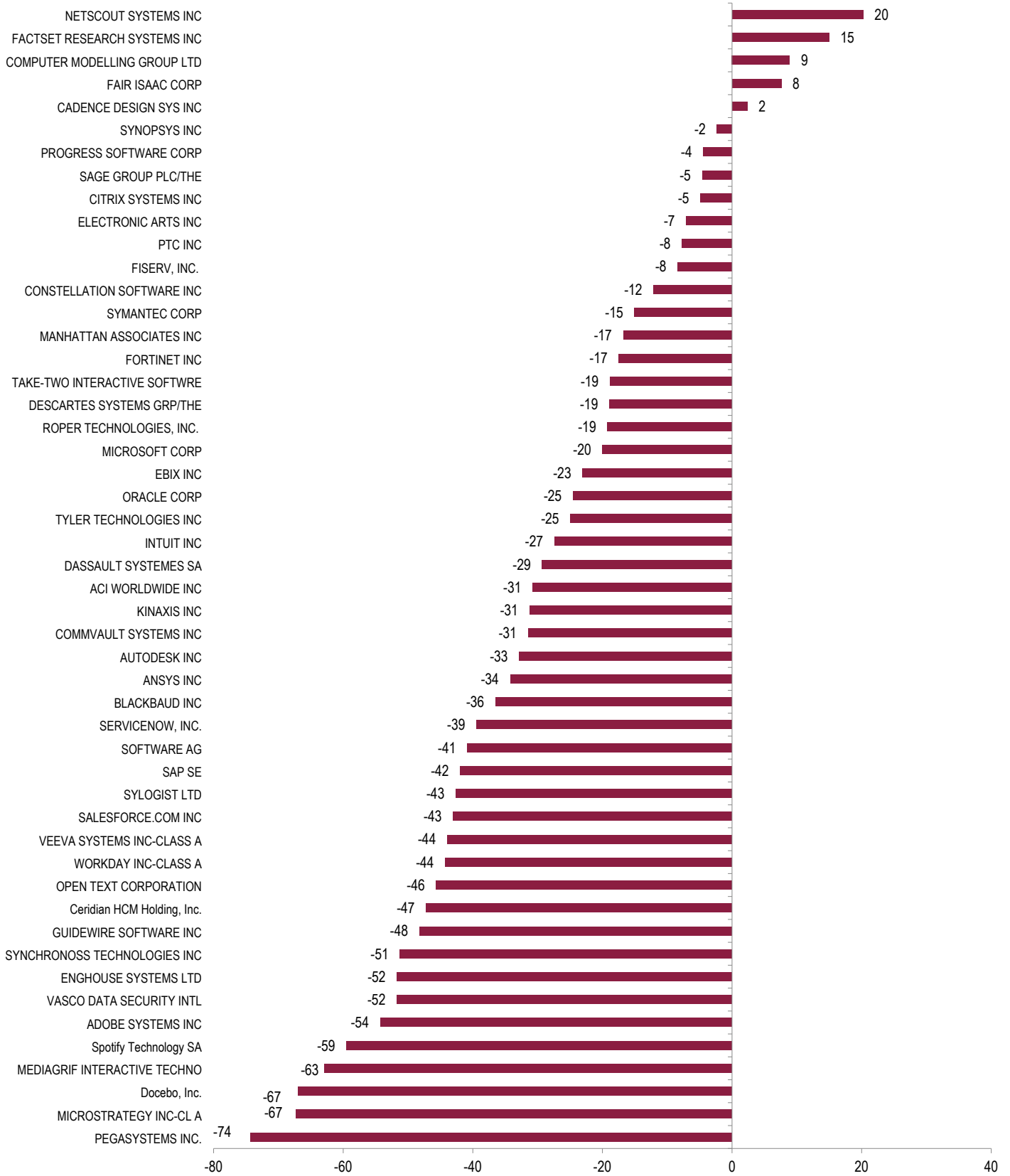
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	1,911.94	(2.4)	(9.5)	4.2	(12.8)	(12.1)	(18.5)	2385.80	1793.93
Descartes Systems	66.51	(4.5)	(5.1)	9.3	(15.6)	(22.4)	(19.6)	91.39	56.19
Enghouse Systems Limited	28.86	(4.3)	(11.7)	6.8	(28.7)	(51.7)	(40.4)	61.45	23.96
Open Text Corp	27.87	(6.1)	(25.6)	(25.6)	(36.1)	(45.6)	(41.3)	52.70	27.81
Kinaxis	136.34	(3.9)	(13.3)	2.9	(19.8)	(31.3)	(23.1)	229.98	119.48
Docebo, Inc.	36.81	(8.2)	(6.4)	(2.2)	(41.7)	(67.0)	(56.6)	112.24	32.35
Magnet Forensics	21.50	(8.4)	(12.1)	32.7	(28.2)	(56.7)	(34.6)	51.28	14.89
Q4 Inc.	4.37	(4.0)	(0.2)	0.9	(16.8)	NA	(48.6)	12.05	4.01
Average		(5.2)	(10.5)	3.6	(25.0)	(41.0)	(35.3)		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	102.76	(0.2)	(4.9)	4.5	0.3	(10.2)	(8.1)	116.46	95.45
Converge Technologies	6.11	(1.8)	(1.3)	11.9	(42.7)	(49.9)	(43.8)	12.80	4.85
Softchoice Corporation	20.06	1.0	0.1	(3.6)	(25.1)	(36.5)	(6.0)	33.44	17.48
Telus International	38.91	0.1	0.3	27.1	20.2	(10.2)	(6.9)	49.43	26.75
Average		(0.2)	(1.4)	10.0	(11.8)	(26.7)	(16.2)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	19,195.95	(1.9)	(3.9)	1.0	(13.0)	(5.9)	(9.6)
S&P 500 Index	3,766.88	(3.4)	(9.0)	0.2	(16.5)	(14.3)	(21.0)
S&P/TSX Software Index	124.94	(4.6)	(8.9)	(2.3)	(29.0)	(47.7)	(41.1)
S&P500 Software Index	4,037.81	(3.3)	(14.2)	(5.2)	(22.1)	(25.6)	(30.9)

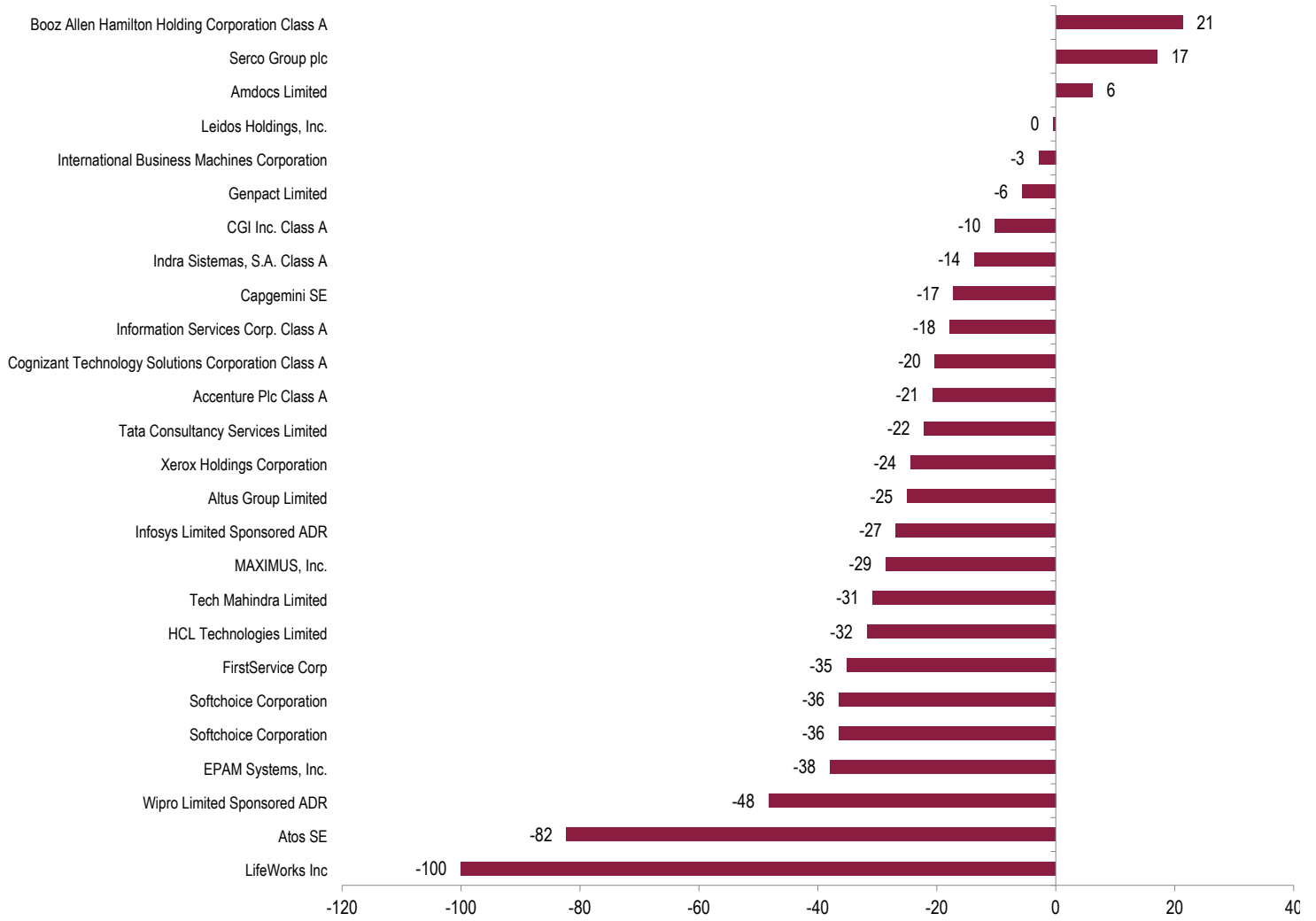
Source: FactSet and CIBC World Markets Inc.

Exhibit 2: Software Stocks – Return Performance (%), 9/22/2021 - 9/22/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 3: Business Services Stocks – Return Performance (%), 9/22/2021 - 9/22/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 4: Software Stocks – Comp Table, 2021 - 2023E

	Enterprise Value (\$mlns.)	EV/S			EV/EBITDA			P/E		
		C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E
Enterprise Application Software										
Constellation Software Inc.*	31,665	6.2x	4.8x	4.3x	21.0x	18.6x	15.9x	45.8x	25.7x	23.2x
BlackBerry Limited*	3,004	3.4x	4.4x	3.2x	>50	NEG	NEG	NEG	NEG	NEG
Sage Group plc	7,565	4.1x	3.8x	3.6x	18.3x	16.1x	14.8x	27.4x	26.3x	23.5x
Tyler Technologies, Inc.	15,634	9.8x	8.4x	7.7x	44.5x	33.1x	30.3x	>50	47.0x	43.5x
Roper Technologies, Inc.	47,281	8.2x	9.0x	8.4x	21.4x	22.1x	20.3x	36.2x	27.4x	25.1x
Enghouse Systems Limited	1,386	3.0x	3.3x	3.32x	8.5x	10.2x	10.1x	17.2x	21.7x	21.6x
Oracle Corporation	237,519	5.9x	5.1x	4.6x	12.7x	10.1x	9.3x	14.7x	13.5x	12.4x
SAP SE	105,765	3.8x	3.4x	3.3x	14.8x	12.5x	11.1x	18.7x	17.2x	15.1x
Enterprise Application Software Average		5.5x	5.3x	4.8x	20.1x	17.5x	16.0x	26.7x	25.5x	23.5x
Extended ERP										
Adobe Incorporated	132,562	8.4x	7.4x	6.6x	19.8x	15.1x	13.5x	28.6x	20.7x	18.0x
Open Text Corporation	10,301	3.0x	2.9x	2.8x	8.1x	8.2x	7.7x	8.8x	8.9x	8.2x
Manhattan Associates, Inc.	8,141	12.3x	11.0x	9.9x	>50	41.8x	36.2x	>50	>50	>50
Pegasystems Inc.	3,117	2.6x	2.4x	2.1x	NEG	>50	25.0x	NEG	>50	39.1x
Software AG	1,499	1.8x	1.6x	1.5x	9.7x	7.5x	6.6x	21.4x	15.4x	12.8x
Fiserv, Inc.	84,835	5.2x	5.1x	4.7x	15.3x	11.8x	10.9x	>50	15.4x	13.5x
Extended ERP Average		5.5x	5.1x	4.6x	13.2x	16.9x	16.6x	19.6x	15.1x	18.3x
Software As A Service										
Descartes Systems Group Inc.	5,459	12.9x	11.1x	10.0x	29.5x	25.3x	22.5x	>50	>50	>50
Kinaxis, Inc.*	2,626	10.5x	7.3x	6.5x	>50	40.4x	35.9x	>50	>50	>50
Docebo, Inc.*	693	6.6x	4.8x	3.5x	NEG	NEG	>50	NEG	NEG	NEG
Lightspeed Commerce Inc*	1,740	3.7x	2.5x	1.9x	NEG	NEG	NEG	NEG	NEG	NEG
Veeva Systems Inc Class A	23,580	16.1x	11.1x	9.6x	>50	28.1x	24.2x	>50	40.5x	35.9x
Shopify, Inc. Class A	33,075	7.2x	6.0x	4.9x	>50	NEG	>50	13.3x	NEG	NEG
Q4 Inc*	87	1.6x	1.6x	1.5x	NEG	NEG	NEG	NEG	NEG	NEG
Magnet Forensics, Inc.*	546	7.8x	5.8x	4.5x	29.3x	35.5x	20.0x	>50	>50	>50
Ceridian HCM Holding, Inc.	9,584	9.4x	7.8x	6.7x	>50	43.8x	35.3x	NEG	>50	>50
ServiceNow, Inc.	79,995	13.6x	10.9x	8.9x	>50	35.0x	28.0x	>50	>50	43.4x
Workday, Inc. Class A	37,103	8.6x	6.1x	5.1x	>50	23.8x	19.4x	NEG	43.9x	34.7x
Software As A Service Average		8.9x	6.8x	5.7x	29.4x	33.1x	26.5x	13.3x	42.2x	38.0x
Infrastructure Vendors										
Citrix Systems, Inc.	16,186	5.0x	4.9x	4.8x	23.0x	13.2x	13.1x	42.6x	>50	32.5x
Microsoft Corporation	1,755,706	10.4x	8.4x	7.4x	21.7x	16.9x	14.9x	29.7x	24.7x	21.6x
Infrastructure Vendors Average		7.7x	6.7x	6.1x	22.4x	15.0x	14.0x	36.1x	24.7x	27.1x
Software Average		7.1x	6.0x	5.2x	19.8x	22.3x	19.3x	25.4x	24.9x	25.0x

*Share Price Converted to USD

Source: FactSet and CIBC World Markets Inc.

Exhibit 5: 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	27,588	11.1x	10.7x	10.2x	18.4x	16.6x	15.7x	2.3x	2.1x	2.0x
TELUS International (CDA), Inc.	8,694	16.1x	14.0x	11.9x	28.9x	24.3x	19.3x	4.0x	3.4x	2.9x
Accenture Plc Class A	163,225	17.0x	13.9x	13.0x	29.0x	23.9x	21.5x	3.2x	2.6x	2.4x
Booz Allen Hamilton	14,987	16.8x	15.5x	14.7x	21.8x	22.0x	20.1x	1.9x	1.7x	1.6x
CACI International Inc Class A	8,513	11.5x	12.7x	11.8x	15.2x	15.4x	14.5x	1.4x	1.3x	1.3x
DXC Technology Co.	9,827	4.9x	4.0x	4.0x	NEG	7.8x	6.4x	0.6x	0.7x	0.7x
Genpact Limited	9,458	14.7x	12.1x	10.7x	23.8x	16.7x	14.9x	2.4x	2.2x	2.0x
International Business Machines	160,417	11.9x	10.3x	9.8x	19.7x	13.4x	12.5x	2.8x	2.7x	2.6x
Atos SE	2,649	2.5x	2.7x	2.5x	NEG	7.1x	4.0x	0.2x	0.2x	0.2x
Capgemini SE	32,927	11.4x	9.4x	8.7x	24.0x	15.2x	13.7x	1.8x	1.5x	1.4x
Sopra Steria Group SA	4,004	7.6x	6.6x	6.1x	14.6x	9.8x	9.0x	0.9x	0.8x	0.8x
Converge Technology Solutions Corp	1,319	14.0x	8.8x	7.1x	>50	37.2x	20.4x	0.9x	0.5x	0.5x
Business & IT Services Average		11.4x	10.2x	9.4x	21.7x	15.6x	13.8x	1.9x	1.7x	1.6x
HR Outsourcing										
		EV/EBITDA			P/E			EV/S		
Ceridian HCM Holding, Inc.	9,584	>50	43.8x	35.3x	NEG	>50	>50	9.4x	7.8x	6.7x
Willis Towers Watson	23,314	10.4x	9.9x	9.1x	6.3x	15.1x	13.2x	2.6x	2.6x	2.5x
Aon Plc Class A	67,168	17.5x	16.7x	15.6x	49.2x	20.7x	18.8x	5.5x	5.3x	5.0x
Automatic Data Processing, Inc.	97,851	25.5x	21.5x	19.3x	38.0x	30.7x	27.2x	6.5x	5.7x	5.3x
Paychex, Inc.	42,069	25.5x	19.6x	18.3x	38.9x	29.6x	27.5x	10.4x	8.7x	8.2x
HR Outsourcing Average		19.7x	22.3x	19.5x	33.1x	24.0x	21.7x	6.9x	6.0x	5.5x
Information Services										
		EV/EBITDA			P/E			EV/S		
Broadridge Financial Solutions, Inc.	22,605	19.4x	17.3x	16.1x	34.4x	23.7x	21.8x	4.4x	3.8x	3.6x
Dye & Durham Ltd.	1,856	11.7x	11.7x	8.2x	>50	>50	20.2x	4.9x	3.3x	2.8x
Deluxe Corporation	2,218	6.0x	5.3x	5.2x	12.1x	4.4x	4.1x	1.1x	1.0x	1.0x
Information Services Corp	415	6.1x	6.4x	6.3x	11.2x	11.0x	11.6x	2.5x	2.2x	2.1x
Information Services Average		10.8x	10.2x	9.0x	19.3x	13.0x	14.4x	3.2x	2.6x	2.4x
Financial Services Technology										
		EV/EBITDA			P/E			EV/S		
Fidelity National Information Services	67,779	11.1x	10.4x	9.6x	>50	11.4x	10.2x	4.9x	4.6x	4.3x
Fiserv, Inc.	84,835	15.3x	11.8x	10.9x	>50	15.4x	13.5x	5.2x	5.1x	4.7x
Jack Henry & Associates, Inc.	13,901	20.0x	22.0x	20.2x	45.7x	37.5x	35.1x	7.9x	6.9x	6.4x
ACI Worldwide, Inc.	3,459	9.4x	8.6x	8.0x	19.9x	16.0x	13.7x	2.5x	2.4x	2.3x
Temenos AG	5,923	10.8x	12.4x	11.3x	28.5x	17.0x	15.2x	6.1x	5.7x	5.2x
Global Payments Inc.	43,971	12.0x	11.2x	10.1x	36.7x	12.8x	11.1x	5.2x	5.4x	5.0x
Financial Services Technology Average		13.1x	12.7x	11.7x	32.7x	18.3x	16.5x	5.3x	5.0x	4.7x
Diversified Real Estate Services										
		EV/EBITDA			P/E			EV/S		
Colliers International Group Inc.	5,471	10.0x	8.3x	7.4x	-11.7x	14.0x	12.8x	1.3x	1.2x	1.1x
Altus Group Limited	2,277	22.0x	21.5x	18.1x	32.1x	32.1x	33.9x	3.7x	3.7x	3.2x
CBRE Group, Inc. Class A	25,218	11.8x	8.1x	7.9x	13.5x	11.8x	11.7x	0.9x	0.8x	0.7x
Jones Lang LaSalle Incorporated	9,403	6.4x	6.5x	6.4x	8.5x	8.2x	7.8x	0.5x	0.4x	0.4x
Diversified Real Estate Services Average		12.6x	11.1x	9.9x	10.6x	16.5x	16.5x	1.6x	1.5x	1.4x
Software Focused IT Solutions/VARs										
		EV/EBITDA			P/E			EV/S*		
Softchoice Corporation* USD	966	39.6x	11.6x	9.6x	NEG	21.1x	16.1x	3.6x	3.0x	2.7x
Softcat Plc*	2,251	13.4x	14.1x	13.4x	18.0x	19.4x	19.2x	6.0x	6.1x	5.5x
Crayon Group Holding ASA*	8,563	>50	>50	>50	>50	>50	>50	>50	21.2x	18.0x
Bytes Technology Group Plc*	947	19.5x	15.7x	14.1x	38.6x	22.1x	21.1x	NA	NA	NA
SoftwareONE Holding Ltd.*	1,167	7.1x	4.9x	4.3x	12.6x	12.4x	11.3x	5.6x	1.2x	1.0x
Bytes Technology Group Plc* Average		19.9x	11.6x	10.3x	23.1x	18.8x	16.9x	5.1x	7.9x	6.8x
Business Services Average		13.8x	12.7x	11.4x	23.3x	17.5x	16.0x	3.7x	3.7x	3.4x

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

Source: FactSet and CIBC World Markets Inc.

Exhibit 6: 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		
								C21E	C22E	C23E
Tier 1 SaaS (Rule of 40 > 60)										
Zoom Video Communications	18%	31%	6%	27%	49%	33%	17,279	6.5x	4.0x	4.0x
CrowdStrike Holdings, Inc.	61%	30%	43%	29%	91%	72%	38,278	43.8x	17.7x	17.7x
Shopify, Inc.	30%	1%	21%	-9%	31%	12%	32,243	7.0x	5.9x	5.9x
Zscaler, Inc.	61%	22%	41%	22%	83%	63%	23,902	35.5x	18.9x	18.9x
Lightspeed POS, Inc.	101%	-19%	33%	-5%	82%	28%	1,826	8.2x	2.6x	2.6x
DocuSign, Inc.	37%	24%	14%	16%	61%	30%	11,042	7.6x	4.5x	4.5x
Veeva Systems Inc	20%	38%	15%	37%	58%	53%	23,580	16.1x	11.1x	11.1x
Atlassian Corp. Plc	34%	27%	28%	22%	61%	50%	59,079	28.3x	18.5x	18.5x
Twilio, Inc.	51%	-6%	28%	-3%	45%	25%	9,259	3.3x	2.4x	2.4x
ServiceNow, Inc.	28%	31%	23%	30%	58%	53%	79,995	13.6x	10.9x	10.9x
HubSpot, Inc.	42%	16%	23%	12%	58%	35%	13,118	10.1x	7.7x	7.7x
Tier 1 SaaS (Rule of 40 > 60) Average								16.4x	9.5x	9.5x
	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%	36%	-4%	48%	32%	709	6.8x	4.9x	3.6x
Qualys, Inc.	17%	40%	18%	36%	56%	55%	5,327	12.9x	10.9x	10.9x
Descartes Systems	22%	39%	10%	36%	61%	46%	5,459	12.9x	11.1x	10.0x
Avalara Inc	33%	3%	21%	3%	36%	24%	7,606	10.9x	8.8x	8.8x
Five9, Inc.	34%	-4%	23%	7%	30%	30%	5,942	9.7x	7.6x	7.6x
Dropbox, Inc.	11%	33%	6%	34%	44%	40%	8,198	3.8x	3.5x	3.5x
Wix.com Ltd.	16%	-1%	8%	4%	15%	12%	4,343	3.4x	3.1x	3.1x
Workday, Inc.	22%	21%	19%	20%	43%	39%	37,103	8.6x	6.1x	6.1x
VMware, Inc.	7%	24%	7%	29%	31%	35%	57,071	4.9x	4.2x	4.2x
Tier 2 SaaS (Rule of 40 b/w 40-60) Average								8.2x	6.7x	6.4x
	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%	22%	6%	30%	28%	3,681	8.6x	7.0x	7.0x
Zendesk, Inc.	30%	12%	21%	14%	42%	35%	9,634	7.2x	5.7x	5.7x
MongoDB, Inc.	54%	-2%	25%	2%	52%	27%	13,802	23.4x	11.7x	11.7x
LivePerson, Inc.	19%	-27%	5%	-4%	-8%	1%	799	1.7x	1.5x	1.5x
Rapid7 Inc.	33%	5%	23%	11%	38%	35%	3,580	6.7x	5.2x	5.2x
Paylocity Holding Corp.	34%	16%	28%	15%	50%	43%	13,712	21.6x	14.1x	14.1x
Q2 Holdings, Inc.	18%	0%	18%	3%	18%	21%	2,266	4.5x	3.9x	3.9x
Akamai Technologies, Inc.	7%	24%	3%	21%	31%	24%	15,101	4.4x	4.2x	4.2x
Tier 3 SaaS (Rule of 40 b/w 28-40) Average								9.8x	6.7x	6.7x
	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%	22%	9%	40%	30%	5,293	3.3x	2.6x	2.6x
Teradata Corporation	-3%	19%	-3%	23%	16%	20%	3,164	1.7x	1.8x	1.8x
Zuora, Inc.	15%	4%	13%	0%	19%	13%	854	2.8x	2.2x	2.2x
New Relic, Inc.	20%	3%	17%	1%	23%	18%	3,580	5.4x	4.0x	4.0x
Kinaxis, Inc.	35%	7%	23%	9%	42%	32%	2,659	10.6x	7.4x	6.5x
Yext, Inc.	10%	1%	2%	-1%	11%	1%	445	1.3x	1.1x	1.1x
Splunk Inc.	26%	7%	21%	14%	33%	35%	15,772	7.1x	4.7x	4.7x
Tier 4 SaaS (Rule of 40 <28) Average								4.6x	3.4x	3.3x
SaaS Average								10.4x	6.9x	6.8x

Source: FactSet and CIBC World Markets Inc.

Important Disclosures

Analyst Certification: Each CIBC World Markets Inc. research analyst named on the front page of this research report, or at the beginning of any subsection hereof, hereby certifies that (i) the recommendations and opinions expressed herein accurately reflect such research analyst's personal views about the company and securities that are the subject of this report and all other companies and securities mentioned in this report that are covered by such research analyst and (ii) no part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by such research analyst in this report.

Potential Conflicts of Interest: Equity research analysts employed by CIBC World Markets Inc. are compensated from revenues generated by various CIBC World Markets Inc. businesses, including the CIBC World Markets Investment Banking Department. Research analysts do not receive compensation based upon revenues from specific investment banking transactions. CIBC World Markets Inc. generally prohibits any research analyst and any member of his or her household from executing trades in the securities of a company that such research analyst covers. Additionally, CIBC World Markets Inc. generally prohibits any research analyst from serving as an officer, director or advisory board member of a company that such analyst covers.

In addition to 1% ownership positions in covered companies that are required to be specifically disclosed in this report, CIBC World Markets Inc. may have a long position of less than 1% or a short position or deal as principal in the securities discussed herein, related securities or in options, futures or other derivative instruments based thereon.

Recipients of this report are advised that any or all of the foregoing arrangements, as well as more specific disclosures set forth below, may at times give rise to potential conflicts of interest.

CIBC World Markets Inc. does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that CIBC World Markets Inc. may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Analysts employed outside the U.S. are not registered as research analysts with FINRA. These analysts may not be associated persons of CIBC World Markets Corp. and therefore may not be subject to FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

CIBC World Markets Inc. Stock Rating System

Stock Ratings	Abbreviation	Description
Outperformer	OP	Stock is expected to outperform similar stocks in the coverage universe during the next 12-18 months.
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.
Tender	TR	Shareholders are advised to tender shares to a specific offer as we do not believe a superior offer will materialize.
Not Rated	NR	CIBC World Markets does not maintain an investment recommendation on the stock.
Restricted	R	CIBC World Markets is restricted (due to potential conflict of interest) from rating the stock.

Sector Ratings	Abbreviation	Description
Overweight	O	Sector is expected to outperform the broader market averages.
Marketweight	M	Sector is expected to equal the performance of the broader market averages.
Underweight	U	Sector is expected to underperform the broader market averages.
None	NA	Sector rating is not applicable.

Note: Broader market averages refer to S&P 500 in the U.S. and S&P/TSX Composite in Canada.

CIBC World Markets Inc. Price Chart

For price and performance charts, please visit CIBC on the web at <https://researchcentral.cibccm.com/#/disclaimer-central-new> or write to CIBC World Markets Inc., 161 Bay Street, 4th Floor, Toronto, ON M5H 2S8, Attn: Research Disclosure Chart Request.

Important Disclosure Footnotes

For important disclosure footnotes for companies mentioned in this report that are covered by CIBC World Markets Inc., click here: [CIBC Disclaimers & Disclosures](#)

Ratings Distribution*: CIBC World Markets Inc. Coverage Universe

(as of 23 Sep 2022)	Count	Percent	Inv. Banking Relationships	Count	Percent
Outperformer	164	52%	Outperformer	164	100%
Neutral	136	43%	Neutral	136	100%
Underperformer	7	2%	Underperformer	7	100%
Tender	3	1%	Tender	2	67%
Restricted	3	1%	Restricted	3	100%

Important disclosures for each issuer can be found by visiting the Research Central website at <https://researchcentral.cibccm.com/#/disclaimer-central-new> and then entering the issuer name. Access to our research dissemination policy can be found on the same website at <https://researchcentral.cibccm.com/#/dissemination-policy>. These important disclosures can also be obtained by writing to CIBC World Markets Inc., 161 Bay Street, 4th Floor, Toronto, ON M5H 2S8, Attention: Research Disclosures Request.

Access to CIBC Equity Research

Clients may access CIBC Equity Research online at Research Central at <https://researchcentral.cibccm.com/>, or at the following research aggregators: Bloomberg, Refinitiv, Capital IQ, and FactSet.

Legal Disclaimer

This report is issued by CIBC Capital Markets.

CIBC Capital Markets is a trademark brand name under which Canadian Imperial Bank of Commerce (“CIBC”), its subsidiaries and affiliates (including, without limitation, CIBC World Markets Inc., CIBC World Markets Corp. and CIBC Capital Markets (Europe) S.A.) provide different products and services to our customers around the world. Products and/or services offered by CIBC include corporate lending services, foreign exchange, money market instruments, structured notes, interest rate products and OTC derivatives. CIBC’s Foreign Exchange Disclosure Statement relating to guidelines contained in the FX Global Code can be found at <https://cibccm.com/en/disclosures/fx-disclosure-statement/>. Other products and services, such as exchange-traded equity and equity options, fixed income securities and futures execution of Canadian securities, are offered through directly or indirectly held subsidiaries of CIBC as indicated below.

CIBC World Markets Inc. is a member of the Canadian Investor Protection Fund and the Investment Industry Regulatory Organization of Canada. In the United States, CIBC World Markets Corp. is a member of the Financial Industry Regulatory Authority and the Securities Investor Protection Fund. In Luxembourg, CIBC Capital Markets (Europe) S.A. (RCS Luxembourg: B236326) is authorised by the European Central Bank (the “ECB”) and supervised by the Luxembourg Financial Supervisory Authority (Commission de Surveillance du Secteur Financier) under the oversight of the ECB. CIBC Australia Ltd (AFSL No: 240603) is regulated by the Australian Securities and Investment Commission (“ASIC”). CIBC World Markets (Japan) Inc. is a member of the Japanese Securities Dealer Association. CIBC (TSX/NYSE: CM) is a bank chartered under the Bank Act (Canada) having its registered office in Toronto, Ontario, Canada, and regulated by the Office of the Superintendent of Financial Institutions. CIBC New York Branch is licensed and supervised by the New York State Department of Financial Services. In the United Kingdom, CIBC London Branch is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Canadian Imperial Bank of Commerce, Sydney Branch (ABN: 33 608 235 847) is an authorised foreign bank branch regulated by the Australian Prudential Regulation Authority (APRA). Canadian Imperial Bank of Commerce, Hong Kong Branch is a registered institution under the Securities and Futures Ordinance, Cap 571, and a limited liability foreign company registered with the Hong Kong Companies Registry. Canadian Imperial Bank of Commerce, Singapore Branch is a wholesale bank licensed and regulated by the Monetary Authority of Singapore.

This report is issued and approved for distribution by (a) in Canada, CIBC World Markets Inc., a member of the Investment Industry Regulatory Organization of Canada (“IIROC”), the Toronto Stock Exchange, the TSX Venture Exchange and a Member of the Canadian Investor Protection Fund and (b) in the United States either by (i) CIBC World Markets Inc. for distribution only to U.S. Major Institutional Investors (“MII”) (as such term is defined in SEC Rule 15a-6) or (ii) CIBC World Markets Corp., a member of the Financial Industry Regulatory Authority (“FINRA”). U.S. MIIs receiving this report from CIBC World Markets Inc. (the Canadian broker-dealer) are required to effect transactions (other than negotiating their terms) in securities discussed in the report through CIBC World Markets Corp. (the U.S. broker-dealer). CIBC World Markets Corp. accepts responsibility for the content of this research report.

Distribution to Institutional Customers Only

Canada

This report is provided, for informational purposes only, to institutional investor and retail clients of CIBC World Markets Inc. in Canada, and does not constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction where such offer or solicitation would be prohibited.

Legal Disclaimer (Continued)

United States

This report is provided, for informational purposes only, to Major US Institutional Investor clients of CIBC World Markets Corp. in the United States, and does not constitute an offer or solicitation to buy or sell any securities discussed herein in any jurisdiction where such offer or solicitation would be prohibited.

United Kingdom

The distribution of this report in the United Kingdom is being made only to, or directed only at, persons falling within one or more of the exemptions from the financial promotion regime in section 21 of the UK Financial Services and Markets Act 2000 (as amended) (“FSMA”) including, without limitation, to the following:

- authorised firms under FSMA and certain other investment professionals falling within article 19 of the FSMA (Financial Promotion) Order 2005 (“FPO”) and directors, officers and employees acting for such entities in relation to investment;
- high value entities falling within article 49 FPO and directors, officers and employees acting for such entities in relation to investment; and
- persons who receive this presentation outside the United Kingdom.

The distribution of this report to any other person in the United Kingdom is unauthorised and may contravene FSMA. No person falling outside such categories should treat this report as constituting a promotion to them or rely or act on it for any purposes whatsoever.

This report is distributed solely to eligible counterparties or professional clients and not retail clients as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of UK domestic law by virtue of the European Union (Withdrawal) Act 2018.

All other jurisdictions

This report is distributed solely to institutional clients and not retail clients as defined by the applicable securities legislation and regulation to which CIBC Capital Markets may be subject in any jurisdiction, and only in compliance with all applicable laws and regulations.

The securities mentioned in this report may not be suitable for all types of investors. This report does not take into account the investment objectives, financial situation or specific needs of any particular client of CIBC World Markets. Recipients should consider this report as only a single factor in making an investment decision and should not rely solely on investment recommendations contained herein, if any, as a substitution for the exercise of independent judgment of the merits and risks of investments. The analyst writing the report is not a person or company with actual, implied or apparent authority to act on behalf of any issuer mentioned in the report. Before making an investment decision with respect to any security recommended in this report, the recipient should consider whether such recommendation is appropriate given the recipient's particular investment needs, objectives and financial circumstances. CIBC World Markets suggests that, prior to acting on any of the recommendations herein, Canadian retail clients of CIBC World Markets contact one of our client advisers in your jurisdiction to discuss your particular circumstances. Non-client recipients of this report who are not institutional investor clients of CIBC World Markets should consult with an independent financial advisor prior to making any investment decision based on this report or for any necessary explanation of its contents. CIBC World Markets will not treat non-client recipients as its clients solely by virtue of their receiving this report.

Legal Disclaimer (Continued)

Past performance is not a guarantee of future results, and no representation or warranty, express or implied, is made regarding future performance of any security mentioned in this report. The price of the securities mentioned in this report and the income they produce may fluctuate and/or be adversely affected by exchange rates, and investors may realize losses on investments in such securities, including the loss of investment principal. CIBC World Markets accepts no liability for any loss arising from the use of information contained in this report, except to the extent that liability may arise under specific statutes or regulations applicable to CIBC World Markets.

Information, opinions and statistical data contained in this report were obtained or derived from sources believed to be reliable, but CIBC World Markets does not represent that any such information, opinion or statistical data is accurate or complete (with the exception of information contained in the Important Disclosures section of this report provided by CIBC World Markets or individual research analysts), and they should not be relied upon as such. All estimates, opinions and recommendations expressed herein constitute judgments as of the date of this report and are subject to change without notice.

Nothing in this report constitutes legal, accounting or tax advice. Since the levels and bases of taxation can change, any reference in this report to the impact of taxation should not be construed as offering tax advice on the tax consequences of investments. As with any investment having potential tax implications, clients should consult with their own independent tax adviser.

This report may provide addresses of, or contain hyperlinks to, Internet web sites. CIBC World Markets has not reviewed the linked Internet web site of any third party and takes no responsibility for the contents thereof. Each such address or hyperlink is provided solely for the recipient's convenience and information, and the content of linked third party web sites is not in any way incorporated into this document. Recipients who choose to access such third-party web sites or follow such hyperlinks do so at their own risk.

Although each company issuing this report is a wholly owned subsidiary of CIBC, each is solely responsible for its contractual obligations and commitments, and any securities products offered or recommended to or purchased or sold in any client accounts (i) will not be insured by the Federal Deposit Insurance Corporation ("FDIC"), the Canada Deposit Insurance Corporation or other similar deposit insurance, (ii) will not be deposits or other obligations of CIBC, (iii) will not be endorsed or guaranteed by CIBC, and (iv) will be subject to investment risks, including possible loss of the principal invested. CIBC Capital Markets and the CIBC Logo Design are trademarks of CIBC, used under license.

© 2022 CIBC World Markets Inc., CIBC World Markets Corp. and CIBC Capital Markets (Europe) S.A. All rights reserved. Unauthorised use, distribution, duplication or disclosure without the prior written permission of CIBC World Markets is prohibited by law and may result in prosecution.