

EQUITY RESEARCH

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

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

May 3, 2023

Industry Update

Is Big Tech M&A Dead? Bits & Bytes Weekly

Erin Kyle, CPA
+1 416-313-9851
Erin.Kyle@cibc.com

International Regulatory Reviews Slow M&A

Sector:
Information Technology

Our Conclusion

Last week, the UK antitrust regulator blocked Microsoft's \$69B purchase of Activision Blizzard, one of the largest potential tech deals in recent years. In a statement released last Wednesday, the Competition and Markets Authority (CMA) stated that it was worried the deal would lead to "reduced innovation and less choice for UK gamers over the years to come". Microsoft has said that it will appeal the CMA decision, although the appeals process sets a relatively high bar, focusing primarily whether the regulator acted rationally and lawfully. The European Union is also currently evaluating the transaction, and in December, the US Federal Trade Commission (FTC) sued to block the takeover on similar concerns.

The U.S. has historically lagged Europe when it comes to technology regulation, on everything from online news funding to M&A to security and privacy concerns. However, the FTC's complaint was filed not long after the CMA launched its in-depth review of the Activision deal. In fact, regulatory reviews of large technology deals have been increasing across the US, with the FTC recently attempting to block Meta's purchase of Within, the maker of a virtual reality fitness app. Although we have yet to see significant US legislative changes, the tone appears to be shifting, potentially setting the stage for additional tech regulation.

Key Points

Microsoft Blocked From Buying Activision: Last week, the UK antitrust regulator blocked Microsoft's purchase of Activision Blizzard, one of the largest potential tech deals in recent years, valued at \$69B. The blocking of the Activision acquisition came as a surprise to the market, as the transaction was expected to be approved by the CMA.

Broadcom's Acquisition Of VMware Under Review: The blocking of the Activision acquisition has led investors to question if any large deal initiated by a mega-cap tech company will be approved. Broadcom's proposed mega acquisition of VMware, a leading enterprise software company, which was announced in May 2022, is also under review by several regulatory bodies.

FTC Cracking Down: While the passing of antitrust legislation in the US remains a relatively slow-moving bipartisan issue, the FTC continues to take swings at Big Tech. Beyond reviews into mega-cap M&A, the FTC is also investigating Big Tech's expansions in artificial intelligence (AI). On April 25, FTC Chair Khan and officials from the Department of Justice (DOJ), the Consumer Financial Protection Bureau (CFPB) and the US Equal Employment Opportunity Commission (EEOC) released a joint statement on AI, outlining a commitment to enforce their respective laws and regulations to promote responsible innovation in automated systems. The timing of said statement coincides with the recent AI frenzy last week as big tech reported quarterly earnings.

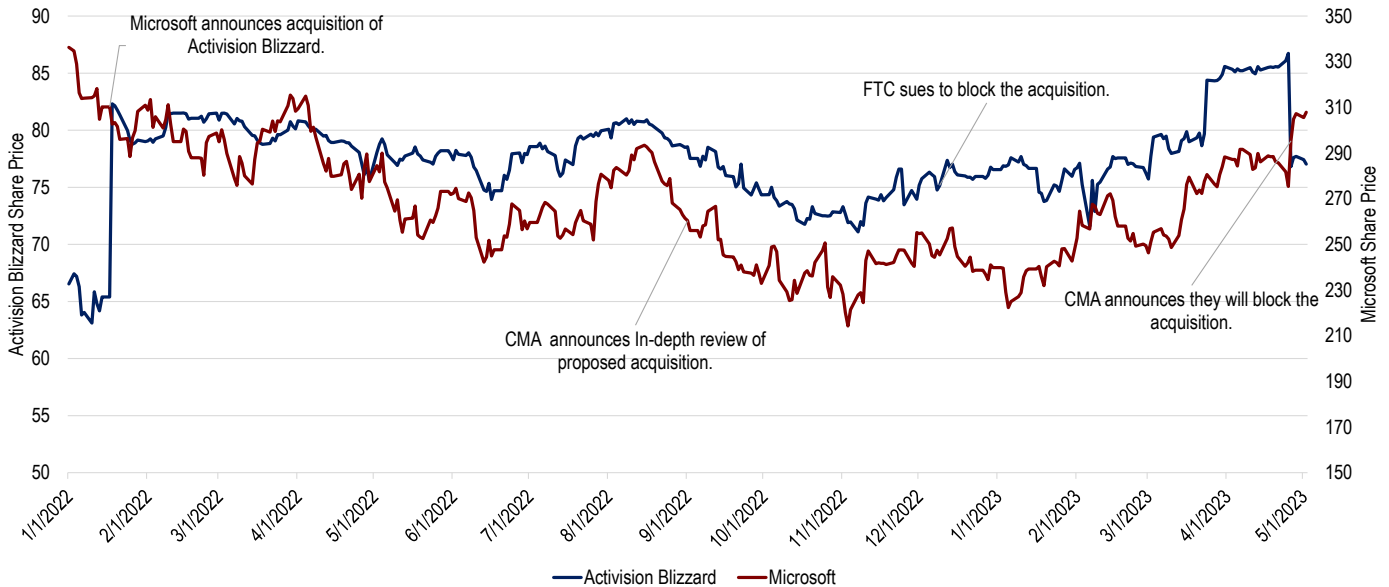
All figures in U.S. dollars unless otherwise stated.

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

Technology Regulation: Is The US Catching Up To Europe?

Last week, the UK antitrust regulator blocked Microsoft’s \$69B purchase of Activision Blizzard, one of the largest potential tech deals in recent years. The blocking of the Activision acquisition came as a surprise to the market, as the transaction was expected to be approved by the CMA, as reported by Financial Times articles published earlier last week. As a result, Activision Blizzard’s share price dropped 11% on the day of announcement, while Microsoft’s share price gained 7%. The line graph in Exhibit 1 highlights the movements in Microsoft’s and Activision Blizzard’s share prices since the acquisition was first announced, to the date the CMA announced it would block the transaction.

Exhibit 1: Microsoft & Activision Blizzard Share Price, January 1, 2022-May 2, 2023



Source: FactSet and CIBC World Markets Inc.

The blocking of the Activision acquisition has led investors to question whether any large deal initiated by a mega-cap tech company will be approved. The U.S. has historically been behind Europe when it comes to technology regulation, on everything from online news funding to M&A to security and privacy concerns. Despite the fact that the US Congress has held many hearings on the power and reach of technology companies (see the \$5B penalty and new privacy restrictions imposed on Facebook (Meta) in 2019), little has been done in the form of legislation to address the ongoing concerns surrounding technology regulation. However, this narrative may be beginning to shift, given increasing consumer sentiment towards more big tech regulation, coupled with President Biden’s calls for antitrust laws to rein in Big Tech. At the State of The Union address in February 2023, Biden called for lawmakers to “pass the bipartisan legislation to strengthen anti-trust enforcement and prevent big online platforms from giving their own products an unfair advantage”.

Based on a study conducted by Pew Research in 2021 (see chart, Exhibit 2), 55% of Americans were of the view that the government should not allow tech companies to grow beyond a certain size, even if they follow the rules. More liberal-leaning individuals showed stronger views towards limiting the size of major tech companies. Results from the same study also showed that overall, 68% of adults believe major tech companies have too much power and influence in today’s economy. A further 70% of this group said the government should regulate major tech companies more than they do currently, and 65% of this group said they should be limited from growing beyond a certain size.

Exhibit 2: Consumer Survey On Big Tech Dominance, 2021

55% of Americans say the government should limit major tech companies' ability to grow

% of U.S. adults who say ...



Majorities of Republicans and Democrats say major tech companies have too much power and influence in today's economy

% of U.S. adults who say major technology companies have ___ (of) power and influence in today's economy



Source: PEW Research Center.

News Impacting Our Coverage

Dye & Durham Enters 10-year Agreement With CentralSquare

Dye and Durham announced a renewed partnership with CentralSquare Technologies, entering into a 10-year agreement that expands Dye & Durham's integration of online government services. The new 10-year agreement provides more municipalities in Ontario and Alberta with access to Dye & Durham's Tax Certificate Online (TCOL) solution that has been available in British Columbia since 2007. The renewed partnership will also see further integration of CentralSquare's innovative solutions within the broader Dye & Durham technology ecosystem, driving greater efficiencies among government, businesses and citizens.

State of Iowa Announced Partnership With CGI

CGI announced the award of a contract by the State of Iowa to modernize the state's financial management systems using CGI Advantage. The contract builds on a 25-year collaboration between CGI and the State of Iowa for financial management and ERP.

HAVI And Kinaxis Join Forces To Provide Analytics For Quick Service Restaurants

Kinaxis announced a partnership with HAVI, a global supply chain company, to provide supply chain planning and analytics solutions for leaders in the Quick Service Restaurant (QSR) industry. HAVI and Kinaxis will leverage Kinaxis' RapidResponse platform and HAVI's four decades of supply chain expertise, and HAVI customers will be able to take advantage of predictive and prescriptive analytics using machine learning (ML) and AI.

Accenture To Accelerate Blue Yonder's Development & Delivery of New Solutions

Accenture announced that the company will be supporting Blue Yonder in the engineering and delivery of new solutions as part of a strategic expansion of their relationship. The companies will take their solutions and offerings to market together to joint clients. Accenture will work with clients to accelerate the adoption of Blue Yonder's solutions and will also provide Blue Yonder with access to research and development capabilities, helping it explore and advance the use of emerging technologies such as generative AI, process mining and robotics process automation.

Appen Teams With NVIDIA To Enable Customized AI Solutions

Appen Limited announced a collaboration with NVIDIA to combine Appen's data services with the NVIDIA AI Enterprise platform. Appen noted that its collaboration with NVIDIA will allow enterprise clients in different industries to transform customer interactions from traditional transactions to new AI-enabled experiences. The NVIDIA AI platform enables enterprises to create and deploy fully customizable and production-ready AI capabilities tailored to their specific data, demographics, and brand standards. Appen enhances this offering with data

sourcing, annotation and labeling, and a comprehensive suite of Reinforcement Learning with Human Feedback (RLHF) services.

Enhouse Renews Normal Course Issuer Bid

Enhouse Systems announced the renewal of the company's normal course issuer bid, which allows the company to purchase a maximum of 3 million common shares or ~7% of the publicly listed float. The bid will commence on May 2, 2023 and terminate on May 1, 2024. Enhouse reported that it is renewing the normal course issuer bid program because it believes that from time to time the market price of its common shares may be attractive and that at times the purchases of common shares is an appropriate use of corporate funds and is in the best interest of the company.

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

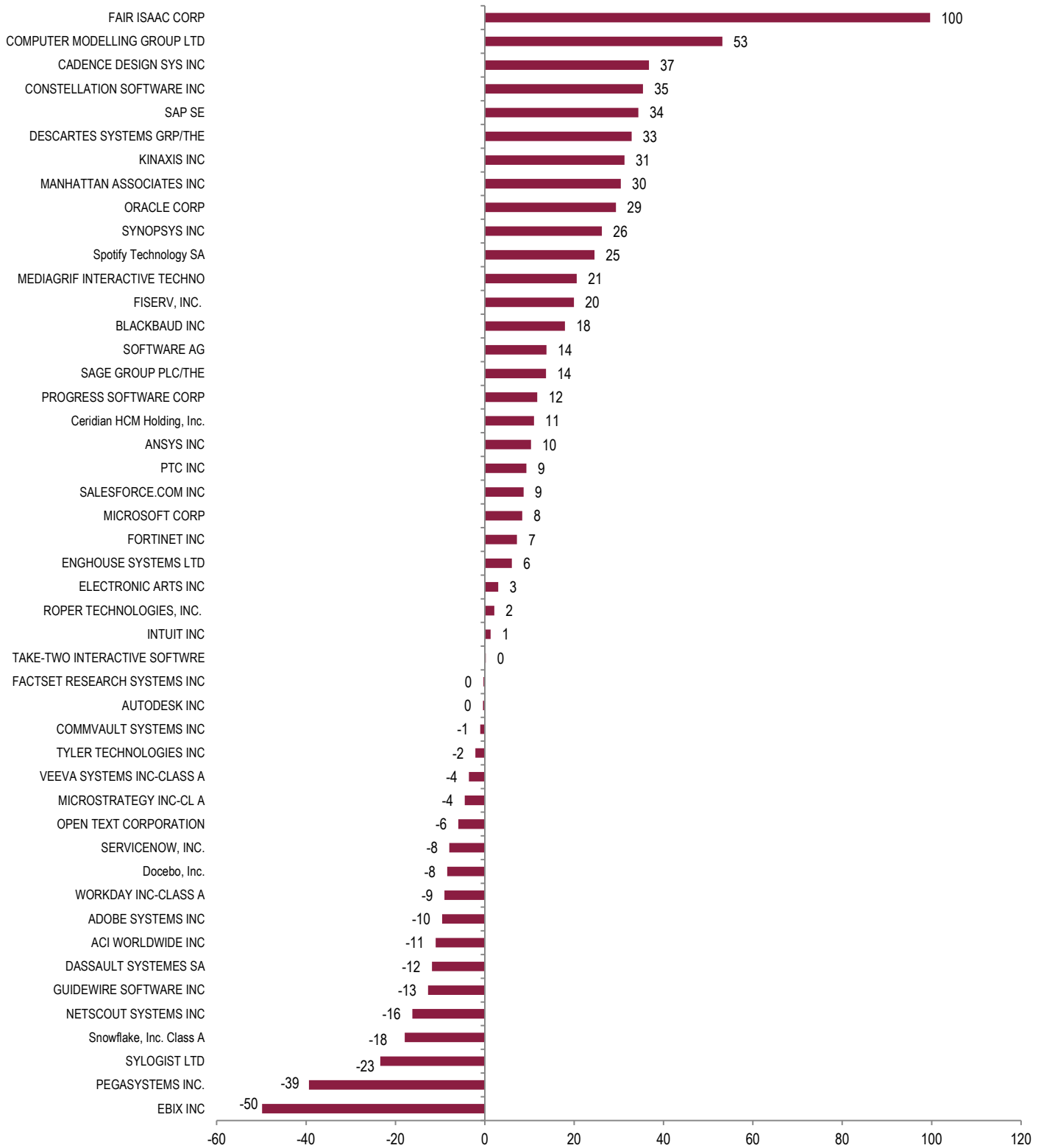
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,731.97	2.8	8.4	16.9	43.9	35.4	31.9	2750.63	1747.83
Descartes Systems	78.20	0.4	(2.2)	2.5	17.0	24.3	12.3	82.02	56.19
Enghouse Systems Limited	37.49	0.0	(2.7)	(8.3)	26.5	6.1	4.2	44.59	23.96
Open Text Corp	37.67	1.5	(2.0)	8.6	35.7	(5.9)	27.1	41.85	24.91
Kinaxis	185.16	3.0	0.3	14.3	28.3	31.2	21.9	190.31	119.48
Docebo, Inc.	52.39	7.3	(0.3)	(2.8)	42.8	(8.4)	17.1	60.29	31.66
Dye & Durham	14.11	(4.9)	(22.3)	(36.2)	(2.0)	(33.2)	(14.0)	24.68	11.62
Altus Group	52.97	(2.2)	(5.7)	(8.1)	12.1	5.9	(2.0)	61.60	41.27
Q4 Inc.	3.73	(1.1)	(4.4)	50.4	14.8	NA	16.2	5.04	1.88
Average		0.8	(3.4)	4.1	24.3	6.9	12.7		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	139.47	0.9	6.3	14.3	30.2	33.0	19.5	139.34	95.45
Converge Technologies	3.22	(3.9)	(20.5)	(45.6)	(36.0)	(61.8)	(29.8)	8.69	3.12
Information Services Corp	22.36	0.5	0.6	1.2	(0.8)	8.9	(7.5)	25.36	19.12
Softchoice Corporation	15.90	(1.6)	(11.7)	(12.1)	(7.1)	(31.7)	(12.9)	25.56	13.57
Telus International	27.05	(0.4)	0.2	(13.4)	(15.9)	(1.6)	1.2	40.55	24.11
Average		(1.3)	(6.4)	(14.2)	(7.2)	(15.5)	(5.5)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	20,394.58	0.1	0.6	(1.8)	6.0	(2.4)	5.2
S&P 500 Index	4,125.17	1.7	0.0	(0.3)	10.9	(1.2)	7.4
S&P/TSX Software Index	171.03	1.2	2.2	3.3	31.3	16.8	25.4
S&P500 Software Index	5,064.98	2.7	3.4	12.3	35.5	7.5	23.7

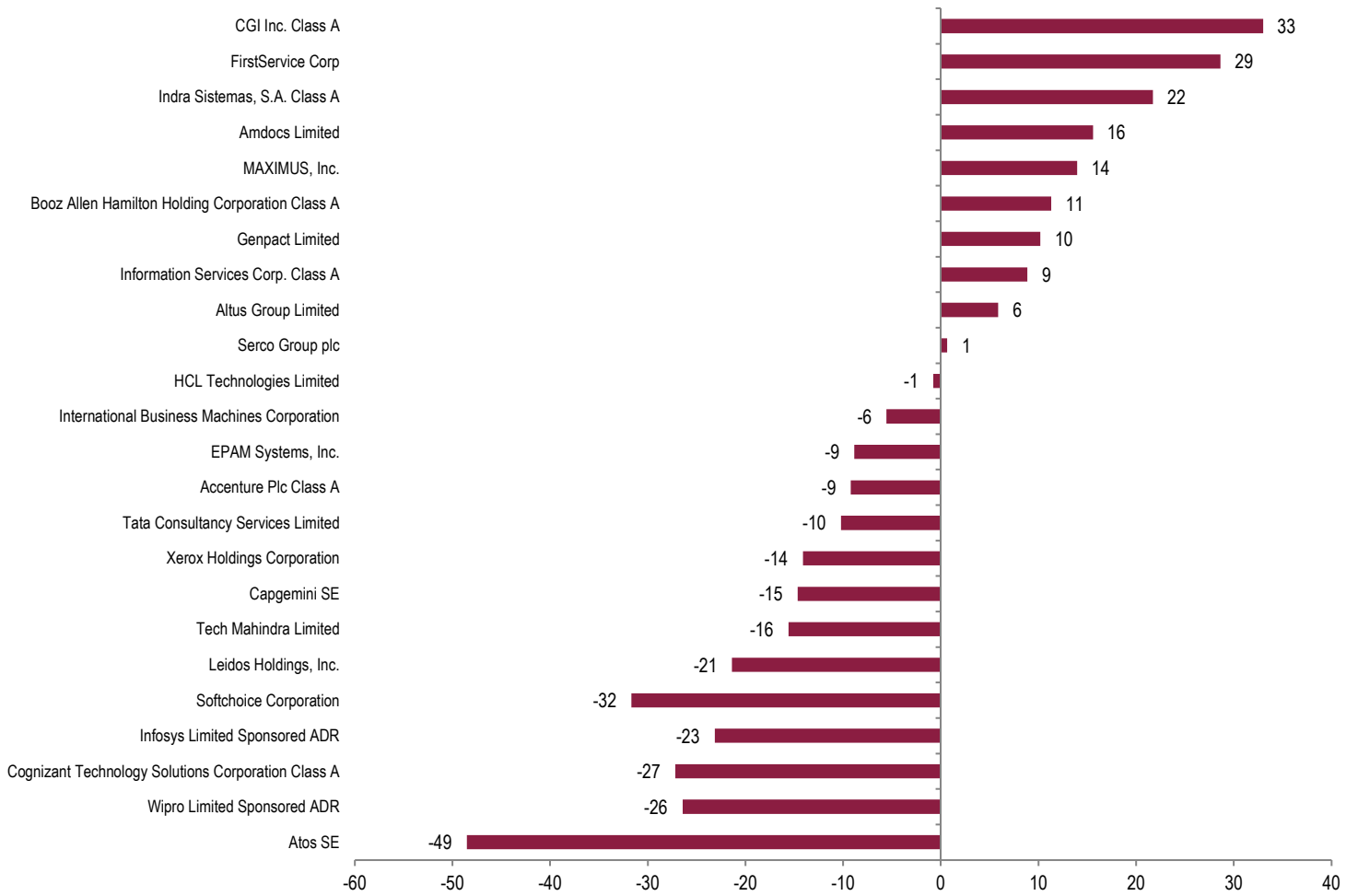
Source: Company reports, FactSet and CIBC World Markets Inc.

Exhibit 4: Software Stocks – Return Performance (%), 5/3/2022–5/3/2023



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

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



Source: Company reports, 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.*	43,851	6.6x	5.6x	4.9x	25.8x	21.8x	19.4x	35.1x	32.4x	28.4x
BlackBerry Limited*	2,394	3.6x	2.6x	2.3x	NEG	NEG	>50	NEG	NEG	NEG
Sage Group plc	9,128	4.6x	4.2x	3.9x	20.0x	17.8x	16.2x	30.8x	26.6x	23.9x
Tyler Technologies, Inc.	16,732	9.0x	8.6x	7.8x	35.2x	34.8x	31.2x	>50	49.9x	43.8x
Roper Technologies, Inc.	55,028	10.2x	9.1x	8.6x	25.1x	22.5x	21.0x	32.3x	28.3x	26.3x
Enghouse Systems Limited	1,839	4.3x	4.25x	4.19x	13.3x	13.7x	12.62x	18.9x	29.3x	26.00x
Oracle Corporation	313,525	6.7x	6.0x	5.6x	13.3x	11.9x	10.8x	19.0x	17.7x	15.8x
SAP SE	154,983	4.6x	4.9x	4.6x	19.6x	17.2x	15.0x	30.2x	23.5x	20.0x
Enterprise Application Software Average		6.2x	5.7x	5.2x	21.8x	20.0x	18.0x	27.7x	29.7x	26.3x
Extended ERP										
Adobe Incorporated	167,641	9.4x	8.6x	7.7x	19.3x	17.7x	16.0x	26.6x	23.5x	20.7x
Open Text Corporation	12,818	3.6x	2.3x	2.1x	10.3x	7.8x	5.5x	11.9x	14.7x	7.0x
Manhattan Associates, Inc.	10,190	13.3x	11.8x	10.6x	46.6x	44.0x	38.7x	>50	>50	>50
Pegasystems Inc.	4,053	3.1x	2.9x	2.7x	>50	23.6x	16.0x	>50	31.6x	20.6x
Software AG	2,678	2.8x	2.7x	2.5x	15.1x	15.4x	12.9x	36.5x	23.7x	19.5x
Fiserv, Inc.	94,888	5.7x	5.3x	4.9x	13.1x	12.0x	11.1x	18.4x	16.2x	14.2x
Extended ERP Average		6.3x	5.6x	5.1x	20.9x	20.1x	16.7x	23.3x	21.9x	16.4x
Software As A Service										
Descartes Systems Group Inc.	6,364	13.1x	11.6x	10.5x	29.6x	26.1x	23.1x	>50	>50	>50
Kinaxis, Inc.*	3,617	9.9x	8.4x	7.1x	45.5x	>50	44.5x	>50	>50	>50
Docebo, Inc.*	1,052	7.4x	5.7x	4.3x	>50	>50	33.6x	>50	>50	>50
Lightspeed Commerce Inc*	1,081	1.6x	1.3x	1.0x	NEG	NEG	31.6x	NEG	>50	46.6x
Veeva Systems Inc Class A	25,268	11.9x	10.8x	9.1x	29.9x	30.4x	24.6x	41.8x	41.1x	34.4x
Shopify, Inc. Class A	56,063	10.0x	8.4x	7.0x	>50	>50	>50	>50	>50	>50
Q4 Inc*	82	1.5x	1.5x	1.3x	NEG	NEG	NEG	NEG	NEG	NEG
Ceridian HCM Holding, Inc.	10,602	8.5x	7.1x	6.1x	42.3x	28.9x	23.3x	>50	>50	40.1x
ServiceNow, Inc.	88,325	12.2x	10.0x	8.2x	38.6x	32.2x	25.7x	>50	46.6x	38.2x
Workday, Inc. Class A	44,549	7.3x	6.3x	5.3x	28.4x	22.3x	18.6x	49.9x	36.7x	29.9x
Software As A Service Average		8.3x	7.1x	6.0x	35.7x	28.0x	28.1x	45.9x	41.5x	37.8x
Infrastructure Vendors										
Microsoft Corporation	2,244,515	11.0x	10.1x	9.0x	22.4x	20.4x	17.7x	32.5x	29.7x	25.8x
Infrastructure Vendors Average		11.0x	10.1x	9.0x	22.4x	20.4x	17.7x	32.5x	29.7x	25.8x
Software Average		7.3x	6.4x	5.7x	26.0x	22.1x	21.3x	29.5x	29.5x	26.7x

*Share Price Converted to USD

Note: Bolded names are covered by CIBC World Markets Inc, estimates ours. All other estimates are from FactSet.

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	35,820	14.5x	12.8x	12.4x	22.3x	20.0x	19.0x	2.7x	2.6x	2.5x
TELUS International (CDA), Inc.	6,262	10.3x	8.8x	7.6x	16.1x	16.0x	13.3x	2.5x	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	14,659	14.8x	13.8x	12.8x	21.0x	19.4x	17.4x	1.6x	1.5x	1.4x
CACI International Inc Class A	9,037	13.4x	12.3x	11.6x	17.1x	16.0x	14.4x	1.4x	1.3x	1.3x
DXC Technology Co.	8,858	3.7x	3.8x	3.9x	6.8x	6.1x	5.3x	0.6x	0.6x	0.6x
Genpact Limited	9,121	11.6x	10.6x	9.6x	16.0x	14.8x	13.2x	2.1x	2.0x	1.8x
International Business Machines	158,823	10.0x	10.7x	10.2x	13.7x	13.3x	12.5x	2.6x	2.6x	2.5x
Atos SE	3,149	3.2x	2.8x	2.7x	NEG	5.7x	4.1x	0.3x	0.3x	0.3x
Capgemini SE	34,098	9.7x	9.4x	8.7x	14.4x	14.6x	13.3x	1.6x	1.5x	1.4x
Sopra Steria Group SA	5,284	8.9x	7.8x	7.1x	14.4x	11.6x	10.2x	1.0x	0.9x	0.9x
Converge Technology Solutions Corp	934	6.5x	5.6x	5.2x	30.4x	19.3x	21.3x	0.4x	0.4x	0.4x
Business & IT Services Average		10.5x	9.8x	9.1x	16.7x	14.6x	13.1x	1.8x	1.6x	1.5x
HR Outsourcing										
		EV/EBITDA			P/E			EV/S		
Ceridian HCM Holding, Inc.	10,602	42.3x	28.9x	23.3x	>50	>50	40.1x	8.5x	7.1x	6.1x
Willis Towers Watson	28,394	11.9x	11.7x	10.5x	17.0x	15.8x	13.4x	3.2x	3.1x	2.9x
Aon Plc Class A	76,079	19.1x	17.5x	16.3x	24.0x	22.2x	19.8x	6.1x	5.7x	5.4x
Automatic Data Processing, Inc.	91,565	19.8x	17.8x	16.2x	28.5x	25.3x	22.8x	5.3x	5.0x	4.6x
Paychex, Inc.	38,423	17.9x	16.6x	15.4x	26.4x	24.1x	22.4x	7.9x	7.4x	7.0x
HR Outsourcing Average		22.2x	18.5x	16.4x	24.0x	21.9x	23.7x	6.2x	5.7x	5.2x
Information Services										
		EV/EBITDA			P/E			EV/S		
Broadridge Financial Solutions, Inc.	21,879	16.7x	15.4x	14.4x	22.9x	21.2x	19.4x	3.7x	3.5x	3.3x
Dye & Durham Ltd.	1,954	12.3x	11.1x	9.0x	0.1x	0.1x	0.1x	4.1x	4.1x	3.9x
Deluxe Corporation	1,982	4.7x	5.0x	4.8x	3.5x	4.7x	4.3x	0.9x	0.9x	0.9x
Information Services Corp	436	6.8x	6.7x	6.3x	11.1x	10.7x	9.9x	2.3x	2.2x	2.1x
Information Services Average		10.1x	9.6x	8.7x	9.4x	9.2x	8.4x	2.7x	2.7x	2.5x
Financial Services Technology										
		EV/EBITDA			P/E			EV/S		
Fidelity National Information Services	49,813	8.0x	8.2x	7.7x	8.0x	8.9x	8.2x	3.4x	3.4x	3.3x
Fiserv, Inc.	94,888	13.1x	12.0x	11.1x	18.4x	16.2x	14.2x	5.7x	5.3x	4.9x
Jack Henry & Associates, Inc.	11,852	18.8x	17.4x	16.1x	32.8x	31.5x	28.5x	5.9x	5.6x	5.2x
ACI Worldwide, Inc.	3,703	9.9x	9.6x	8.9x	19.9x	22.7x	18.4x	2.6x	2.6x	2.4x
Temenos AG	6,539	17.9x	17.0x	14.9x	27.4x	25.6x	22.1x	6.9x	6.6x	6.0x
Global Payments Inc.	39,085	10.0x	9.1x	8.4x	10.8x	9.7x	8.5x	4.8x	4.5x	4.2x
Financial Services Technology Average		13.0x	12.2x	11.2x	19.5x	19.1x	16.7x	4.9x	4.7x	4.3x
Diversified Real Estate Services										
		EV/EBITDA			P/E			EV/S		
Colliers International Group Inc.	5,810	9.2x	8.5x	7.8x	13.5x	13.6x	12.0x	1.3x	1.3x	1.2x
Altus Group Limited	2,530	18.7x	18.5x	14.5x	27.8x	25.8x	22.5x	3.4x	3.2x	2.9x
CBRE Group, Inc. Class A	25,522	8.7x	10.0x	8.8x	13.2x	15.6x	12.9x	0.8x	0.8x	0.8x
Jones Lang LaSalle Incorporated	8,959	7.2x	8.0x	6.9x	8.7x	10.0x	8.1x	0.4x	0.4x	0.4x
Diversified Real Estate Services Average		11.0x	11.3x	9.5x	15.8x	16.2x	13.9x	1.5x	1.4x	1.3x
Software Focused IT Solutions/VARs										
		EV/EBITDA			P/E			EV/S**		
Softchoice Corporation* USD	789	9.7x	9.0x	8.2x	14.6x	14.5x	12.9x	2.5x	2.4x	2.2x
Softcat Plc*	2,567	15.1x	13.6x	12.6x	20.2x	19.1x	18.0x	6.2x	5.3x	4.8x
Crayon Group Holding ASA*	8,909	>50	>50	>50	>50	>50	>50	20.1x	18.0x	15.5x
Bytes Technology Group Plc*	935	13.9x	12.4x	11.1x	18.7x	17.4x	15.7x	NA	NA	NA
Bytes Technology Group Plc* Average		12.9x	11.7x	10.6x	17.8x	17.0x	15.5x	9.6x	8.6x	7.5x
Business Services Average		13.0x	11.9x	10.7x	17.2x	16.1x	15.1x	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., estimates ours. All other estimates are from FactSet.

Source: Company reports, 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 03 May 2023)	Count	Percent	Inv. Banking Relationships	Count	Percent
Outperformer	148	50%	Outperformer	148	100%
Neutral	130	44%	Neutral	129	99%
Underperformer	7	2%	Underperformer	6	86%
Tender	0	0%	Tender	0	0%
Restricted	10	3%	Restricted	10	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.

© 2023 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.