

EQUITY RESEARCH

September 29, 2023

Industry Update

Can We Have Your Attention, Please – Bits & Bytes Weekly

The Importance Of Ad Revenue

Our Conclusion

The number of advertisements we see on our devices has been rising steadily over the last decade. With more and more apps competing for our attention, companies are now looking to monetize each subconscious glance at a device. Last month, ride-sharing app Lyft announced it would start displaying ads on a user’s ETA screen during their ride, similar to Uber’s in-ride advertising announced earlier this year. Everyone is now likely familiar with Netflix, Disney+ and HBO Max’s ad-supported tiers. Even recently listed Instacart owes some of its success to advertising, with ad revenue representing approximately one-third of the company’s total revenue. After a large slowdown last year, the digital ad market appears to be making a recovery.

Key Points

Two Minutes To Monetize: Uber advertising executive Mark Grether recently stated that Uber has “two minutes of your attention” per average 15-minute ride taken on its app. The company intends to use those two minutes to push targeted video ads to users, dubbed “Journey Ads.” Uber doesn’t plan to stop at just in-app advertisements; it also intends to install tablets in the seats of some Uber vehicles that will play ads to passengers during their ride. On the food-delivery side of its business, UberEats will play videos in-app after an order is placed. Whether or not users can skip these ads remains unclear. Ads are not new to Uber (Uber launched display ads on UberEats in 2019 and unveiled its in-app ad experience roughly one year ago), but the company may finally be seeing results. Uber reported its first-ever operating profit in Q2/23, helped by reaching annual run-rate advertising revenue of \$650 million.

“Ad Creep”: The infiltration of advertisements into previously ad-free spaces was given the term “ad-creep” in the 1990s when advertisements were just beginning to make their way into public restrooms and product placement was first being popularized. In today’s online world, “ad-creep” is much more prevalent, evidenced by Uber’s and Lyft’s attempts to monetize every minute individuals spend looking at their phones. Digital ads are now estimated to account for 69% of all ad revenue this year, according to a report from WPP’s GroupM.

The Biggest Advertising Firms Are Tech Companies: In 2022, Google reported advertising revenue of \$224 billion, followed by Meta at \$114 billion and Amazon at \$38 billion. Advertising revenue for these tech giants represented 80%, 97% and 7% of their total revenue, respectively. Advertising revenue is also estimated to comprise close to \$4 billion of Apple’s annual revenue and Netflix’s advertising revenue could grow to an estimated \$5 billion annually after the company introduced an ad-supported version of its streaming service.

All figures in U.S. unless otherwise stated.

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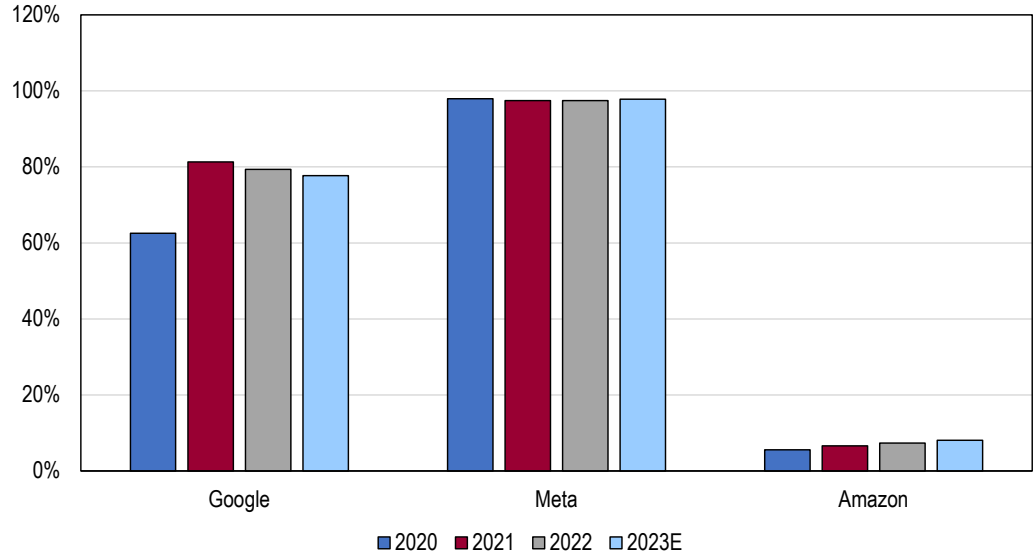
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Sector:
Information Technology

Advertising Revenue Is Material

Big tech results for the first half of 2023 seemed to indicate advertising revenue was making a comeback. Meta and Google reported a 12% and 3% increase in ad revenue in Q2, respectively. Ad revenue comprises a substantial portion of revenue for the tech giants, meaning it can make or break quarterly and annual results. The bar chart in Exhibit 1 illustrates the percentage of revenue from advertising for Google, Meta and Amazon since 2020. Advertising makes up almost 100% of Meta's revenue.

Exhibit 1: Google, Meta And Amazon – Advertising Revenue As A % Of Total Revenue, 2020 - 2023E



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

News Impacting Our Coverage

Cardinal Global Logistics Scales Customs Bureau With Descartes e-Customs Solution

Descartes announced that Cardinal Group Logistics has scaled its Customs Bureau using Descartes' e-Customs solution, allowing Cardinal to grow from manually processing 1,000 customer entries per month three years ago to managing 15,000 monthly entries today. Descartes' e-Customs solution is a web-based solution that helps filers submit data to HMRC and other government agencies.

Calian Group Wins Contracts With Shared Services Canada, Also Announces The Launch Of A Digital Health Portfolio

Calian Group announced that it won two contracts with Shared Services Canada (SSC) with a total estimated cost of \$17.6 million, with options for a potential value up to \$43.8 million. SSC delivers IT and digital services to Government of Canada organizations. Calian will support critical branches, including Networks and Security Services and Digital Services.

Calian also announced the addition of a digital health portfolio to its existing health solutions division. The digital health solutions division was established to capture opportunities across the healthcare landscape and serve Calian's growing client base. The digital health portfolio delivers services and software applications which improve access to high-quality care and transform the patient and user experience.

CGI Federal To Provide Financial Management Solutions And Services To U.S. Courts

CGI announced that CGI Federal was awarded with a 10-year indefinite delivery, indefinite quantity (IDIQ) contract from the Administrative Office of the U.S. Courts (AOUSC). Under the IDIQ contract, CGI will provide AOUSC with strategic consulting, advisory and application operations and management, hosting and support services. An initial task order for operations and maintenance, service desk support, and training services has been issued for a one-year base period and nine one-year options. The total task order value if all options are exercised is \$143.5 million.

Exhibit 2: CIBC Coverage – Price Returns, For The Period Ending September 29, 2023

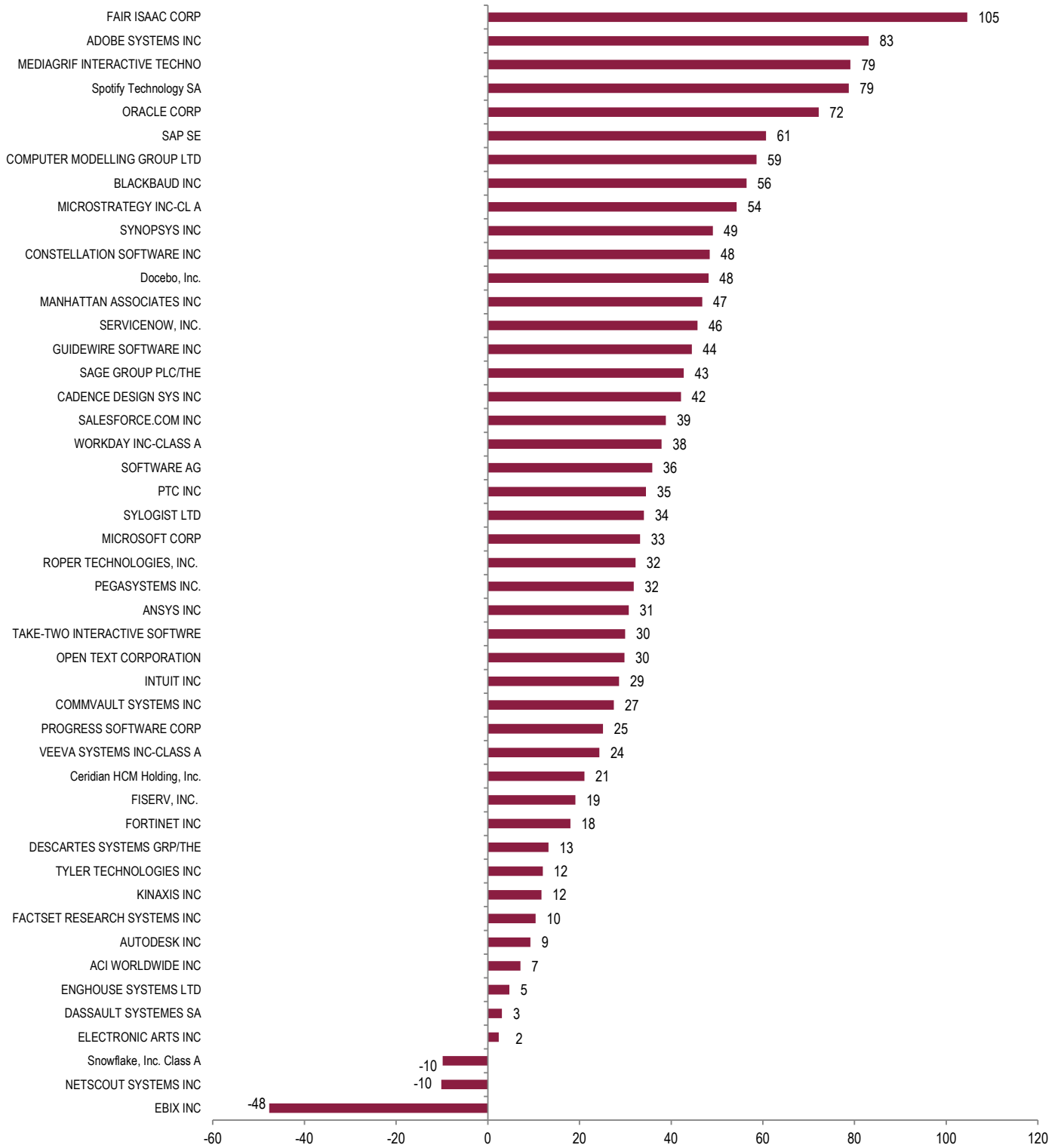
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,808.06	3.8	2.0	3.8	15.4	48.4	35.6	2905.40	1747.83
Descartes Systems	73.53	2.5	(2.6)	(6.2)	(6.1)	14.5	5.6	82.02	62.12
Enghouse Systems Limited	29.98	3.8	(0.1)	(6.2)	(21.8)	4.7	(16.7)	44.59	27.30
Open Text Corp	35.07	(1.4)	(11.5)	(14.0)	(6.8)	29.8	18.3	43.25	24.91
Kinaxis	151.47	(3.7)	(9.3)	(17.4)	(15.6)	11.7	(0.3)	191.80	129.65
Docebo, Inc.	55.08	0.1	(4.2)	8.2	4.3	48.1	23.1	62.95	31.66
Dye & Durham	13.37	(8.9)	(26.1)	(24.5)	(26.7)	(14.2)	(18.5)	23.14	11.62
Altus Group	47.18	(2.3)	(10.0)	8.6	(16.3)	5.6	(12.7)	61.60	40.00
Q4 Inc.	3.96	(1.8)	(2.9)	21.5	(4.8)	NA	23.4	4.45	1.88
Average		(0.9)	(7.2)	(2.9)	(8.7)	18.6	6.4		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	134.00	(0.9)	(4.7)	(2.6)	5.2	29.9	14.8	142.31	100.74
Converge Technologies	2.79	0.0	2.2	(10.6)	(30.3)	(57.1)	(39.2)	7.18	2.39
Information Services Corp	22.10	(4.6)	(9.4)	4.4	2.3	0.5	(8.6)	26.98	20.16
Softchoice Corporation	14.98	(2.7)	(11.6)	(11.1)	(11.5)	(27.7)	(18.0)	21.70	13.57
TELUS International	10.38	0.4	(13.7)	(47.3)	(61.5)	(72.0)	(61.2)	38.36	9.95
Average		(0.8)	(7.0)	(17.9)	(24.5)	(31.7)	(25.9)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	19,561.80	(1.1)	(3.6)	(1.8)	(1.4)	6.1	0.9
S&P 500 Index	4,275.81	(1.0)	(4.9)	(2.7)	6.2	17.5	11.4
S&P/TSX Software Index	178.92	1.6	(4.6)	(4.7)	9.4	46.2	31.2
S&P500 Software Index	5,427.46	(0.5)	(4.4)	(4.1)	13.3	36.1	32.5

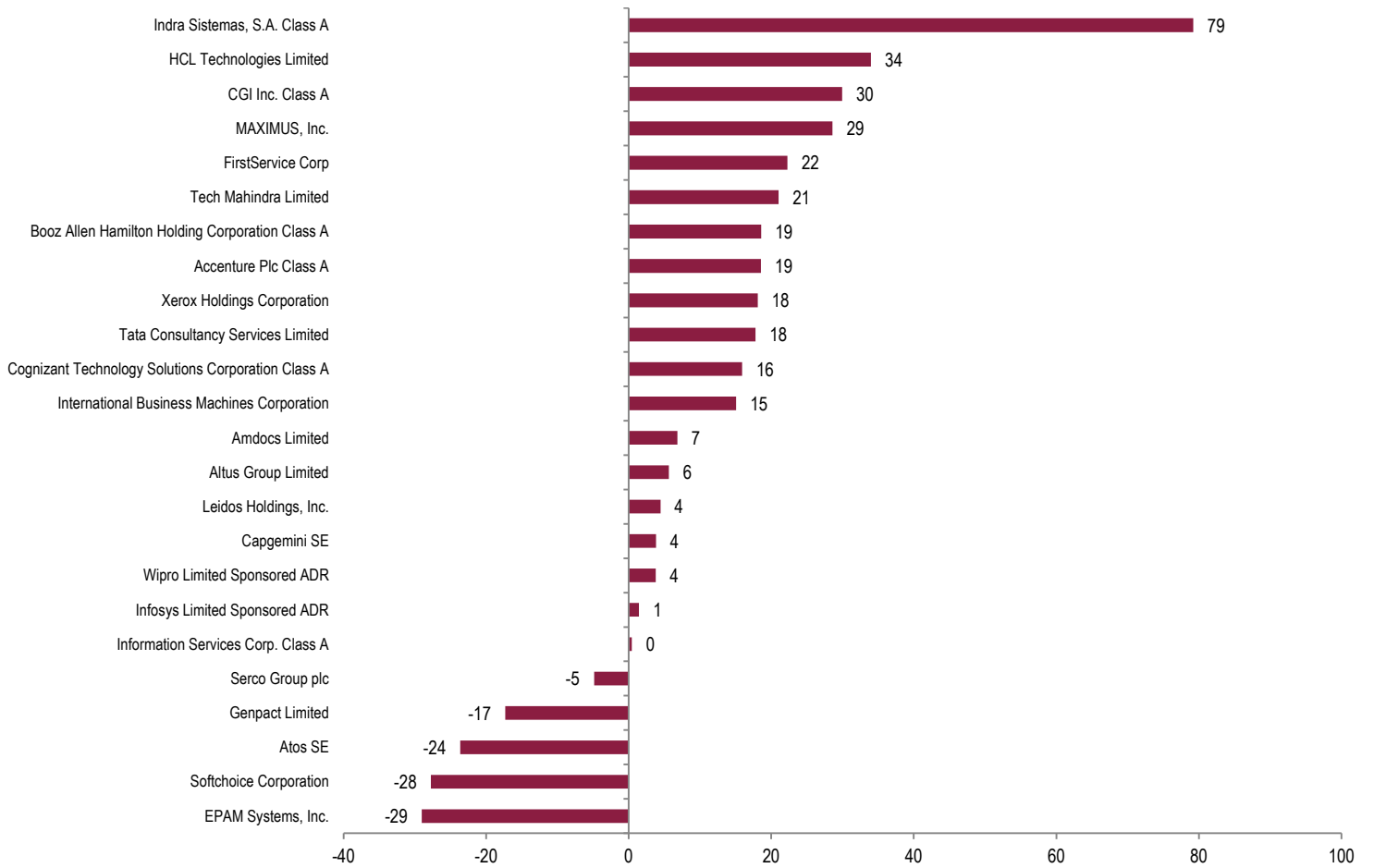
Source: Company reports, FactSet and CIBC World Markets Inc.

Exhibit 3: Software Stocks – Return Performance (%), 9/29/2022 - 9/29/2023



Source: Company reports and CIBC World Markets Inc.

Exhibit 4: Business Services Stocks – Return Performance (%), 9/29/2022 - 9/29/2023



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

Exhibit 5: 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.*	46,342	7.0x	5.7x	4.9x	27.3x	22.3x	18.6x	36.5x	38.8x	28.0x
BlackBerry Limited*	2,735	4.1x	2.4x	2.6x	NEG	>50	>50	NEG	NEG	NEG
Sage Group plc	10,886	5.4x	4.9x	4.5x	23.7x	20.7x	18.6x	36.7x	30.7x	27.4x
Tyler Technologies, Inc.	17,219	9.3x	8.8x	8.1x	36.2x	35.3x	31.2x	>50	>50	44.7x
Roper Technologies, Inc.	57,820	10.8x	9.5x	8.9x	26.4x	23.3x	21.7x	34.0x	29.4x	27.1x
Enghouse Systems Limited	1,420	3.3x	3.09x	2.99x	10.3x	10.7x	9.66x	15.1x	25.3x	21.11x
Oracle Corporation	374,738	8.0x	7.2x	6.7x	15.8x	14.3x	13.1x	21.0x	19.7x	17.7x
SAP SE	154,271	4.6x	5.0x	4.6x	19.5x	17.0x	14.8x	30.1x	23.9x	20.1x
Enterprise Application Software Average		6.6x	5.8x	5.4x	22.7x	20.5x	18.2x	28.9x	28.0x	26.6x
Extended ERP										
Adobe Incorporated	230,434	13.0x	11.8x	10.5x	26.4x	23.8x	21.6x	36.6x	31.7x	28.0x
Open Text Corporation	17,526	5.0x	3.2x	2.9x	14.1x	10.6x	7.6x	11.1x	10.7x	6.5x
Manhattan Associates, Inc.	11,955	15.6x	13.4x	12.0x	>50	49.0x	42.9x	>50	>50	>50
Pegasystems Inc.	4,016	3.0x	3.0x	2.7x	>50	22.9x	15.2x	>50	30.8x	19.6x
Software AG	2,561	2.7x	2.6x	2.4x	14.4x	14.0x	12.0x	34.7x	22.0x	17.9x
Fiserv, Inc.	90,124	5.4x	5.0x	4.6x	12.5x	11.2x	10.3x	17.4x	15.2x	13.3x
Extended ERP Average		7.4x	6.5x	5.9x	16.8x	21.9x	18.3x	25.0x	22.1x	17.0x
Software As A Service										
Descartes Systems Group Inc.	6,036	12.4x	10.5x	9.6x	28.1x	24.7x	21.8x	>50	>50	49.3x
Kinaxis, Inc.*	2,950	8.0x	6.9x	5.8x	37.1x	46.3x	37.8x	>50	>50	>50
Docebo, Inc.*	1,095	7.7x	6.1x	4.9x	>50	>50	37.6x	>50	NEG	>50
Lightspeed Commerce Inc*	1,384	2.0x	1.6x	1.2x	NEG	NEG	33.3x	NEG	>50	48.7x
Veeva Systems Inc Class A	29,880	14.0x	12.7x	10.7x	36.3x	36.6x	29.7x	48.4x	44.1x	37.2x
Shopify, Inc. Class A	66,522	11.9x	9.6x	8.1x	>50	>50	>50	>50	>50	>50
Q4 Inc*	97	1.7x	1.7x	1.6x	NEG	NEG	NEG	NEG	NEG	NEG
Ceridian HCM Holding, Inc.	11,488	9.2x	7.7x	6.6x	45.9x	29.6x	24.3x	>50	>50	41.9x
ServiceNow, Inc.	112,738	15.6x	12.7x	10.4x	49.3x	40.2x	31.8x	>50	>50	45.8x
Workday, Inc. Class A	53,554	8.7x	7.5x	6.4x	34.1x	27.9x	23.2x	>50	39.8x	33.2x
Software As A Service Average		9.1x	7.7x	6.5x	38.5x	34.2x	29.9x	>50	>50	>50
Infrastructure Vendors										
Microsoft Corporation	2,317,842	11.3x	10.4x	9.2x	22.9x	20.9x	18.2x	33.2x	30.4x	26.7x
Infrastructure Vendors Average		11.3x	10.4x	9.2x	22.9x	20.9x	18.2x	33.2x	30.4x	26.7x
Software Average										
		8.0x	6.9x	6.1x	26.7x	25.1x	22.5x	29.6x	28.0x	29.2x

*Share Price Converted to USD

Bolded companies are covered by CIBC World Markets. Data for non-covered companies is consensus.

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

Exhibit 6: 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	33,834	13.0x	11.8x	11.2x	21.4x	18.9x	17.8x	2.6x	2.3x	2.2x
TELUS International (CDA), Inc.	3,881	6.4x	6.7x	5.5x	6.3x	8.2x	6.8x	1.6x	1.4x	1.3x
Accenture Plc Class A	197,545	17.2x	16.4x	15.3x	27.8x	25.8x	24.3x	3.2x	3.0x	2.9x
Booz Allen Hamilton	16,980	17.1x	15.5x	14.3x	24.4x	22.2x	19.9x	1.9x	1.7x	1.6x
CACI International Inc Class A	9,118	13.5x	12.3x	11.5x	17.2x	16.3x	15.0x	1.4x	1.3x	1.2x
DXC Technology Co.	7,768	3.2x	3.7x	3.6x	6.0x	6.4x	5.5x	0.5x	0.6x	0.6x
Genpact Limited	7,668	9.7x	9.3x	8.3x	13.3x	12.5x	11.1x	1.8x	1.7x	1.5x
International Business Machines	172,704	10.9x	11.4x	10.9x	15.3x	14.6x	13.9x	2.9x	2.8x	2.7x
Atos SE	2,507	2.9x	2.2x	2.2x	NEG	2.9x	2.3x	0.2x	0.2x	0.2x
Capgemini SE	34,133	9.8x	9.4x	8.7x	14.4x	14.7x	13.5x	1.6x	1.5x	1.4x
Sopra Steria Group SA	5,271	8.8x	7.7x	7.1x	14.3x	11.6x	9.9x	1.0x	0.9x	0.9x
Converge Technology Solutions Corp	921	6.4x	5.4x	4.9x	26.4x	>50	21.1x	0.4x	0.4x	0.4x
Business & IT Services Average		10.2x	9.7x	9.0x	16.0x	14.0x	12.7x	1.7x	1.6x	1.5x
HR Outsourcing										
Ceridian HCM Holding, Inc.	11,488	45.9x	29.6x	24.3x	>50	>50	41.9x	9.2x	7.7x	6.6x
Willis Towers Watson	26,185	11.0x	11.2x	10.3x	15.6x	15.1x	13.2x	3.0x	2.8x	2.7x
Aon Plc Class A	77,070	19.4x	17.8x	16.6x	24.3x	23.0x	20.3x	6.2x	5.8x	5.5x
Automatic Data Processing, Inc.	100,563	21.7x	19.1x	17.5x	31.6x	27.7x	25.0x	5.8x	5.4x	5.1x
Paychex, Inc.	40,894	19.1x	17.6x	16.3x	28.4x	25.5x	23.6x	8.4x	7.9x	7.4x
HR Outsourcing Average		23.4x	19.1x	17.0x	25.0x	22.9x	24.8x	6.5x	5.9x	5.5x
Information Services										
Broadridge Financial Solutions, Inc.	24,543	18.6x	17.0x	15.7x	26.6x	24.4x	22.2x	4.2x	3.9x	3.7x
Dye & Durham Ltd.	2,047	12.9x	11.7x	17.2x	>50	NEG	NEG	4.3x	4.4x	4.1x
Deluxe Corporation	2,188	5.2x	5.4x	5.3x	4.6x	5.8x	5.7x	1.0x	1.0x	1.0x
Information Services Corp	432	6.7x	6.0x	4.8x	11.0x	10.9x	8.8x	2.3x	2.0x	1.9x
Information Services Average		10.9x	10.0x	10.8x	14.1x	13.7x	12.3x	2.9x	2.8x	2.6x
Financial Services Technology										
Fidelity National Information Services	51,088	8.2x	8.3x	8.0x	8.3x	9.2x	8.6x	3.5x	3.5x	3.4x
Fiserv, Inc.	90,124	12.5x	11.2x	10.3x	17.4x	15.2x	13.3x	5.4x	5.0x	4.6x
Jack Henry & Associates, Inc.	11,228	17.9x	16.9x	15.7x	30.4x	30.4x	28.6x	5.6x	5.2x	4.9x
ACI Worldwide, Inc.	3,484	9.3x	9.0x	8.3x	18.2x	23.5x	15.6x	2.5x	2.4x	2.2x
Temenos AG	5,592	15.3x	14.3x	12.7x	22.8x	21.3x	18.7x	5.9x	5.7x	5.2x
Global Payments Inc.	42,597	10.9x	9.8x	9.1x	12.4x	11.1x	9.7x	5.3x	4.9x	4.6x
Financial Services Technology Average		12.3x	11.6x	10.7x	18.3x	18.4x	15.7x	4.7x	4.4x	4.2x
Diversified Real Estate Services										
Colliers International Group Inc.	6,390	10.1x	9.6x	8.6x	13.6x	14.2x	12.3x	1.4x	1.4x	1.3x
Altus Group Limited	2,310	17.1x	15.8x	13.2x	24.8x	26.1x	25.1x	3.1x	2.9x	2.6x
CBRE Group, Inc. Class A	25,224	8.6x	10.5x	9.0x	13.1x	17.4x	13.6x	0.8x	0.8x	0.7x
Jones Lang LaSalle Incorporated	9,253	7.4x	10.0x	7.3x	9.0x	14.6x	9.2x	0.4x	0.4x	0.4x
Diversified Real Estate Services Average		10.8x	11.5x	9.5x	15.1x	18.1x	15.0x	1.5x	1.4x	1.3x
Software Focused IT Solutions/VARs										
Softchoice Corporation* USD	748	9.1x	8.7x	7.8x	13.9x	14.2x	12.3x	2.4x	2.3x	2.1x
Softcat Plc*	2,821	16.6x	15.1x	13.7x	22.3x	21.1x	19.8x	6.9x	6.0x	5.4x
Crayon Group Holding ASA*	7,692	>50	>50	>50	>50	>50	>50	17.4x	14.7x	12.8x
Bytes Technology Group Plc*	1,123	16.4x	14.6x	12.9x	21.9x	21.4x	19.5x	NA	NA	NA
Software Focused IT Solutions/VARs Average		14.1x	12.8x	11.5x	19.4x	18.9x	17.2x	8.9x	7.7x	6.8x
Business Services Average		13.1x	12.0x	11.0x	17.7x	17.0x	15.8x	3.7x	3.4x	3.2x

*Share Price Converted to USD

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

Bolded companies are covered by CIBC World Markets. Data for non-covered companies is consensus.

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

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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.

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Ratings Distribution*: CIBC World Markets Inc. Coverage Universe

(as of 29 Sep 2023)	Count	Percent	Inv. Banking Relationships	Count	Percent
Outperformer	154	51%	Outperformer	153	99%
Neutral	135	44%	Neutral	134	99%
Underperformer	7	2%	Underperformer	7	100%
Tender	1	0%	Tender	1	100%
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