

## EQUITY RESEARCH

September 14, 2023

Industry Update

**Do Not Pass Go – Bits & Bytes Weekly**

Following The Google Monopoly Trial

**Our Conclusion**

Over the years, the phrase “Google it” has become a common colloquialism for looking up information online. So common in fact, that the Department of Justice (DOJ) is now taking action against the company whose name has become synonymous with online search engines. This week, a federal judge began hearing claims from the DOJ in a case against Google, which alleges that the company abused its power as a monopoly over online search services. The trial is expected to last 10 weeks, and will hear testimony from CEO Sundar Pichai as well as other top executives, including some from Apple. The court case is another thorn in Google’s side at a time when the company’s dominance in search is being threatened by the entrance of new AI-powered search tools, such as ChatGPT.

**Key Points**

**What’s The Case?** The complaint alleges that Google has unlawfully maintained monopolies in the markets for general search services, search advertising and general search text advertising in the United States through anticompetitive and exclusionary practices. The Justice Department’s case makes reference to Google’s exclusionary agreements with phone makers and internet browser companies to make it the default search engine, such as the deal Google struck with Apple to make Google the default search function on the Safari browser on iPhones. The Justice Department also claims that Google’s practice of preloading its services onto Android devices has illegally helped them maintain a monopoly.

**First Major Monopoly Trial Since Microsoft:** The trial against Google is the first monopoly trial to make it to court against a tech giant since the landmark antitrust case against Microsoft, in which the U.S. government accused Microsoft of illegally maintaining its monopoly position in the personal computer market in 1998. In the case against Google, the Justice Department faces a high bar as it will have to prove that Google had (has) monopoly power over the area at issue and that Google’s commercial agreements materially reduced competition, as well as likely needing to prove either direct or indirect harm to consumers.

**Google Says It Is Simply The Best:** So far, Google has argued that the agreements it has in place are standard practice and legal. The company pointed to Amazon and TikTok and other specialized apps, such as those used to find restaurants and flights, as successful competitors in online search (despite the fact that these competitors do not operate as general search engines). Google also stated it believes it is being targeted because of the company’s popularity, and the company’s success is simply because it makes the best search engine.

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

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**Sector:**  
Information Technology

## A Sense Of Familiarity

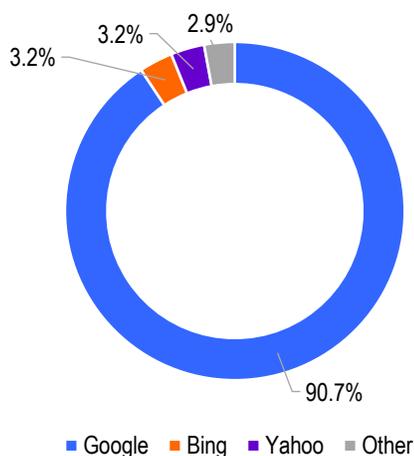
In 1998, Microsoft was a market leader in the personal computer market, with Windows powering ~90% of PCs. By May of that year, the U.S. Department of Justice and 20 state attorney generals had filed an antitrust lawsuit against the corporation.

The case was focused on predatory strategies and market barriers to entry, and hinged on the fact that Microsoft forced computer makers to include Internet Explorer, its internet browser, as a part of the installation of Windows software. The most famous victim of the Microsoft monopoly was Netscape, which went public in 1995 and was credited for pioneering the commercial browser. Microsoft released its first version of Windows Explorer the same month Netscape went public, and what followed was years of internet browser wars until the DOJ finally filed suit against Microsoft. The 1998 case against Microsoft claimed that the company had violated antitrust laws by bundling its software with its operating system and giving it an unfair advantage against competition (mainly Netscape).

The trial lasted months, and saw testimony from Bill Gates where the founder denied knowledge of any attempts to eliminate competition despite witness testimony to the contrary. Microsoft also presented video evidence during the trial that attempted to display the ease of downloading Netscape to a Windows PC; however, the video was later proven to have been cut short and inaccurate. Ultimately, a federal judge ruled in November 1999 that Microsoft's dominance of the PC market constituted a monopoly, and that Microsoft had in fact taken action to squash threats to that monopoly, thus violating antitrust laws. However, Microsoft appealed the court decision and later won that appeal in 2001, and the DOJ and Microsoft reached a settlement in November of 2001.

The Microsoft case was famously credited for allowing the birth of new companies that Microsoft may have found ways to eliminate by developing competing Windows products or through other means. One of those companies was Google, founded in September of 1998. Today, Google now controls approximately 90% of the search engine market, roughly the same percentage share Microsoft held of the PC market during the time of its trial.

**Exhibit 1: Google's Search Engine Market Share – As Of June 2023**



Note: Excludes China and Russia.

Source: Visual Capitalist.

## News Impacting Our Coverage

### Research Highlight: [CTS – Integration And AI Opportunities At Coffee With Converge](#)

Converge hosted a “Coffee And Converge” event today, to discuss its AI/analytics and cybersecurity offerings. With Converge focused on cross-selling higher margin services to its acquired customer base, AI could provide a gateway to more holistic discussions with clients about IT modernization. However, we expect that a material revenue contribution from AI is still many years away. We see upside if Converge is able to execute on its organic growth and integration activities more quickly than anticipated.

**Research Highlight: [DND - Targeting Growth From M&A](#)** Dye & Durham reported FQ4 results that narrowly exceeded the upper end of guidance while slightly topping the low end of the guidance range on Adjusted EBITDA. Revenue in the quarter was 3% below our estimate as improving Q/Q housing transaction revenue appears to have been offset by slightly lower-than-expected non-housing transaction revenue. While housing transactions remain a substantial piece of DND’s business (58% of FQ4 revenue), ARR growth has been strong as new go-to-market efforts and M&A have focused on adding recurring revenue. Looking forward, management is targeting 20%-25% growth in Adjusted EBITDA in 2024, split 50/50 between organic and acquired growth.

### CGI Partners With Mustimuhw Information Solutions

CGI announced that it is partnering with Mustimuhw Information Solutions (MIS) to develop a fire prevention solution for First Nation communities across Canada as part of the Indigenous Digital Health Ecosystem (IDHE) initiative consortium. The goal of the solution is to improve fire safety, preparedness, and help reduce loss of life and property. The project involves an initial phase that leverages AI and machine learning techniques to build a digital twin and risk model that will identify fire safety assets and opportunities to mitigate threats. The second phase will focus on real-time digital monitoring and management.

**Exhibit 2: CIBC Coverage – Price Returns, For The Period Ending September 14, 2023**

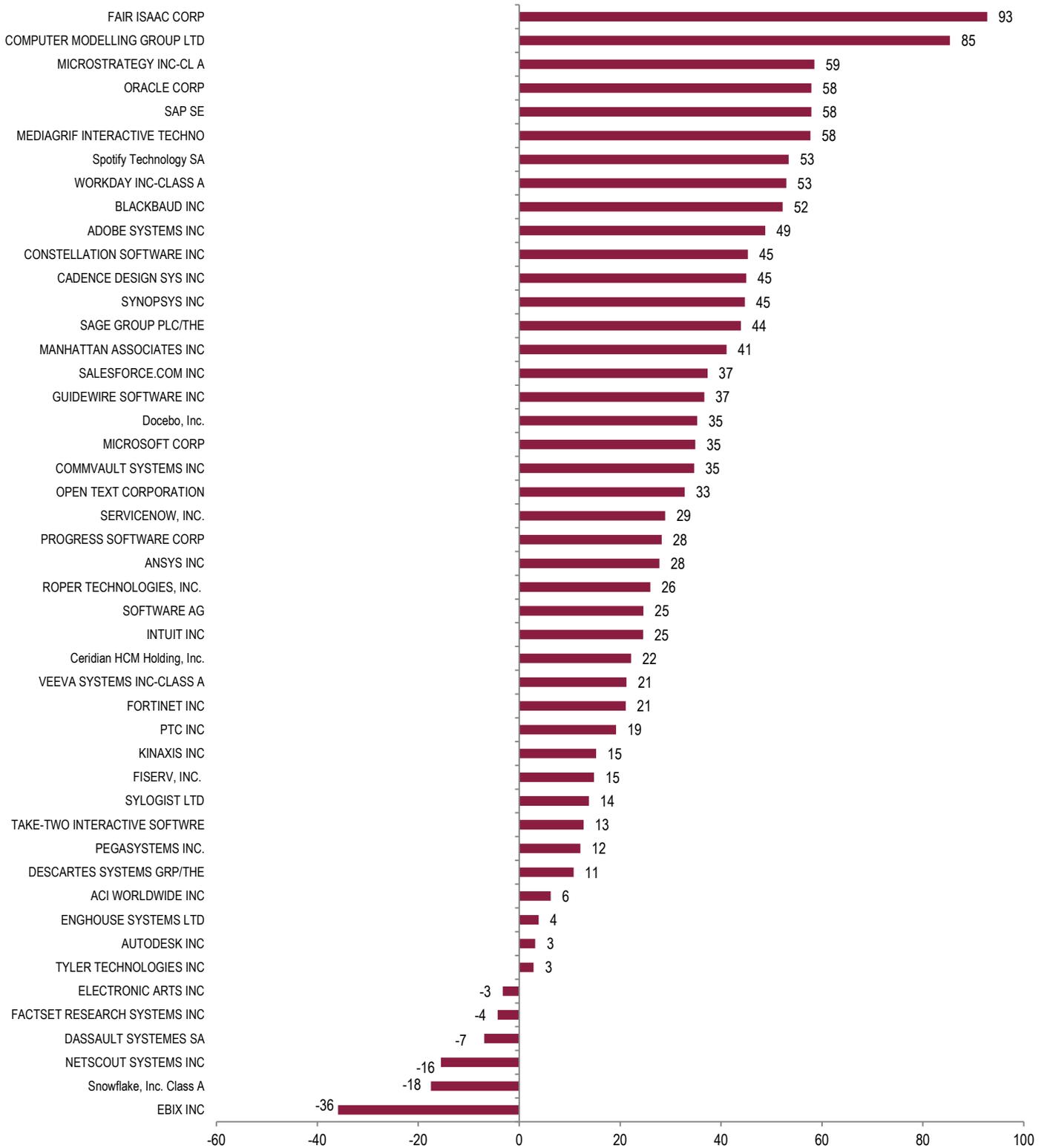
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,828.00	0.9	4.7	2.5	20.3	45.3	36.5	2905.40	1747.83
Descartes Systems	75.18	(0.6)	2.5	(2.7)	(2.2)	8.0	7.9	82.02	61.26
Enghouse Systems Limited	31.58	3.8	10.5	(9.8)	(17.2)	3.8	(12.2)	44.59	27.30
Open Text Corp	39.41	(3.4)	3.3	(6.2)	8.4	32.8	33.0	43.25	24.91
Kinaxis	165.52	1.7	0.8	(10.1)	(3.5)	15.3	9.0	191.80	124.90
Docebo, Inc.	55.06	(3.7)	9.2	9.8	2.5	35.3	23.1	62.95	31.66
Dye & Durham	16.94	14.2	(13.9)	(1.5)	(11.4)	29.5	3.2	23.14	11.62
Altus Group	52.34	0.7	5.4	9.0	(9.7)	3.5	(3.1)	61.60	40.00
Q4 Inc.	4.30	(3.4)	9.4	24.3	42.9	NA	34.0	4.55	1.88
<b>Average</b>		<b>1.1</b>	<b>3.6</b>	<b>1.7</b>	<b>3.3</b>	<b>21.7</b>	<b>14.6</b>		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
CGI Group Inc	140.15	0.5	1.0	0.2	10.7	35.4	20.1	142.31	100.74
Converge Technologies	3.00	5.6	14.9	(7.7)	(30.7)	(51.5)	(34.6)	7.18	2.39
Information Services Corp	24.40	1.0	1.8	16.5	7.7	4.9	1.0	26.98	20.16
Softchoice Corporation	14.80	(3.7)	(7.0)	(13.8)	(6.2)	(24.4)	(18.9)	21.70	13.57
Telus International	11.49	1.1	(3.4)	(43.7)	(60.8)	(71.0)	(57.0)	39.87	11.03
<b>Average</b>		<b>0.9</b>	<b>1.4</b>	<b>(16.2)</b>	<b>(21.7)</b>	<b>(27.9)</b>	<b>(22.6)</b>		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	20,480.96	1.7	0.9	2.3	4.0	3.8	5.7
S&P 500 Index	4,496.45	1.0	0.1	2.8	14.7	13.9	17.1
S&P/TSX Software Index	191.67	(0.4)	5.8	0.2	20.6	45.8	40.5
S&P500 Software Index	5,814.55	1.1	4.5	2.2	29.9	34.2	41.9

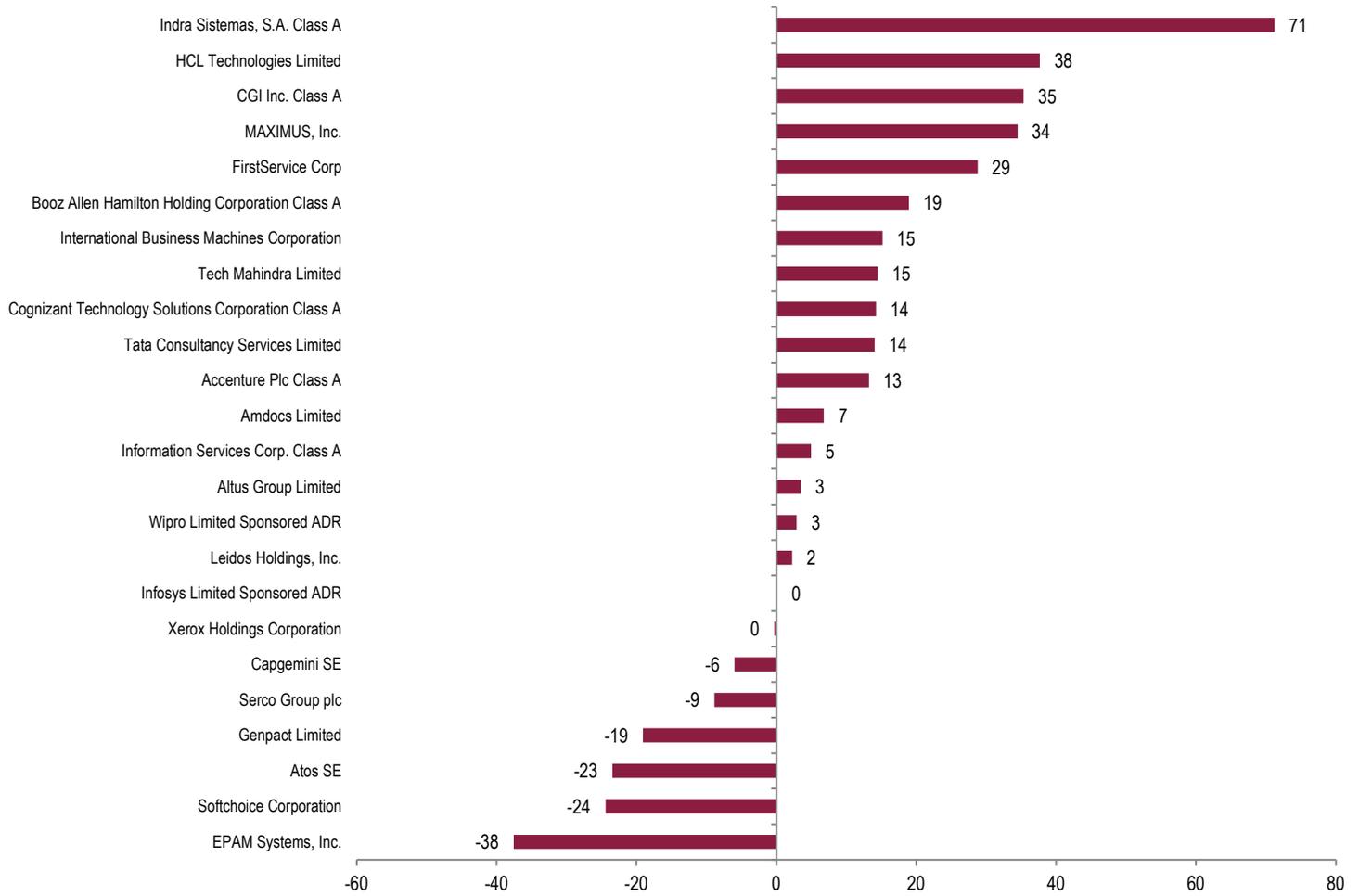
Source: Company reports, FactSet and CIBC World Markets Inc.

**Exhibit 3: Software Stocks – Return Performance (%), 9/14/2022 - 9/14/2023**



Source: Company reports and CIBC World Markets Inc.

**Exhibit 4: Business Services Stocks – Return Performance (%), 9/14/2022 – 9/14/2023**



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
<b>Enterprise Application Software</b>										
Constellation Software Inc.*	46,552	7.0x	5.7x	4.9x	27.4x	22.4x	18.7x	36.6x	38.9x	28.1x
BlackBerry Limited*	3,220	4.8x	2.8x	3.1x	NEG	>50	>50	NEG	NEG	>50
Sage Group plc	11,409	5.7x	5.2x	4.8x	24.9x	21.7x	19.5x	38.6x	32.3x	28.8x
Tyler Technologies, Inc.	16,783	9.1x	8.6x	7.9x	35.3x	34.4x	30.4x	>50	49.3x	43.5x
Roper Technologies, Inc.	59,343	11.0x	9.8x	9.1x	27.1x	23.9x	22.4x	35.0x	30.3x	27.9x
<b>Enghouse Systems Limited</b>	<b>1,509</b>	<b>3.6x</b>	<b>3.29x</b>	<b>3.18x</b>	<b>10.9x</b>	<b>11.4x</b>	<b>10.26x</b>	<b>15.9x</b>	<b>26.7x</b>	<b>22.24x</b>
Oracle Corporation	397,156	8.5x	7.6x	7.1x	17.1x	15.1x	13.6x	22.6x	21.2x	19.1x
SAP SE	160,217	4.8x	5.1x	4.7x	20.2x	17.7x	15.5x	31.3x	24.8x	20.9x
<b>Enterprise Application Software Average</b>		<b>6.8x</b>	<b>6.0x</b>	<b>5.6x</b>	<b>23.3x</b>	<b>21.0x</b>	<b>18.6x</b>	<b>30.0x</b>	<b>31.9x</b>	<b>27.2x</b>
<b>Extended ERP</b>										
Adobe Incorporated	250,494	14.1x	12.8x	11.4x	28.7x	26.1x	23.7x	39.8x	34.8x	30.7x
<b>Open Text Corporation</b>	<b>18,715</b>	<b>5.3x</b>	<b>3.4x</b>	<b>3.1x</b>	<b>15.1x</b>	<b>11.3x</b>	<b>8.1x</b>	<b>12.5x</b>	<b>12.0x</b>	<b>7.3x</b>
Manhattan Associates, Inc.	12,109	15.8x	13.6x	12.2x	>50	49.6x	43.5x	>50	>50	>50
Pegasystems Inc.	4,119	3.1x	3.0x	2.8x	>50	23.3x	15.7x	>50	31.7x	20.3x
Software AG	2,580	2.7x	2.6x	2.4x	14.5x	14.3x	12.2x	35.0x	22.2x	17.9x
Fiserv, Inc.	95,403	5.7x	5.3x	4.9x	13.2x	11.8x	10.9x	18.7x	16.3x	14.2x
<b>Extended ERP Average</b>		<b>7.8x</b>	<b>6.8x</b>	<b>6.1x</b>	<b>17.9x</b>	<b>22.8x</b>	<b>19.0x</b>	<b>26.5x</b>	<b>23.4x</b>	<b>18.1x</b>
<b>Software As A Service</b>										
Descartes Systems Group Inc.	6,175	12.7x	10.8x	9.9x	28.7x	25.3x	22.3x	>50	>50	>50
<b>Kinaxis, Inc.*</b>	<b>3,237</b>	<b>8.8x</b>	<b>7.6x</b>	<b>6.3x</b>	<b>40.7x</b>	<b>&gt;50</b>	<b>41.5x</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>&gt;50</b>
<b>Docebo, Inc.*</b>	<b>1,091</b>	<b>7.6x</b>	<b>6.0x</b>	<b>4.8x</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>37.4x</b>	<b>&gt;50</b>	<b>NEG</b>	<b>&gt;50</b>
<b>Lightspeed Commerce Inc*</b>	<b>1,647</b>	<b>2.4x</b>	<b>1.9x</b>	<b>1.5x</b>	<b>NEG</b>	<b>NEG</b>	<b>40.1x</b>	<b>NEG</b>	<b>&gt;50</b>	<b>&gt;50</b>
Veeva Systems Inc Class A	30,898	14.5x	13.1x	11.1x	37.6x	37.7x	30.5x	49.9x	45.6x	38.5x
<b>Shopify, Inc. Class A</b>	<b>78,131</b>	<b>14.0x</b>	<b>11.3x</b>	<b>9.5x</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>&gt;50</b>
<b>Q4 Inc*</b>	<b>106</b>	<b>1.9x</b>	<b>1.9x</b>	<b>1.8x</b>	<b>NEG</b>	<b>NEG</b>	<b>NEG</b>	<b>NEG</b>	<b>NEG</b>	<b>NEG</b>
Ceridian HCM Holding, Inc.	12,480	10.0x	8.3x	7.2x	49.8x	32.2x	26.5x	>50	>50	46.2x
ServiceNow, Inc.	118,455	16.3x	13.3x	10.9x	>50	42.3x	33.6x	>50	>50	48.1x
Workday, Inc. Class A	61,323	10.0x	8.6x	7.3x	39.0x	31.9x	26.4x	>50	45.2x	37.7x
<b>Software As A Service Average</b>		<b>9.8x</b>	<b>8.3x</b>	<b>7.0x</b>	<b>39.2x</b>	<b>33.9x</b>	<b>32.3x</b>	<b>&gt;50</b>	<b>&gt;50</b>	<b>&gt;50</b>
<b>Infrastructure Vendors</b>										
Microsoft Corporation	2,496,307	12.2x	11.2x	9.9x	24.7x	22.5x	19.6x	35.8x	32.8x	28.7x
<b>Infrastructure Vendors Average</b>		<b>12.2x</b>	<b>11.2x</b>	<b>9.9x</b>	<b>24.7x</b>	<b>22.5x</b>	<b>19.6x</b>	<b>35.8x</b>	<b>32.8x</b>	<b>28.7x</b>
<b>Software Average</b>		<b>8.5x</b>	<b>7.3x</b>	<b>6.5x</b>	<b>26.8x</b>	<b>25.0x</b>	<b>23.7x</b>	<b>31.0x</b>	<b>30.9x</b>	<b>28.2x</b>

\*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
<b>Business &amp; IT Services</b>										
<b>CGI Inc. Class A</b>	<b>35,281</b>	<b>13.6x</b>	<b>12.3x</b>	<b>11.7x</b>	<b>22.4x</b>	<b>19.7x</b>	<b>18.6x</b>	<b>2.7x</b>	<b>2.4x</b>	<b>2.3x</b>
<b>TELUS International (CDA), Inc.</b>	<b>4,114</b>	<b>6.8x</b>	<b>7.1x</b>	<b>5.9x</b>	<b>6.9x</b>	<b>9.1x</b>	<b>7.5x</b>	<b>1.7x</b>	<b>1.5x</b>	<b>1.4x</b>
Accenture Plc Class A	204,903	17.8x	17.0x	15.8x	28.6x	26.5x	24.5x	3.3x	3.1x	3.0x
Booz Allen Hamilton	17,481	17.6x	16.0x	14.8x	25.3x	23.0x	20.6x	1.9x	1.7x	1.6x
CACI International Inc Class A	9,157	13.5x	12.4x	11.5x	17.3x	16.4x	15.1x	1.4x	1.3x	1.3x
DXC Technology Co.	7,742	3.2x	3.6x	3.6x	5.9x	6.4x	5.5x	0.5x	0.6x	0.6x
Genpact Limited	7,740	9.8x	9.3x	8.3x	13.5x	12.6x	11.2x	1.8x	1.7x	1.5x
International Business Machines	179,099	11.3x	12.1x	11.5x	16.1x	15.4x	14.6x	3.0x	2.9x	2.8x
Atos SE	2,556	3.0x	2.3x	2.3x	NEG	3.1x	2.4x	0.2x	0.2x	0.2x
Capgemini SE	34,454	9.8x	9.5x	8.8x	14.6x	14.9x	13.6x	1.6x	1.5x	1.4x
Sopra Steria Group SA	5,240	8.8x	7.6x	7.1x	14.2x	11.5x	9.8x	1.0x	0.9x	0.9x
<b>Converge Technology Solutions Corp</b>	<b>964</b>	<b>6.7x</b>	<b>5.7x</b>	<b>5.1x</b>	<b>28.3x</b>	<b>&gt;50</b>	<b>22.6x</b>	<b>0.4x</b>	<b>0.4x</b>	<b>0.4x</b>
<b>Business &amp; IT Services Average</b>		<b>10.5x</b>	<b>9.9x</b>	<b>9.2x</b>	<b>16.5x</b>	<b>14.4x</b>	<b>13.0x</b>	<b>1.7x</b>	<b>1.6x</b>	<b>1.5x</b>
<b>HR Outsourcing</b>										
Ceridian HCM Holding, Inc.	12,480	49.8x	32.2x	26.5x	>50	>50	46.2x	10.0x	8.3x	7.2x
Willis Towers Watson	25,449	10.7x	10.8x	10.0x	15.1x	14.7x	12.8x	2.9x	2.7x	2.6x
Aon Plc Class A	78,566	19.7x	18.2x	16.9x	25.0x	23.6x	20.9x	6.3x	5.9x	5.6x
Automatic Data Processing, Inc.	103,443	22.4x	19.7x	18.0x	32.5x	28.5x	25.8x	6.0x	5.6x	5.2x
Paychex, Inc.	42,406	19.8x	18.3x	17.0x	29.4x	26.6x	24.5x	8.8x	8.2x	7.7x
<b>HR Outsourcing Average</b>		<b>24.5x</b>	<b>19.8x</b>	<b>17.7x</b>	<b>25.5x</b>	<b>23.3x</b>	<b>26.1x</b>	<b>6.8x</b>	<b>6.1x</b>	<b>5.7x</b>
<b>Information Services</b>										
Broadridge Financial Solutions, Inc.	25,666	19.5x	17.8x	16.4x	28.0x	25.7x	23.4x	4.4x	4.1x	3.8x
<b>Dye &amp; Durham Ltd.</b>	<b>2,254</b>	<b>14.2x</b>	<b>12.8x</b>	<b>11.5x</b>	<b>&gt;50</b>	<b>NEG</b>	<b>NEG</b>	<b>4.7x</b>	<b>4.9x</b>	<b>4.8x</b>
Deluxe Corporation	2,232	5.3x	5.5x	5.4x	4.9x	6.1x	6.0x	1.0x	1.0x	1.0x
<b>Information Services Corp</b>	<b>472</b>	<b>7.3x</b>	<b>6.6x</b>	<b>5.3x</b>	<b>12.2x</b>	<b>12.0x</b>	<b>9.8x</b>	<b>2.5x</b>	<b>2.2x</b>	<b>2.1x</b>
<b>Information Services Average</b>		<b>11.6x</b>	<b>10.7x</b>	<b>9.7x</b>	<b>15.0x</b>	<b>14.6x</b>	<b>13.1x</b>	<b>3.1x</b>	<b>3.1x</b>	<b>2.9x</b>
<b>Financial Services Technology</b>										
Fidelity National Information Services	51,565	8.3x	8.4x	8.1x	8.4x	9.3x	8.7x	3.5x	3.5x	3.4x
Fiserv, Inc.	95,403	13.2x	11.8x	10.9x	18.7x	16.3x	14.2x	5.7x	5.3x	4.9x
Jack Henry & Associates, Inc.	11,259	17.9x	16.9x	15.8x	30.5x	30.5x	28.6x	5.6x	5.2x	4.9x
ACI Worldwide, Inc.	3,622	9.7x	9.3x	8.6x	19.2x	24.8x	16.5x	2.5x	2.5x	2.3x
Temenos AG	5,850	16.0x	15.0x	13.4x	24.1x	22.1x	19.4x	6.2x	5.9x	5.4x
Global Payments Inc.	45,147	11.6x	10.4x	9.6x	13.4x	12.0x	10.5x	5.6x	5.2x	4.8x
<b>Financial Services Technology Average</b>		<b>12.8x</b>	<b>12.0x</b>	<b>11.1x</b>	<b>19.1x</b>	<b>19.2x</b>	<b>16.3x</b>	<b>4.9x</b>	<b>4.6x</b>	<b>4.3x</b>
<b>Diversified Real Estate Services</b>										
Colliers International Group Inc.	7,119	11.3x	10.7x	9.6x	15.8x	16.5x	14.4x	1.6x	1.6x	1.5x
<b>Altus Group Limited</b>	<b>2,544</b>	<b>18.8x</b>	<b>17.5x</b>	<b>14.6x</b>	<b>27.5x</b>	<b>29.0x</b>	<b>27.8x</b>	<b>3.5x</b>	<b>3.2x</b>	<b>2.9x</b>
CBRE Group, Inc. Class A	26,643	9.1x	11.0x	9.4x	13.9x	18.5x	14.4x	0.9x	0.8x	0.8x
Jones Lang LaSalle Incorporated	9,957	8.0x	10.7x	7.8x	10.0x	16.1x	10.1x	0.5x	0.5x	0.4x
<b>Diversified Real Estate Services Average</b>		<b>11.8x</b>	<b>12.4x</b>	<b>10.3x</b>	<b>16.8x</b>	<b>20.0x</b>	<b>16.7x</b>	<b>1.6x</b>	<b>1.5x</b>	<b>1.4x</b>
<b>Software Focused IT Solutions/VARs</b>										
<b>Softchoice Corporation* USD</b>	<b>738</b>	<b>9.0x</b>	<b>8.6x</b>	<b>7.7x</b>	<b>13.7x</b>	<b>14.0x</b>	<b>12.1x</b>	<b>2.4x</b>	<b>2.3x</b>	<b>2.1x</b>
Softcat Plc*	2,885	16.9x	15.1x	13.7x	22.6x	21.1x	19.8x	7.0x	6.0x	5.4x
Crayon Group Holding ASA*	8,480	>50	>50	>50	>50	>50	>50	19.1x	16.2x	14.0x
Bytes Technology Group Plc*	1,091	15.9x	14.1x	12.4x	21.4x	20.7x	18.9x	NA	NA	NA
<b>Software Focused IT Solutions/VARs Average</b>		<b>13.9x</b>	<b>12.6x</b>	<b>11.3x</b>	<b>19.2x</b>	<b>18.6x</b>	<b>16.9x</b>	<b>9.5x</b>	<b>8.1x</b>	<b>7.2x</b>
<b>Business Services Average</b>		<b>13.6x</b>	<b>12.4x</b>	<b>11.2x</b>	<b>18.4x</b>	<b>17.6x</b>	<b>16.5x</b>	<b>3.9x</b>	<b>3.6x</b>	<b>3.3x</b>

\*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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