

EQUITY RESEARCH

December 16, 2021

Industry Update

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Targeting Big Tech – Bits & Bytes Weekly

Europe Continues To Lead Tech Regulation Efforts

Our Conclusion

Another European Union member took a significant step towards regulating big tech last week, with Italian antitrust authorities fining Amazon 1.13 billion euros. The fine was levied after Italian authorities ruled that Amazon had negatively impacted competition by favoring third-party sellers that used its own logistics service, Fulfillment by Amazon (FBA). Big tech continues to be a target of European regulation, and the fine comes on the heels of a 746-million euro fine levied on Amazon by Luxembourg's privacy regulator for general data protection regulation (GDPR) violations in July.

Unsurprisingly, Amazon plans to appeal the fine, calling it "unjustified and disproportionate," as it did with the GDPR fine earlier in the year. European regulators have the ability to impose steep fines on foreign companies, and regulators are clearly getting comfortable using the financial penalties at their disposal. The willingness to regulate big tech from authorities outside of Europe remains in earlier stages, but with government and public sentiment shifting in favour of increased regulation, we would not be surprised if the wave of regulatory activity spreads beyond European borders.

Key Points

Antitrust isn't the only governmental concern, and Big Tech executives continue to be called to testify in front of U.S. Congress on a range of issues. The most recent chapter in the ongoing fallout from the "Facebook Papers" released by a Facebook whistleblower saw Instagram head Adam Mosseri testify in front of congress regarding the danger Instagram poses to younger users. The testimony was part of an ongoing bipartisan effort to rein in tech companies through privacy, speech and antitrust regulation.

The leak of the Facebook Papers has accelerated legislative efforts in the U.S. and Europe, with American lawmakers seeing renewed traction on new proposals to protect children, discourage harmful content, and increase antitrust regulation that have been slow moving in recent years. In keeping with a desire to take the lead on regulation, European ministers have already drafted two new pieces of legislation: the Digital Services Act (DSA) and Digital Markets Act (DMA). The DSA revamps existing e-commerce rules and aims to increase content moderation, limit improper use of the platforms, and ban misleading and manipulative design intended to increase data collection. The DMA focuses on antitrust and would impose prohibitions on major 'gatekeeper' platforms from combining data sets from different sources and from bundling digital services. Companies that violate the acts could be subject to fines of up to 10% of global revenues once they are officially in place, which may not be until 2024 as the lawmaking process plays out.

All figures in Canadian dollars unless otherwise stated.

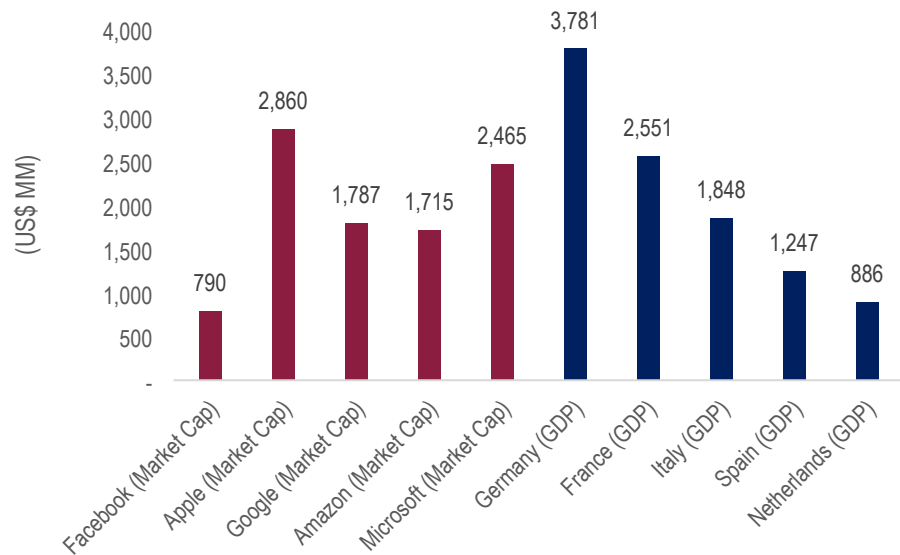
For required regulatory disclosures please refer to "Important Disclosures" beginning on page 11.

Sector:

Information Technology

The rapid growth of technology firms has caused the market capitalizations of many of the companies to surpass the annual GDP of some of the largest members of the EU. It seems clear that European regulators will continue to try to set precedents, limiting the influence that massive companies have over their citizens.

Exhibit 1: Big Tech – Market Cap (Current) Vs. European Nation GDP (2020) – 2020-2021



Source: IMF, FactSet and CIBC World Markets Inc.

News Impacting Our Coverage

Research Highlight: Initiating Coverage On Converge (CTS) - Neutral

We hold a positive long-term view on Converge’s strategy of rolling up the IT Service Provider (ITSP) market, which we expect to lead to significant cost synergies. Converge has a sticky, mid-market customer base that has access to limited internal IT talent. We see upside from recurring managed services as this client base transitions to the cloud. That being said, as of December 12, we initiated coverage on Converge with a Neutral rating and \$12.50 price target as we watch for synergies from record M&A spending in 2021 and Converge’s ability to navigate hardware-related supply chain disruptions. Read our full initiating coverage report [here](#).

Research Highlight: Altus Investor Day

Altus hosted an Investor Day in New York on December 9. The day focused on Altus’ plans to create an integrated platform that will allow the commercial real estate industry to digitize and modernize its processes. While we appreciate the longer-term strategy, the investor day did not alter our thesis on Altus and we continue to see it as fairly valued at these levels. We retain our Neutral rating, with our price target increasing to \$73 (prior \$63) as we roll over our valuation year to F23E. Read our full note on the investor day [here](#).

Information Services Corp. Appoints Chief Financial Officer

ISC announced the appointment of Robert (Bob) Antochow as the company’s new Chief Financial Officer. Mr. Antochow fills the role that was previously held by ISC’s newly appointed CEO, Shawn Peters. Mr. Antochow is currently the Senior Director, Finance for ISC, and will assume the CFO role when Mr. Peters takes over as CEO on February 1, 2022.

Mr. Antochow has been with ISC since 2015 and is a Chartered Professional Accountant with over 20 years of experience working for publicly traded companies.

Softchoice Earns Cisco Advanced Customer Experience Specialization

Softchoice announced that it had earned the Cisco Advanced Experience (CX) Specialization, a recognition of customer success capabilities. Cisco is one of two Cisco partners in North America to earn this specialization in both the U.S. and Canada. The specialization recognizes Softchoice's ability to support customers across the full lifecycle of Cisco solutions. Softchoice's Enterprise Lifecycle Management service provides the framework and guidance needed for customers to reduce the cost and complexity of enterprise licensing.

CGI Awarded Contract By Centers For Medicare And Medicaid Services

CGI was awarded a recompetete contract by the Centers for Medicare and Medicaid Services (CMS) to modernize, maintain and operate the Medicare Advantage and Prescription Drugs (MARx) system. The work includes transitioning legacy platforms to the cloud. The contract is five years, and it is valued at \$44.1 million. CGI has more than a decade of experience with MARx as well as a broad understanding of the Medicare Enrollment and Payment Systems (MEPS) that will allow it to best recommend and implement a cloud-based environment.

Docebo Recognized As Market Leader By G2 Crowd And Brendan Hall

Docebo announced that it had been ranked number one in three of G2 Crowd's Enterprise Grid Reports. The three reports cover Corporate Learning Management Systems, Corporate Education, and Healthcare Learning Management Systems. G2 is a leading business software review program, and uses customer feedback to rate industry solutions on a quarterly basis. Docebo also won nine Brandon Hall Excellence in Technology awards, including six gold medals the Learning & Development and Future of Work categories.

Exhibit 2: CIBC Software/Services – Coverage Performance, 12/16/2020 - 12/16/2021

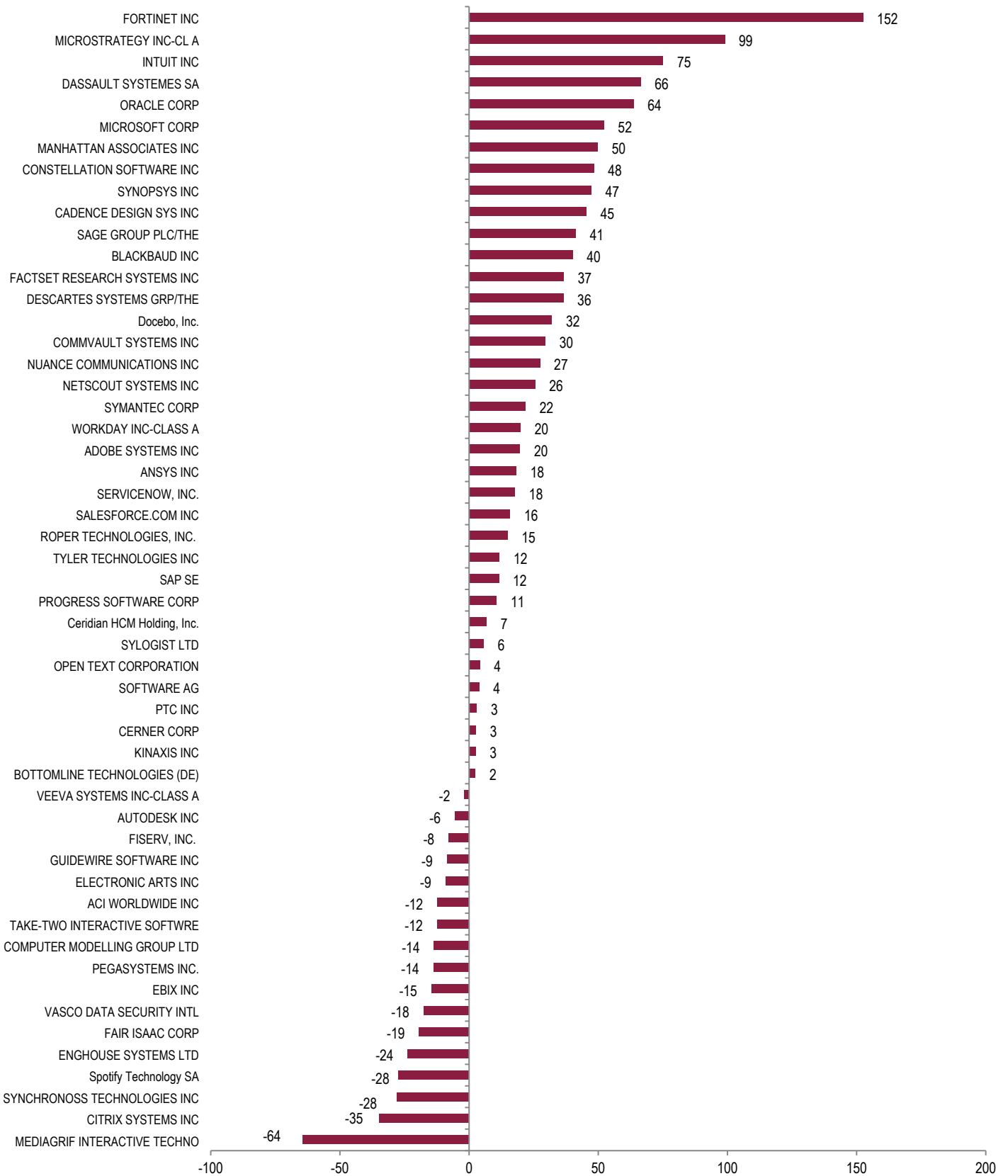
Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,258.73	3.7	2.5	2.8	25.1	48.3	36.7	2270.07	1512.55
Descartes Systems	78.22	(2.8)	(13.1)	(5.0)	18.1	37.6	33.8	91.39	56.36
Dye & Durham	42.18	(7.1)	1.7	(6.5)	(14.3)	NA	(16.5)	53.68	35.51
Enghouse Systems Limited	49.20	(2.4)	(12.4)	(18.4)	(7.6)	(23.7)	(20.2)	70.15	48.17
Open Text Corp	47.25	(2.7)	(9.2)	(9.9)	(5.0)	4.1	3.9	55.25	43.68
Kinaxis	176.20	(4.7)	(19.4)	(12.0)	18.8	2.6	(2.3)	229.98	124.05
Docebo, Inc.	83.97	(1.1)	(12.3)	(28.3)	29.3	32.0	1.5	117.55	47.22
Q4 Inc.	8.15	(7.5)	NA	NA	NA	NA	NA	12.05	8.22
Average		(3.1)	(8.9)	(11.1)	9.2	16.8	5.3		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Altus Group Ltd	68.84	0.9	1.4	8.4	19.1	42.7	40.1	72.03	47.57
CGI Group Inc	108.96	1.6	(0.1)	(3.2)	(1.6)	10.0	7.9	116.88	93.88
Converge Technologies	11.21	(4.3)	(2.2)	(7.6)	26.4	189.7	125.6	13.09	3.68
Information Services Corp	23.95	(7.6)	(12.6)	(17.2)	(21.8)	21.5	20.3	33.87	19.55
LifeWorks Inc	25.11	(2.9)	(4.4)	(29.3)	(22.5)	(19.6)	(19.1)	37.56	24.82
Softchoice Corporation	21.64	0.9	(14.7)	(29.7)	NA	NA	NA	45.74	19.71
Telus International	41.01	(2.4)	(6.9)	(9.5)	9.6	NA	NA	49.43	34.00
Average		(2.0)	(5.6)	(12.6)	1.5	48.9	34.9		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	20,901.45	(0.1)	(3.8)	1.5	3.3	19.0	19.9
S&P 500 Index	4,704.59	0.8	0.1	5.2	11.4	27.1	25.3
S&P/TSX Software Index	207.46	(2.4)	(12.2)	(13.7)	2.6	14.1	13.8
S&P500 Software Index	5,815.72	(0.6)	(4.5)	5.0	23.5	41.0	38.4

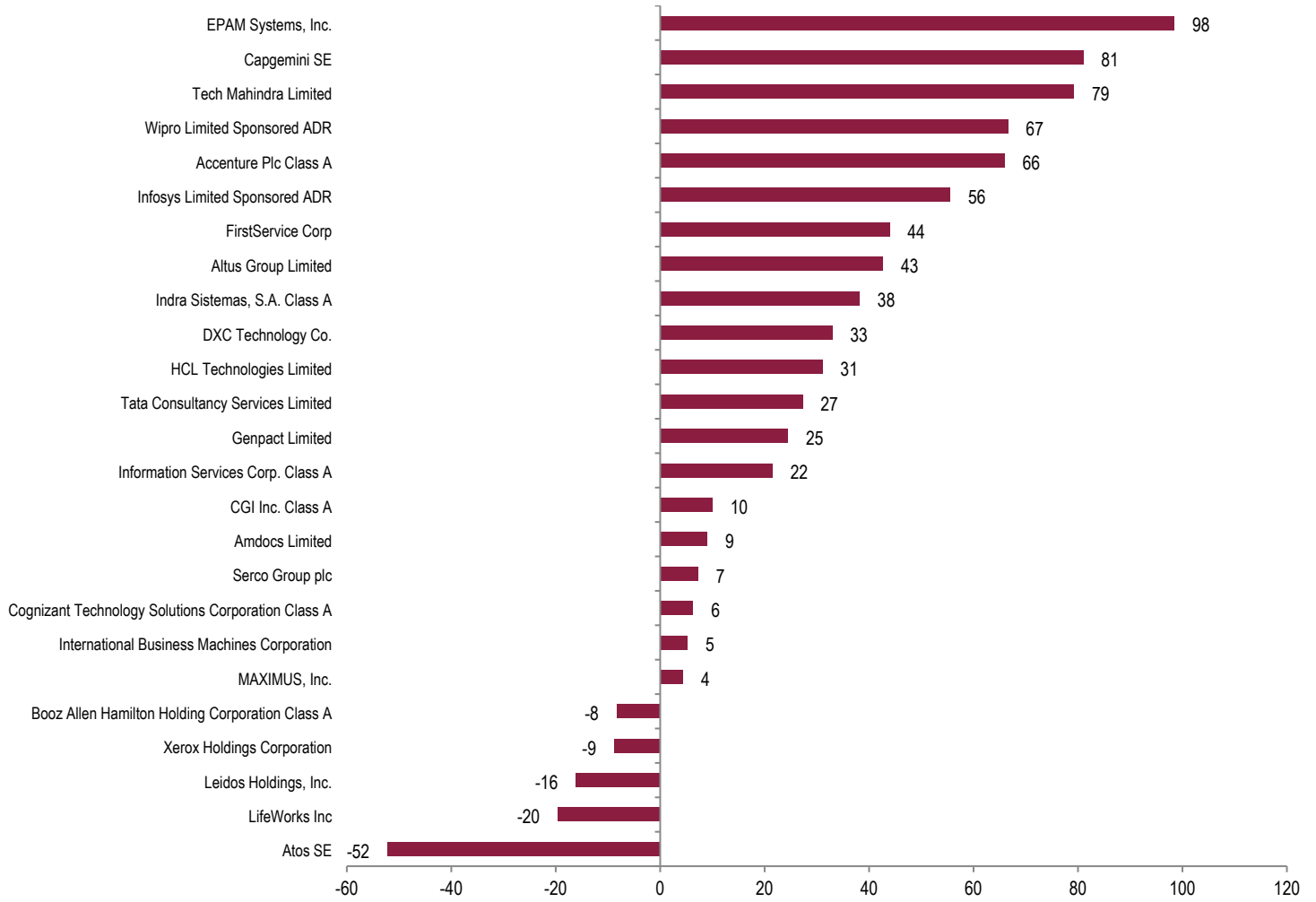
Source: Company reports, FactSet and CIBC World Markets Inc.

Exhibit 3: Software Stocks – Return Performance (%), 12/16/2020 - 12/16/2021



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

Exhibit 4: Business Services Stocks – Return Performance (%), 12/16/2020 - 12/16/2021



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

Exhibit 5: Software Stocks – Comp Table, 2020 - 2022E

	Enterprise Value	EV/S			EV/EBITDA			P/E		
		C20E	C21E	C22E	C20E	C21E	C22E	C20E	C21E	C22E
Enterprise Application Software										
Constellation Software Inc.*	37,339	9.4x	7.4x	6.6x	30.4x	25.0x	22.3x	44.3x	>50	33.1x
BlackBerry Limited*	5,251	5.4x	5.4x	4.9x	26.3x	>50	NEG	37.2x	>50	NEG
Sage Group plc	8,381	4.4x	4.5x	4.3x	16.7x	19.7x	18.4x	29.1x	34.8x	31.1x
Tyler Technologies, Inc.	22,213	19.9x	13.9x	11.9x	>50	>50	44.1x	>50	>50	>50
Roper Technologies, Inc.	58,917	10.7x	10.1x	9.6x	30.3x	26.4x	25.0x	>50	34.2x	31.6x
Enghouse Systems Limited	2,568	5.0x	5.3x	5.2x	13.6x	15.3x	15.0x	24.5x	31.0x	29.3x
Oracle Corporation	332,652	8.5x	8.0x	7.7x	19.4x	16.3x	15.7x	33.7x	21.8x	20.4x
SAP SE	160,735	5.9x	5.8x	5.6x	17.8x	18.1x	17.4x	28.2x	19.4x	22.8x
Enterprise Application Software Average		8.6x	7.6x	7.0x	22.1x	20.1x	22.6x	32.8x	28.2x	28.1x
Extended ERP										
Adobe Inc.	274,485	21.3x	17.2x	14.9x	>50	34.4x	30.2x	>50	45.9x	40.1x
Open Text Corporation	15,000	4.5x	4.4x	4.2x	11.7x	11.8x	11.2x	14.5x	15.0x	13.7x
Manhattan Associates, Inc.	9,412	16.1x	14.4x	13.3x	>50	>50	>50	>50	>50	>50
Pegasystems Inc.	9,233	9.1x	7.4x	6.2x	NEG	>50	>50	NEG	>50	>50
Software AG	2,324	2.8x	2.8x	2.6x	13.0x	13.5x	11.5x	26.9x	24.9x	20.5x
Fiserv, Inc.	89,186	6.0x	5.8x	5.4x	17.8x	13.8x	12.6x	>50	18.8x	16.2x
Extended ERP Average		10.0x	8.6x	7.8x	14.2x	18.4x	16.4x	20.7x	26.2x	22.6x
Software As A Service										
Descartes Systems Group Inc.	6,409	18.4x	15.1x	13.8x	45.2x	34.7x	31.4x	>50	>50	>50
Kinaxis, Inc.*	3,531	15.8x	14.2x	11.4x	>50	>50	>50	>50	>50	>50
Docebo, Inc.*	1,939	30.8x	18.5x	12.8x	NEG	NEG	NEG	NEG	NEG	NEG
Lightspeed Commerce Inc*	4,881	40.5x	10.7x	7.3x	NEG	NEG	NEG	NEG	NEG	NEG
Nuvei Corporation*	7,467	19.9x	10.4x	7.9x	>50	23.8x	18.0x	NEG	30.4x	24.2x
Dye & Durham Ltd.	2,362	27.1x	6.2x	4.3x	48.5x	11.2x	8.0x	NEG	>50	NEG
salesforce.com, inc.	260,136	15.2x	10.0x	8.3x	>50	33.4x	27.3x	>50	>50	>50
Veeva Systems Inc Class A	37,813	34.2x	20.9x	17.6x	>50	49.8x	44.9x	>50	>50	>50
Shopify, Inc. Class A	165,525	>50	36.1x	27.1x	>50	>50	>50	>50	>50	>50
Ceridian HCM Holding, Inc.	16,489	19.6x	16.3x	14.6x	>50	>50	>50	>50	NEG	>50
ServiceNow, Inc.	125,927	27.9x	21.4x	17.0x	>50	>50	>50	>50	>50	>50
Workday, Inc. Class A	67,844	18.7x	13.4x	11.3x	NEG	46.8x	46.1x	NEG	>50	>50
Software As A Service Average		24.4x	16.1x	12.8x	46.8x	33.3x	29.3x	>50	30.4x	24.2x
Infrastructure Vendors										
Citrix Systems, Inc.	13,626	4.2x	4.3x	4.1x	16.4x	12.6x	13.1x	21.2x	17.2x	16.1x
Microsoft Corporation	2,443,147	17.1x	13.4x	11.6x	37.4x	27.1x	23.3x	>50	38.8x	33.7x
Infrastructure Vendors Average		10.6x	8.8x	7.8x	26.9x	19.9x	18.2x	21.2x	28.0x	24.9x
Software Average		15.5x	11.5x	9.7x	24.6x	24.1x	22.9x	28.8x	27.7x	25.6x

*Share Price Converted to USD

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

Exhibit 6: Business Services Stocks – Comp Table, 2020 - 2022E

	Enterprise Value	EV/EBITDA			P/E			EV/S		
		C20E	C21E	C22E	C20E	C21E	C22E	C20E	C21E	C22E
Business & IT Services										
CGI Inc. Class A	29,116	11.9x	11.8x	11.6x	21.8x	19.7x	18.2x	2.4x	2.4x	2.3x
Accenture Plc Class A	253,375	30.4x	25.5x	23.0x	>50	44.2x	38.9x	5.7x	4.8x	4.3x
TELUS International (CDA), Inc.	9,611	31.4x	17.9x	15.1x	>50	33.4x	27.2x	6.1x	4.4x	3.8x
Booz Allen Hamilton	13,499	16.8x	14.9x	13.9x	24.4x	20.0x	18.2x	1.8x	1.6x	1.5x
CACI International Inc Class A	8,194	12.7x	12.1x	11.6x	21.2x	14.5x	13.9x	1.4x	1.3x	1.3x
DXC Technology Co.	11,712	3.9x	4.4x	4.2x	NEG	9.5x	7.7x	0.6x	0.7x	0.7x
Genpact Limited	10,735	16.8x	14.5x	13.2x	32.6x	21.1x	19.1x	2.9x	2.7x	2.4x
International Business Machines	163,388	10.0x	9.0x	8.6x	20.2x	12.5x	11.4x	2.2x	2.2x	2.3x
Atos SE	5,802	3.6x	5.0x	4.5x	7.2x	9.5x	7.5x	0.5x	0.5x	0.5x
Capgemini SE	41,351	17.1x	14.0x	12.7x	37.9x	25.2x	21.7x	2.6x	2.3x	2.1x
Sopra Steria Group SA	3,652	7.6x	7.0x	6.3x	29.3x	14.3x	12.1x	0.9x	0.8x	0.7x
Business & IT Services Average		14.7x	12.4x	11.3x	24.3x	20.4x	17.8x	2.5x	2.2x	2.0x
Human Capital Service Providers										
LifeWorks Inc	2,284	11.3x	10.9x	10.4x	31.4x	22.9x	21.0x	2.3x	2.2x	2.1x
Ceridian HCM Holding, Inc.	16,489	>50	>50	>50	>50	NEG	>50	19.6x	16.3x	14.6x
Willis Towers Watson	32,805	14.3x	12.8x	13.4x	30.8x	18.4x	17.1x	3.5x	3.5x	3.5x
Aon Plc Class A	73,825	23.1x	19.1x	17.9x	35.2x	25.5x	22.7x	6.7x	6.0x	5.7x
Automatic Data Processing, Inc.	100,329	27.7x	25.3x	23.1x	41.0x	36.5x	32.8x	6.9x	6.4x	6.0x
Paychex, Inc.	44,964	26.9x	24.9x	23.0x	41.3x	38.2x	34.9x	11.1x	10.6x	9.9x
Human Capital Service Providers Average		20.7x	18.6x	17.6x	35.9x	28.3x	25.7x	8.3x	7.5x	7.0x
Information Services										
Broadridge Financial Solutions, Inc.	25,124	22.8x	21.5x	19.0x	45.5x	29.7x	26.6x	5.4x	4.8x	4.4x
Dye & Durham Ltd.	3,377	NEG	21.4x	18.4x	NEG	>50	NEG	38.8x	8.9x	6.2x
Deluxe Corporation	2,965	8.7x	7.4x	6.6x	>50	6.6x	6.4x	1.7x	1.5x	1.4x
Information Services Corp.	440	9.2x	6.7x	6.6x	16.5x	12.7x	12.0x	3.2x	2.7x	2.6x
Information Services Average		13.6x	14.2x	12.6x	31.0x	16.3x	15.0x	12.3x	4.4x	3.6x
Software Focused IT Solutions/VARs										
Softcat Plc (£)	3,445	34.8x	27.4x	26.4x	46.1x	36.3x	35.4x	NA	NA	NA
Crayon Group Holding ASA (NOK)	16,193	>50	26.2x	19.3x	>50	>50	32.1x	NA	NA	NA
Bytes Technology Group Plc (£)	1,271	39.2x	28.7x	26.3x	>50	40.0x	37.5x	NA	NA	NA
SoftwareONE Holding Ltd. (CHF)	2,436	13.4x	10.2x	8.5x	16.5x	21.9x	17.2x	NA	NA	NA
Converge Technology Solutions Corp	2,191	36.9x	24.9x	14.5x	NEG	>50	27.9x	NA	NA	NA
Softchoice Corporation*	1,203	18.4x	18.1x	12.1x	26.4x	30.1x	20.7x	NA	NA	NA
Software Focused IT Solutions/VARs Average		28.6x	22.6x	17.9x	29.7x	32.1x	28.5x	NA	NA	NA
Diversified Real Estate Services										
Colliers International Group Inc.	7,308	22.0x	14.0x	12.7x	>50	25.0x	23.4x	2.6x	1.9x	1.8x
Altus Group Limited	3,323	33.6x	31.4x	26.3x	41.5x	41.8x	49.2x	5.9x	5.3x	4.7x
CBRE Group, Inc. Class A	37,784	25.6x	13.6x	12.7x	48.5x	20.2x	18.7x	1.6x	1.4x	1.2x
Jones Lang LaSalle Incorporated	16,893	16.9x	12.4x	11.9x	34.1x	15.0x	14.3x	1.0x	1.6x	1.5x
Diversified Real Estate Services Average		24.5x	17.8x	15.9x	41.3x	25.5x	26.4x	2.8x	2.5x	2.3x
Business Services Average		22.6x	18.8x	16.3x	30.9x	23.9x	22.3x	7.9x	5.2x	4.7x

*Share Price Converted to USD

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

Exhibit 7: SaaS Stocks – Comp Table, 2020 - 2022E

	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		
								C20	C21E	C22E
Tier 1 SaaS (Rule of 40 > 60)										
Zoom Video Communications	100%	43%	16%	33%	143%	48%	49,617	79.7x	12.5x	10.5x
Lightspeed POS, Inc.*	142%	-29%	58%	-5%	113%	54%	4,881	40.5x	10.7x	7.3x
Nuvei*	70%	39%	42%	32%	109%	73%	7,467	19.9x	10.4x	7.9x
CrowdStrike Holdings, Inc.	69%	33%	43%	27%	102%	70%	46,246	96.1x	33.4x	23.7x
Zscaler, Inc.	58%	27%	43%	22%	86%	66%	42,141	97.7x	51.8x	36.6x
Shopify, Inc.	71%	11%	33%	15%	82%	48%	165,525	56.5x	36.1x	27.1x
DocuSign, Inc.	51%	23%	27%	20%	74%	47%	29,730	30.5x	14.6x	11.6x
Veeva Systems Inc	28%	44%	18%	38%	72%	56%	37,813	34.2x	20.9x	17.6x
Atlassian Corp. Plc	31%	37%	21%	27%	68%	48%	91,920	56.9x	39.1x	31.5x
Magnet Forensics*	37%	31%	24%	23%	68%	47%	847	16.5x	12.4x	9.6x
Twilio, Inc.	65%	-2%	34%	-2%	63%	32%	44,096	25.0x	15.9x	12.0x
HubSpot, Inc.	45%	18%	32%	12%	63%	45%	31,538	35.7x	24.5x	19.0x
ServiceNow, Inc.	31%	29%	26%	31%	60%	57%	125,927	27.9x	21.4x	17.0x
Tier 1 SaaS (Rule of 40 > 60) Average								47.5x	23.4x	17.8x
Tier 2 SaaS (Rule of 40 b/w 41-60)										
Docebo, Inc.*	55%	4%	46%	-3%	58%	44%	1,939	30.8x	18.5x	12.8x
Descartes Systems	20%	41%	14%	38%	60%	52%	6,409	18.4x	15.1x	13.8x
Qualys, Inc.	13%	43%	13%	37%	56%	50%	4,933	13.6x	12.0x	10.6x
Avalara Inc	40%	7%	24%	1%	47%	24%	11,402	22.8x	16.6x	13.5x
Mimecast Limited	20%	28%	14%	23%	47%	37%	5,120	12.0x	9.0x	7.8x
Dropbox, Inc.	13%	34%	10%	32%	47%	42%	10,169	5.3x	4.7x	4.3x
Workday, Inc.	18%	28%	19%	23%	46%	43%	67,844	18.7x	13.4x	11.3x
VMware, Inc.	9%	33%	7%	27%	43%	35%	47,906	4.4x	3.8x	3.5x
Five9, Inc.	41%	0%	25%	4%	41%	29%	9,409	21.6x	15.6x	12.6x
Tier 2 SaaS (Rule of 40 b/w 41-60) Average								16.4x	12.1x	10.0x
Tier 3 SaaS (Rule of 40 b/w 25-40)										
Wix.com Ltd.	34%	6%	18%	4%	40%	22%	7,966	8.1x	6.3x	5.2x
Zendesk, Inc.	28%	12%	28%	9%	40%	37%	12,274	11.9x	9.2x	7.3x
BlackLine, Inc.	21%	17%	20%	11%	38%	32%	5,852	16.6x	13.8x	11.4x
RingCentral, Inc.	34%	3%	26%	5%	38%	31%	17,973	15.2x	11.4x	9.1x
Paylocity Holding Corp.	19%	16%	25%	14%	36%	40%	12,661	22.6x	17.4x	14.0x
MongoDB, Inc.	43%	-4%	37%	-2%	39%	35%	32,626	77.4x	39.4x	29.1x
Rapid7 Inc.	27%	8%	24%	2%	35%	27%	7,306	17.8x	13.8x	11.2x
Anaplan, Inc.	30%	0%	24%	1%	30%	25%	6,527	18.8x	11.4x	9.1x
Akamai Technologies, Inc.	9%	21%	8%	23%	30%	31%	19,846	6.2x	5.7x	5.3x
Tier 3 SaaS (Rule of 40 b/w 25-40) Average								21.6x	14.3x	11.3x
Tier 4 SaaS (Rule of 40 <28)										
LivePerson, Inc.	30%	-3%	24%	-15%	27%	9%	2,506	6.8x	5.3x	4.2x
Teradata Corporation	5%	20%	0%	19%	26%	19%	4,630	2.5x	2.4x	2.4x
Q2 Holdings Inc.	25%	-3%	18%	2%	22%	20%	4,736	11.8x	9.5x	8.1x
Ceridian HCM Holding, Inc.	30%	-9%	19%	5%	21%	23%	16,489	19.6x	16.3x	14.6x
Zuora, Inc.	13%	5%	15%	0%	18%	15%	2,322	8.4x	6.8x	5.8x
Kinaxis, Inc.*	-1%	10%	25%	1%	9%	26%	3,531	15.8x	14.2x	11.4x
New Relic, Inc.	12%	-3%	18%	4%	8%	22%	6,478	10.8x	8.6x	7.4x
Yext, Inc.	11%	-2%	12%	-1%	9%	11%	1,250	4.2x	3.2x	2.8x
Splunk Inc.	11%	-2%	14%	5%	9%	19%	19,680	8.3x	7.8x	6.6x
Tier 4 SaaS (Rule of 40 <28) Average								9.8x	8.2x	7.1x
SaaS Average								26.2x	15.4x	12.2x

* Share Price Converted to USD

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

Exhibit 8: SaaS Stocks – Comp Table, 2020 - 2022E

	LTM	LTM FCF	NTM Revenue	NTM FCF	LTM	NTM	Enterprise	EV/S			EV/EBITDA		
	Revenue	Margin	Growth	Margin	Rule Of	Rule Of	Value (\$MM)	C20	C21E	C22E	C20	C21E	C22E
Tier 1 Mature Software (Rule of 40 > 45)													
Facebook, Inc. Class A	42%	32%	17%	26%	74%	43%	910,428	10.6x	7.7x	6.5x	23.0x	14.1x	13.6x
Alphabet Inc. Class C	40%	27%	18%	26%	67%	44%	1,843,735	10.1x	7.3x	6.2x	33.7x	17.4x	15.3x
Aspen Technology, Inc.	28%	39%	0%	38%	67%	38%	10,195	17.0x	14.2x	13.3x	36.9x	26.0x	26.1x
Intuit Inc.	32%	32%	24%	30%	64%	54%	182,471	23.8x	17.0x	14.1x	>50	44.5x	36.5x
Microsoft Corporation	20%	34%	15%	30%	54%	46%	2,443,147	17.1x	13.4x	11.6x	37.4x	27.1x	23.3x
ANSYS, Inc.	21%	32%	8%	26%	53%	34%	35,065	20.9x	18.3x	16.7x	>50	41.5x	36.4x
Progress Software	18%	35%	12%	33%	53%	NA	2,308	5.2x	4.2x	4.2x	14.4x	10.1x	10.1x
Tyler Technologies, Inc.	28%	23%	26%	23%	51%	49%	22,213	19.9x	13.9x	11.9x	>50	>50	44.1x
Cadence Design Systems, I	18%	32%	6%	32%	50%	38%	49,942	18.6x	16.8x	15.5x	>50	41.8x	37.9x
Tier 1 Mature Software (Rule of 40 > 45) Average								15.9x	12.5x	11.1x	29.1x	27.8x	27.0x
Tier 2 Mature Software (Rule of 40 b/w 31-50)													
eBay Inc.	25%	23%	-3%	26%	49%	23%	44,824	4.4x	4.3x	4.1x	13.5x	11.3x	11.0x
Autodesk, Inc.	16%	33%	16%	37%	49%	54%	61,601	18.9x	14.3x	12.2x	>50	42.9x	31.1x
J2 Global, Inc.	22%	27%	-14%	21%	49%	7%	6,517	4.4x	4.4x	4.1x	11.2x	11.9x	11.0x
salesforce.com, inc.	23%	25%	22%	18%	48%	39%	260,136	15.2x	10.0x	8.3x	>50	33.4x	27.3x
SPS Commerce, Inc.	21%	23%	17%	22%	44%	39%	4,886	15.6x	12.8x	11.0x	>50	46.2x	38.8x
Constellation Software Inc	18%	26%	20%	25%	44%	45%	37,339	9.4x	7.4x	6.6x	30.4x	25.0x	22.3x
PTC Inc.	24%	19%	7%	20%	43%	26%	15,139	10.4x	8.2x	7.7x	45.5x	21.5x	20.3x
Manhattan Associates, Inc.	8%	28%	8%	22%	36%	30%	9,412	16.1x	14.4x	13.3x	>50	>50	>50
Oracle Corporation	5%	17%	4%	26%	22%	31%	332,652	8.5x	8.0x	7.7x	19.4x	16.3x	15.7x
SS&C Technologies Holding	6%	27%	4%	27%	33%	31%	26,594	5.7x	5.3x	5.1x	15.3x	13.0x	12.3x
Tier 2 Mature Software (Rule of 40 b/w 31-50) Average								10.9x	8.9x	8.0x	22.5x	24.6x	21.1x
Tier 3 Mature Software (Rule of 40 b/w 20-30)													
Open Text Corporation	6%	23%	1%	29%	29%	31%	15,000	4.5x	4.4x	4.2x	11.7x	11.8x	11.2x
Jack Henry & Associates, In	5%	24%	9%	19%	29%	28%	11,855	7.0x	6.5x	6.0x	17.6x	19.9x	18.3x
Cerner Corporation	3%	26%	6%	16%	29%	22%	24,386	4.4x	4.2x	4.0x	15.4x	12.8x	11.8x
CommVault Systems, Inc.	8%	19%	5%	20%	27%	25%	2,788	4.2x	3.7x	3.5x	>50	17.5x	15.9x
QuinStreet, Inc.	19%	6%	12%	10%	25%	21%	901	1.8x	1.5x	1.3x	>50	15.3x	12.5x
Enghouse Systems Limite	-4%	26%	7%	31%	23%	38%	2,568	5.0x	5.3x	5.2x	13.6x	15.3x	15.0x
Blackbaud, Inc.	2%	21%	2%	16%	23%	17%	4,439	4.9x	4.8x	4.7x	33.1x	18.5x	18.2x
Blucora, Inc.	15%	6%	9%	9%	22%	19%	1,244	1.6x	1.4x	1.3x	17.2x	9.1x	7.7x
ADP Inc.	6%	17%	7%	25%	22%	32%	100,329	6.9x	6.4x	6.0x	27.7x	25.3x	23.1x
Pegasystems Inc.	20%	1%	18%	7%	21%	26%	9,233	9.1x	7.4x	6.2x	NEG	>50	>50
Tier 3 Mature Software (Rule of 40 b/w 20-30) Average								4.9x	4.6x	4.2x	19.5x	16.2x	14.9x
Tier 4 Mature Software (Rule of 40 <20)													
Altus Group Limited	7%	12%	17%	12%	20%	29%	3,323	5.9x	5.3x	4.7x	33.6x	31.4x	26.3x
Alteryx, Inc. Class A	6%	10%	12%	-1%	16%	11%	4,456	9.0x	8.4x	7.2x	>50	>50	>50
Citrix Systems, Inc.	-2%	18%	3%	21%	16%	24%	13,626	4.2x	4.3x	4.1x	16.4x	12.6x	13.1x
SAP SE	-2%	16%	5%	19%	15%	23%	160,735	5.9x	5.8x	5.6x	17.8x	18.1x	17.4x
Guidewire Software, Inc.	-2%	2%	9%	4%	0%	13%	9,085	12.2x	11.9x	11.0x	>50	>50	NEG
Verint Systems Inc.	5%	13%	-7%	18%	17%	11%	3,507	2.7x	3.9x	3.8x	19.6x	14.1x	13.5x
ManTech International	3%	8%	4%	5%	11%	9%	2,838	1.1x	1.1x	1.1x	11.1x	10.7x	11.2x
Software AG	-2%	12%	4%	12%	10%	16%	2,324	2.8x	2.8x	2.6x	13.0x	13.5x	11.5x
BlackBerry Limited	-27%	8%	35%	-1%	-20%	34%	5,251	5.0x	5.5x	4.9x	>50	NEG	NEG
Mature Software Average								9.2x	7.8x	7.0x	22.0x	21.6x	20.0x

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

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