

EQUITY RESEARCH

January 13, 2022

Industry Update

Regulating Unicorns – Bits & Bytes Weekly

SEC Starts Push For Increased Private Disclosures

Our Conclusion

While 2021 was in many ways defined by the large number of IPOs, the trend of companies remaining private and raising mega rounds of venture capital was also pronounced. The growing number of unicorns has raised concern at the SEC, which is now working on a plan to require more private companies to disclose financial and operational data. Lawmakers are concerned about the lack of regulatory oversight for large private companies, especially given the widespread impact and reach that many of the private companies with the richest valuations have. Plans for additional private disclosures remain in their early stages and appear certain to attract significant pushback given the administrative burden that would result from the disclosure requirements. While new private company disclosure rules may not be on the immediate horizon, the topic being broached by the SEC highlights an interesting development that has resulted from the shift towards companies remaining private for longer.

Key Points

2021 was a record year for the U.S. venture capital industry, with Pitchbook noting that investors deployed more than US\$71 billion across 340 unicorn deals (valuations of +\$1 billion). The number of unicorns in 2021 surpassed the combined total of each of the past five years. Globally, VC financing reached a record US\$621 billion in 2021 as non-traditional investors (mutual funds, hedge funds, sovereign wealth funds) made up an increasing piece of VC financing and increased competition for deals.

The growing number of unicorns and large late-stage funding rounds has led to concerns about waning interest in the IPO process for well funded companies. This certainly didn't lead to a slowdown in the number of companies looking to IPO in 2021, but it has likely contributed to the performance of some of those newly public companies. In 2021, 50% of the companies that went public in North America are currently trading below their IPO prices.

A push for additional private company disclosure is not entirely unprecedented, as the SEC does currently have disclosure requirements for private companies that have more than 2,000 shareholders. However, those rules are rarely triggered as many shareholders that invest collectively through an entity (VC fund, etc.) are counted as a single shareholder. Given the early stage nature of these discussions, it is unclear whether legislators would seek to lower the 2,000 shareholder threshold, or look to better identify the actual number of individual shareholders invested as LPs in venture capital and private equity investment stakes. The proposed disclosure requirements may also include an ESG component, as SEC commission Gensler has been clear in his desire to improve public company disclosure around climate risk.

All figures in Canadian dollars unless otherwise stated.

CIBC CAPITAL MARKETS

Stephanie Price, CFA +1 416-594-7047 Stephanie.Price@cibc.com Scott Fletcher, CPA, CA +1 416-956-3229 Scott.Fletcher@cibc.com

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

Sector: Information Technology

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

Valuations Continue To Climb For Private Tech Companies

2021 saw valuations continue to climb for the largest private companies. According to our calculations, the top 46 decacorns saw an average 2.8x valuation expansion during the year.

Exhibit 1: CB Insights - Largest Tech Unicorn Valuations, 2020 - 2021

Company	Valuation (US\$B) - 2021	Valuation (US\$B) - 2020	Country	Industry	Select Investors
ByteDance	\$140	\$140	China	Artificial intelligence	Sequoia Capital China, SIG Asia Investments, Sina Weibo, Softbank Group
SpaceX	\$100.3	\$46	U.S.	Other	Founders Fund, Draper Fisher Jurvetson, Rothenberg Ventures
Stripe	\$95	\$36	U.S.	Fintech	Khosla Ventures, LowercaseCapital, capitalG
Klarna	\$45.6	\$10.6	Sweden	Fintech	Institutional Venture Partners, Sequoia Capital, General Atlantic
Epic Games	\$42	\$17	U.S.	Other	Tencent Holdings, KKR, Smash Ventures
Canva	\$40	\$6	AUS	Internet software & services	Sequoia Capital China, Blackbird Ventures, Matrix Partners
Instacart	\$39	\$14	U.S.	Logistics, & delivery	Khosla Ventures, Kleiner Perkins Caufield & Byers, Collaborative Fund
Databricks	\$38	\$6	U.S.	Data analytics	Andreessen Horowitz, New Enterprise Associates, Battery Ventures
Revolut	\$33	\$5.5	U.K.	Fintech	index Ventures, DST Global, Ribbit Capital
Chime	\$25	\$15	U.S.	Fintech	Forerunner Ventures, Crosslink Capital, Homebrew

Source: CB Insights and CIBC World Markets Inc.

Venture capital also saw record fund raises in 2021, with annual U.S. venture funding more than doubling to hit a record high of US\$311 billion, according to CB Insights. Global financing hit US\$621 billion, more than double the 2020's record of US\$294 billion.

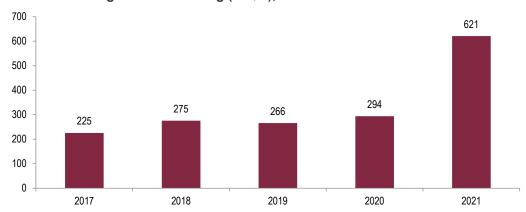


Exhibit 2: CB Insights - VC Funding (US\$B), 2017 - 2021

Source: CB Insights and CIBC World Markets Inc.

News Impacting Our Coverage

Research Highlight – Converge Acquires Paragon Development Systems

Converge announced the acquisition of Paragon Development Systems (PDS), an IT & Cloud solutions provider based in Milwaukee, WI. The PDS acquisition is in line with CTS' strategy and builds out its digital transformation, virtualization, and managed services solutions. CTS is acquiring PDS for US\$52 million or 5.8x TTM EBITDA, a slight premium to historical acquisition multiples (~5x), which we view as reasonable given PDS' mix of business. We make no changes to our model, given an expected 2022 M&A spend of \$200 million. (Link)

Docebo Appoints New Chief Product Officer

Docebo announced the appointment of Enis Konuk as its new Chief Product Officer, effective February 26, 2022. Mr. Konuk brings more than 35 years of experience as a product leader in the tech industry, with experience including founding and selling Quiklabs Learning Management Systems to Google, managing the learning technologies at Google Cloud.

Enghouse Announces Leadership Transition For VP Finance Role

Enghouse announced that Doug Bryson will be retiring from his position as VP Finance and Corporate Secretary, effective March 31, 2022. He will remain in an advisory capacity to aid transition. During his 23 year tenure at Enghouse, Mr. Bryson led the finance team in overseeing more than 50 acquisitions. The company is appointing Robert Medved, the current Corporate Controller, to succeed Mr. Bryson. Mr. Medved joined Enghouse in 2017, and previously held senior finance and operational roles at Reliance Home Comfort and Pitney Bowes.

TELUS International Announces Collaboration With Automation Anywhere

TELUS International is collaborating with Automation Anywhere, which specializes in process automation (RPA), to accelerate automation adoption on Google Cloud. TELUS International, now a Platinum Preferred Partner and Managed Services Provider of Automation Anywhere, continues to help the end-to-end development of RPA solutions on Google Cloud. As part of the collaboration, TIXT intends to provide on-demand RPA-as-a-Service solutions to customers with need to transform their automation life cycle using Automation Anywhere's cloud-native, AI-powered Automation 360 platform.

CGI To Develop Data Management Environment At Department Of The Interior

CGI announced it has won a new task order from the Department of the Interior's (DOI) Office of Natural Revenue (ONRR) to develop a new data management environment to improve the collection and disbursement royalties. The new Data Management Environment (DME) will help ONRR's management of oil, gas, and other natural resources. The cloudbased, platform-as-a-service DME will integrate with AWS native tools and Snowflake's platform-as-a-service solution for data consolidation and dissemination. The task force includes a three-year period with initial funding of US\$3.3M and a total task order value of US\$12.9M.

Descartes Wins Contract With Fishing Tackle & Bait

Descartes announced that the U.K.-based sports retailer Fishing Tackle & Bait has improved its international fulfilment capabilities with Descartes' cloud-based e-commerce warehouse management solution (WMS). The retailer saw its order processing capacity improve by 250% without additional labor and has reduced customer service queries by more than 70%.



Exhibit 3: CIBC Software/Services – Coverage Performance, 1/13/2021 - 1/13/2022

Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Constellation Software Inc	2,163.59	0.0	(0.5)	1.5	13.1	34.3	(7.8)	2385.80	1530.35
Descartes Systems	71.72	(3.6)	(6.9)	(14.0)	2.6	25.5	(13.3)	91.39	56.78
Dye & Durham	41.95	1.2	(8.0)	16.2	(10.1)	NA	(6.5)	53.13	35.51
Enghouse Systems Limited	45.44	(2.5)	(10.0)	(18.2)	(19.4)	(30.6)	(6.2)	65.99	42.30
Open Text Corp	47.53	2.4	1.5	(3.8)	(6.1)	5.1	0.1	55.25	44.03
Kinaxis	159.89	(3.6)	(10.6)	(15.3)	(1.2)	(6.3)	(9.8)	229.98	124.05
Docebo, Inc.	68.57	(0.2)	(18.9)	(27.1)	(10.0)	(9.9)	(19.2)	117.55	47.22
Q4 Inc.	8.10	(4.2)	(7.3)	NA	NA	NA	NA	12.05	7.90
Average		(1.3)	(7.6)	(8.7)	(4.5)	3.0	(9.0)		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52W High	52W Low
Altus Group Ltd	67.49	(3.2)	(4.3)	6.7	15.0	37.6	(4.9)	72.33	47.81
CGI Group Inc	107.07	(1.4)	(3.2)	(3.2)	(6.3)	6.1	(4.3)	116.88	93.88
Converge Technologies	9.78	(5.2)	(15.9)	2.5	(12.6)	54.5	(10.0)	13.09	4.58
Information Services Corp	26.30	1.5	7.1	(0.8)	(10.9)	24.2	0.2	33.87	20.26
LifeWorks Inc	26.31	2.4	2.9	(18.0)	(23.5)	(16.9)	3.1	37.56	24.20
Softchoice Corporation	21.05	3.4	(0.9)	(27.9)	NA	NA	NA	45.74	18.63
Telus International	36.94	(4.1)	(10.0)	(16.3)	(0.9)	NA	NA	49.43	34.00
Average		(0.9)	(3.5)	(8.1)	(6.5)	21.1	(3.2)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	21,360.55	1.4	3.0	3.6	5.4	19.1	0.6
S&P 500 Index	4,688.31	(0.2)	0.4	7.4	7.3	23.1	(1.6)
S&P/TSX Software Index	190.69	(2.4)	(8.6)	(14.3)	(12.2)	3.1	(10.2)
S&P500 Software Index	5,347.76	(1.6)	(10.7)	(1.1)	4.8	30.8	(8.5)



Exhibit 4: Software Stocks – Return Performance (%), 1/13/2021 - 1/13/2022

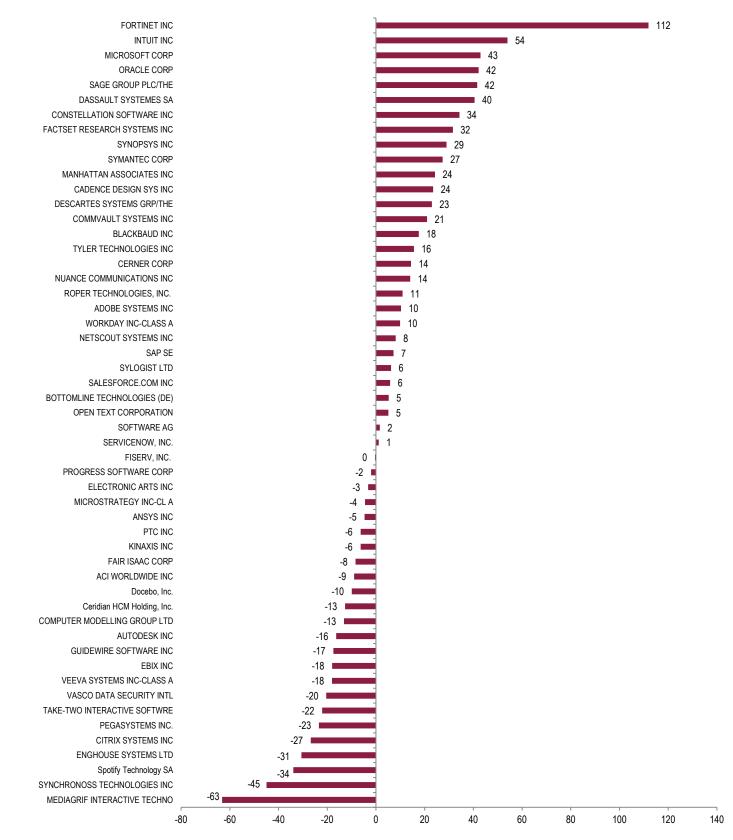


Exhibit 5: Business Services Stocks – Return Performance (%), 1/13/2021 - 1/13/2022

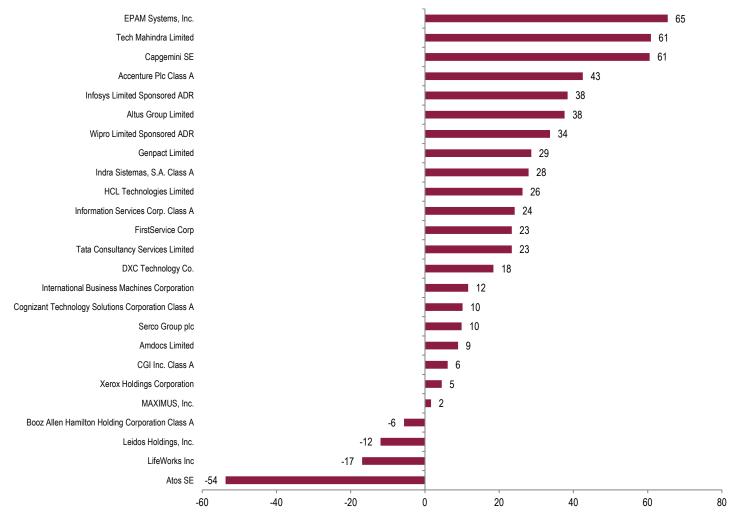


Exhibit 6: Software Stocks – Comp Table, 2020 - 2022E

	Enterprise		EV/S			EV/EBITD/	A		P/E	
	Value	C20	C21E	C22E	C20	C21E	C22E	C20	C21E	C22E
Enterprise Application Software										
Constellation Software Inc.*	36,614	9.2x	7.2x	6.1x	29.8x	24.6x	20.9x	43.9x	>50	31.3x
BlackBerry Limited*	5,296	5.5x	5.4x	5.2x	26.5x	>50	NEG	37.7x	>50	NEG
Sage Group plc	8,428	4.5x	4.5x	4.3x	18.0x	19.8x	18.5x	30.6x	34.0x	30.2x
Tyler Technologies, Inc.	19,334	17.3x	12.1x	10.4x	>50	44.7x	38.3x	>50	>50	>50
Roper Technologies, Inc.	57,879	10.4x	9.9x	9.5x	29.1x	26.0x	24.6x	36.0x	32.4x	30.0x
Enghouse Systems Limited	2,351	4.6x	5.1x	4.7x	12.5x	14.2x	13.7x	22.7x	27.1x	27.2x
Oracle Corporation	276,122	6.9x	6.6x	6.4x	14.0x	13.5x	13.0x	20.3x	18.6x	17.3x
SAP SE	156,553	5.7x	5.7x	5.4x	16.7x	17.7x	16.9x	22.3x	18.8x	22.5x
Enterprise Application Software A	verage	8.0x	7.1x	6.5x	20.9x	22.9x	20.9x	30.5x	26.2x	26.4x

Extended ERP										
Adobe Inc.	246,624	18.8x	15.4x	13.6x	38.4x	31.0x	27.9x	>50	41.3x	37.2x
Open Text Corporation	15,229	4.6x	4.4x	4.3x	11.9x	12.0x	11.4x	14.6x	15.1x	13.8x
Manhattan Associates, Inc.	8,723	14.9x	13.3x	12.3x	>50	49.3x	>50	>50	>50	>50
Pegasystems Inc.	8,377	8.2x	6.7x	5.6x	>50	>50	>50	NEG	>50	>50
Software AG	2,223	2.7x	2.7x	2.5x	11.6x	13.0x	11.0x	19.5x	23.8x	19.6x
Fiserv, Inc.	92,881	6.7x	6.0x	5.6x	17.1x	14.4x	13.2x	24.8x	19.7x	17.0x
Extended ERP Average		9.3x	8.1x	7.3x	19.7x	23.9x	15.9x	19.7x	25.0x	21.9x

Software As A Service										
Descartes Systems Group Inc.	5,951	17.1x	14.0x	12.6x	42.0x	32.2x	29.3x	>50	>50	>50
Kinaxis, Inc.*	3,297	14.7x	13.3x	10.6x	>50	>50	>50	>50	>50	>50
Docebo, Inc.*	1,581	25.1x	15.1x	10.4x	NEG	NEG	NEG	NEG	NEG	NEG
Lightspeed Commerce Inc*	4,928	25.0x	10.8x	7.4x	NEG	NEG	NEG	NEG	NEG	NEG
Veeva Systems Inc Class A	33,939	23.7x	18.7x	15.8x	>50	44.7x	40.3x	>50	>50	>50
Shopify, Inc. Class A	130,013	44.4x	28.4x	21.3x	>50	>50	>50	>50	>50	>50
Q4 Inc*	206	5.1x	3.8x	2.9x	NEG	NEG	NEG	NEG	NEG	NEG
Ceridian HCM Holding, Inc.	13,656	16.2x	13.4x	11.5x	>50	>50	>50	>50	>50	>50
ServiceNow, Inc.	104,026	23.0x	17.7x	14.1x	>50	>50	44.3x	>50	>50	>50
Workday, Inc. Class A	61,636	14.5x	12.2x	10.2x	>50	42.3x	42.0x	>50	>50	>50
Software As A Service Average		20.9x	14.7x	11.7x	42.0x	39.7x	39.0x	>50	>50	>50
Infrastructure Vendors										
Citrix Systems, Inc.	13,102	4.0x	4.1x	3.9x	11.4x	12.1x	12.6x	15.8x	19.5x	18.3x
Microsoft Corporation	2 272 407	14 Gv	10 Ev	10.00	20.64	25 2v	21 7v	11 Ov	26 Ov	21.24

Microsoft Corporation	2,273,487	14.6x	12.5x	10.8x	30.6x	25.2x	21.7x	44.9x	36.0x	31.3x
Infrastructure Vendors Average		9.3x	8.3x	7.4x	21.0x	18.7x	17.1x	30.4x	27.7x	24.8x
Software Average		13.4x	10.4x	8.8x	22.1x	25.7x	23.5x	27.8x	26.0x	24.6x
*Share Price Converted to USD										

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

	Enterprise	E	V/EBITDA			P/E			EV/S	
	Value	C20	C21E	C22E	C20	C21E	C22E	C20	C21E	C22E
Business & IT Services										
CGI Inc. Class A	27,777	11.3x	11.3x	11.0x	21.4x	19.4x	17.9x	2.3x	2.3x	2.2x
TELUS International (CDA), Inc.	8,846	22.4x	16.3x	14.0x	41.8x	30.2x	24.6x	5.3x	4.0x	3.5x
Accenture Plc Class A	236,554	27.3x	23.4x	20.3x	46.3x	39.1x	33.5x	5.1x	4.4x	3.8x
Booz Allen Hamilton	13,220	16.1x	14.5x	13.6x	23.1x	20.7x	18.9x	1.7x	1.6x	1.5x
CACI International Inc Class A	8,544	13.7x	12.6x	12.1x	17.9x	15.0x	14.4x	1.5x	1.4x	1.3x
DXC Technology Co.	12,677	4.6x	4.7x	4.5x	10.7x	10.2x	8.3x	0.7x	0.8x	0.8x
Genpact Limited	11,195	16.5x	15.1x	13.8x	24.8x	21.7x	19.6x	3.0x	2.8x	2.6x
International Business Machines	173,585	11.4x	9.6x	9.3x	16.3x	13.6x	12.4x	2.4x	2.5x	2.6x
Atos SE	5,290	3.6x	5.2x	4.5x	4.7x	9.8x	10.2x	0.5x	0.5x	0.5x
Capgemini SE	40,643	16.4x	13.7x	12.4x	27.9x	24.1x	20.8x	2.6x	2.2x	2.1x
Sopra Steria Group SA	4,612	10.1x	8.8x	7.9x	21.3x	15.2x	12.8x	1.1x	1.0x	0.9x
Business & IT Services Average		14.0x	12.3x	11.2x	23.3x	19.9x	17.6x	2.4x	2.1x	2.0x

HR Outsourcing		EV/EBITDA				P/E		EV/S		
LifeWorks Inc	2,367	11.8x	11.6x	10.7x	33.0x	NEG	31.2x	2.4x	2.3x	2.2x
Ceridian HCM Holding, Inc.	13,656	>50	>50	>50	>50	>50	>50	16.2x	13.4x	11.5x
Willis Towers Watson	33,557	13.6x	13.1x	13.8x	19.9x	18.2x	16.9x	3.6x	3.6x	3.5x
Aon Plc Class A	69,948	21.3x	18.1x	16.9x	28.8x	24.3x	21.6x	6.3x	5.7x	5.4x
Automatic Data Processing, Inc.	99,111	27.1x	25.0x	22.8x	39.0x	36.4x	32.7x	6.7x	6.4x	5.9x
Paychex, Inc.	45,816	27.2x	24.7x	22.5x	42.1x	37.6x	33.7x	11.3x	10.6x	9.8x
HR Outsourcing Average		20.2x	18.5x	17.4x	32.6x	29.1x	27.2x	7.8x	7.0x	6.4x

Information Services		EV/EBITDA				P/E			EV/S	EV/S		
Broadridge Financial Solutions, Inc.	23,239	21.9x	19.8x	17.5x	31.0x	27.4x	24.6x	4.9x	4.4x	4.1x		
Dye & Durham Ltd.	3,051	NEG	19.4x	13.9x	NEG	>50	>50	35.1x	8.0x	5.1x		
Deluxe Corporation	2,038	5.6x	5.1x	4.5x	6.5x	6.7x	6.5x	1.1x	1.0x	0.9x		
Information Services Corp	511	10.7x	7.8x	7.7x	18.1x	13.9x	13.1x	3.7x	3.1x	3.0x		
Information Services Average		12.7x	13.0x	10.9x	18.5x	16.0x	14.7x	11.2x	4.1x	3.3x		

Financial Services Technology		EV/EBITDA				P/E		EV/S		
Fidelity National Information Services	90,887	17.3x	14.8x	13.5x	21.7x	18.1x	16.1x	7.2x	6.5x	6.1x
Fiserv, Inc.	92,881	17.1x	14.4x	13.2x	24.8x	19.7x	17.0x	6.7x	6.0x	5.6x
Jack Henry & Associates, Inc.	12,718	22.8x	21.3x	19.6x	42.6x	38.5x	34.5x	7.4x	6.9x	6.4x
ACI Worldwide, Inc.	5,183	14.4x	13.5x	12.8x	>50	31.1x	27.1x	4.0x	3.8x	3.6x
Temenos AG	9,859	24.3x	22.6x	20.1x	35.1x	30.9x	27.5x	11.0x	10.0x	9.1x
Global Payments Inc.	52,010	17.3x	14.4x	12.9x	23.6x	18.5x	15.8x	7.7x	6.7x	6.1x
Bottomline Technologies	2,558	26.2x	24.9x	22.7x	48.4x	49.5x	46.3x	5.6x	5.2x	4.6x
Financial Services Technology Average	•	19.9x	18.0x	16.4x	32.7x	29.5x	26.3x	7.1x	6.5x	6.0x

Diversified Real Estate Services		E	V/EBITDA			P/E			EV/S	
Colliers International Group Inc.	7,250	20.1x	13.9x	12.6x	33.6x	24.4x	22.8x	2.6x	1.9x	1.7x
Altus Group Limited	3,133	31.7x	29.6x	24.8x	40.7x	41.1x	48.3x	5.6x	5.0x	4.4x
CBRE Group, Inc. Class A	37,800	20.3x	13.6x	12.7x	32.6x	19.9x	18.5x	1.6x	1.4x	1.2x
Jones Lang LaSalle Incorporated	15,797	18.4x	11.5x	11.1x	28.0x	15.1x	14.4x	1.8x	1.5x	1.4x
Diversified Real Estate Services Averag	e	22.6x	17.2x	15.3x	33.7x	25.1x	26.0x	2.9x	2.4x	2.2x

Software Focused IT Solutions/VARs		E	V/EBITDA			P/E			EV/GP		
Softchoice Corporation*	1,481	22.6x	22.3x	14.8x	32.8x	37.4x	25.8x	6.2x	5.4x	4.7x	
Softcat Plc*	3,264	26.2x	18.9x	18.3x	35.2x	25.4x	24.9x	11.0x	8.5x	7.8x	
Crayon Group Holding ASA*	13,509	>50	>50	>50	>50	>50	>50	>50	39.2x	29.9x	
Bytes Technology Group Plc*	1,230	29.7x	20.2x	18.6x	40.4x	26.6x	25.0x	12.6x	8.7x	7.9x	
SoftwareONE Holding Ltd.*	2,451	12.7x	9.4x	8.0x	15.4x	19.8x	16.0x	11.0x	2.7x	2.4x	
Bytes Technology Group Plc* Average		22.8x	17.7x	14.9x	30.9x	27.3x	22.9x	10.2x	12.9x	10.5x	

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

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

Г

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

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise		EV/S	
	Growth	Margin	Growth	Margin	Of 40	Of 40	Value (\$MM)	C20	C21E	C22E
Tier 1 SaaS (Rule of 40 > 60)										
Zoom Video Communications	100%	43%	15%	33%	143%	48%	46,664	18.8x	11.8x	9.9x
CrowdStrike Holdings, Inc.	69%	33%	43%	27%	102%	70%	41,978	49.9x	30.3x	21.5x
Shopify, Inc.	71%	11%	33%	15%	82%	48%	141,322	48.2x	30.9x	23.1x
Zscaler, Inc.	58%	27%	43%	22%	86%	66%	37,842	71.0x	46.5x	32.9x
Lightspeed POS, Inc.	142%	-29%	58%	-5%	113%	54%	5,074	25.8x	11.1x	7.6x
DocuSign, Inc.	51%	23%	27%	20%	74%	47%	27,697	19.6x	13.6x	10.8x
Veeva Systems Inc	28%	44%	18%	38%	72%	56%	35,257	24.6x	19.4x	16.5x
Atlassian Corp. Plc	31%	37%	21%	27%	68%	48%	80,403	43.3x	34.2x	27.5x
Twilio, Inc.	65%	-2%	34%	-2%	63%	32%	38,075	21.6x	13.7x	10.4x
ServiceNow, Inc.	31%	29%	26%	31%	60%	57%	113,145	25.0x	19.2x	15.3x
HubSpot, Inc.	45%	18%	32%	12%	63%	45%	23,549	26.7x	18.3x	14.2x
Tier 1 SaaS (Rule of 40 > 60)	Average							34.0x	22.7x	17.3x

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise		EV/S	
	Growth	Margin	Growth	Margin	Of 40	Of 40	Value (\$MM)	C20	C21E	C22E
Tier 2 SaaS (Rule of 40 b	/w 40-60)									
Docebo, Inc.	55%	4%	46%	-3%	58%	44%	1,627	25.9x	15.6x	10.7x
Qualys, Inc.	13%	43%	13%	37%	56%	50%	4,653	12.8x	11.4x	10.0x
Descartes Systems	20%	41%	14%	38%	60%	52%	6,064	18.6x	17.4x	14.3x
Avalara Inc	40%	7%	24%	1%	47%	24%	9,537	19.1x	13.9x	11.3x
Five9, Inc.	41%	0%	25%	4%	41%	29%	9,108	20.9x	15.1x	12.2x
Dropbox, Inc.	13%	34%	10%	32%	47%	42%	9,614	5.0x	4.5x	4.1x
Mimecast Limited	20%	28%	14%	23%	47%	37%	5,234	10.8x	9.2x	7.9x
Wix.com Ltd.	34%	6%	18%	4%	40%	22%	8,507	8.6x	6.7x	5.6x
Workday, Inc.	18%	28%	19%	23%	46%	42%	63,189	14.8x	12.5x	10.5x
VMware, Inc.	9%	33%	7%	27%	43%	35%	52,934	4.5x	4.2x	3.8x
Tier 2 SaaS (Rule of 40 b	/w 40-60) Average							14.1x	11.0x	9.0x

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise		EV/S	
	Growth	Margin	Growth	Margin	Of 40	Of 40	Value (\$MM)	C20	C21E	C22E
Tier 3 SaaS (Rule of 40 b/w :	28-40)									
BlackLine, Inc.	21%	17%	20%	11%	38%	32%	5,500	15.6x	13.0x	10.7x
Zendesk, Inc.	28%	12%	28%	9%	40%	37%	12,601	12.2x	9.5x	7.5x
MongoDB, Inc.	43%	-4%	37%	-2%	39%	35%	28,955	50.3x	34.9x	25.9x
LivePerson, Inc.	30%	-3%	24%	-15%	27%	9%	2,318	6.3x	4.9x	3.9x
Rapid7 Inc.	27%	8%	24%	2%	35%	27%	5,973	14.5x	11.3x	9.2x
Paylocity Holding Corp.	19%	16%	26%	14%	36%	40%	11,610	19.4x	16.0x	12.8x
Q2 Holdings, Inc.	25%	-3%	18%	2%	22%	20%	4,264	10.5x	8.5x	7.3x
Akamai Technologies, Inc.	9%	21%	8%	23%	30%	31%	20,219	6.3x	5.9x	5.4x
Tier 3 SaaS (Rule of 40 b/w	28-40) Average							16.9x	13.0x	10.3x

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise		EV/S	
	Growth	Margin	Growth	Margin	Of 40	Of 40	Value (\$MM)	C20	C21E	C22E
Tier 4 SaaS (Rule of 40 <28)					-					
RingCentral, Inc.	34%	3%	26%	5%	38%	31%	18,167	15.3x	11.5x	9.2x
Teradata Corporation	5%	20%	0%	20%	26%	20%	4,972	2.7x	2.6x	2.6x
Anaplan, Inc.	30%	0%	24%	1%	30%	25%	6,633	15.1x	11.6x	9.3x
Zuora, Inc.	13%	5%	15%	0%	18%	15%	2,012	6.6x	5.9x	5.1x
New Relic, Inc.	12%	-3%	18%	4%	8%	22%	6,756	10.4x	9.0x	7.8x
Kinaxis, Inc.	-1%	10%	25%	13%	9%	38%	3,282	14.6x	13.2x	10.6x
Yext, Inc.	11%	-2%	12%	-1%	9%	11%	1,117	3.2x	2.9x	2.5x
Splunk Inc.	11%	-2%	13%	5%	9%	19%	20,127	9.0x	8.0x	6.8x
Tier 4 SaaS (Rule of 40 <28)	Average							9.6x	8.1x	6.7x
SaaS Average								19.7x	14.3x	11.3x

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	0	Sector is expected to outperform the broader market averages.

Sector is expected to equal the performance of the broader market averages.

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.

Marketweight

Underweight

Μ

U

CIBC World Markets Inc. Price Chart

For price and performance charts, please visit CIBC on the web at <u>https://researchcentral.cibccm.com/#/disclaimer-central-new</u> 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: <u>CIBC Disclaimers & Disclosures</u>

Companies mentioned in the report but not listed are not covered by fundamental research at CIBC.

Ratings Distribution*: CIBC World Markets Inc. Coverage Universe

(as of 13 Jan 2022)	Count	Percent	Inv. Banking Relationships	Count	Percent
Outperformer	172	58.1%	Outperformer	172	100.0%
Neutral	115	38.9%	Neutral	114	99.1%
Underperformer	9	3.0%	Underperformer	9	100.0%
Tender	0	0.0%	Tender	0	0.0%
Restricted	10	3.4%	Restricted	10	100.0%

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/#/disclaimer-central.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 <u>https://researchcentral.cibccm.com/</u>, or at the following research aggregators: Bloomberg, Refinitiv, Capital IQ, and FactSet.

Legal Disclaimer

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, (b) in the United Kingdom, CIBC World Markets plc, is Authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, (c) in Australia to wholesale clients only, CIBC Australia Ltd, a company regulated by the ASIC with AFSL license number 240603 and ACN 000 067 256, and (d) in Japan, CIBC World Markets (Japan) Inc., a registered Type 1 Financial product provider with the registration number Director General of Kanto Finance Bureau #218 (collectively, "CIBC World Markets") and (e) 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.

This report is provided, for informational purposes only, to institutional investor and retail clients of CIBC World Markets 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. This document and any of the products and information contained herein are not intended for the use of Retail investors in the United Kingdom. Such investors will not be able to enter into agreements or purchase products mentioned herein from CIBC World Markets plc. The comments and views expressed in this document are meant for the general interests of wholesale clients of CIBC Australia Ltd.

This report has been prepared by the CIBC group and is issued in Hong Kong by Canadian Imperial Bank of Commerce, Hong Kong Branch, a registered institution under the Securities and Futures Ordinance, Cap 571 (the "SFO"). This report is intended for "professional investors" only (within the meaning of the SFO) and has been prepared for general circulation and does not take into account the objectives, financial situation or needs of any recipient. Any recipient in Hong Kong who has any questions or requires further information on any matter arising from or relating to this report should contact Canadian Imperial Bank of Commerce, Hong Kong Branch at Suite 3602, Cheung Kong Centre, 2 Queen's Road Central, Hong Kong (telephone number: +852 2841 6111). Orders for Hong Kong listed securities will be executed by Canadian Imperial Bank of Commerce, Hong Kong Branch. Canadian Imperial Bank of Commerce, Hong Kong Branch has entered into an arrangement with its broker-dealer affiliates worldwide to execute orders for securities listed outside of Hong Kong for Hong Kong clients.

This report is intended for distribution in Singapore solely to "institutional investors" (within the meanings of the Financial Advisers Act (Chapter 110 of Singapore)).

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 Canadian Imperial Bank of Commerce ("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. The CIBC trademark is used under license.

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