

EQUITY RESEARCH

Industry Update

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

Right To Repair In An IoT-Dominant World - Bits & Bytes Weekly

Users Advocate For Cost Effectiveness & Flexibility

Our Conclusion

August 5, 2021

The Biden Administration continues to target anti-competitive corporate practices, and a broad executive order signed in July aimed to promote competitive markets has reignited a debate over the "right to repair." The right to repair movement grew out of opposition to manufacturer restrictions over who can access and repair products. Supporters of right to repair argue that third-party technicians can help lower cost of repairs, increase innovation, and reduce e-waste by extending device lifetimes. Some manufacturers oppose the movement, citing safety and privacy concerns for users, and the potential risk of undermining intellectual property protection and diminishing brand images. While this is not an entirely new issue, technological advances and adoption of IoT devices are new twists that complicate the debate over right to repair. The Federal Trade Commission (FTC) endorsed a broader right to repair in a policy statement passed in July but detailed lawmaking and implementation at the federal level remain in the works.

Key Points

As it stands, many manufacturers place strict rules around who can perform repairs, limiting the ability of users to self-repair or source third-party repairs. Many manufacturers withhold the information and tools required to repair machinery and devices and also structure warranties so they are voided after third-party repair and maintenance. Users are unable to select their own technicians and are forced to pay repair prices set by manufacturers, leading to lengthy repairs at inflated costs. One interesting example is in the farming industry, where farmers have been vocal about the challenges they face in repairing a new generation of internet-connected equipment. Manufacturers own and store the equipment's data off-premise, and prohibit outside repair that may impact the software. As a result, authorized service providers are in high demand and service delays can put time-sensitive farming activity at risk.

With the rise of the Internet of Things (IoT), many industrial and consumer products are now enhanced with smart sensors and internet-connected technology that allows them to be controlled and monitored remotely. This technological overlay adds a layer of complexity when it comes to repair. The issue of right-to-repair will have a direct impact on many industries where IoT devices have become commonplace, and maintenance is handled exclusively by the manufacturers. Seemingly unconnected industries such as the farming, healthcare, and home appliance industries all currently face challenges related to manufacturer-restricted repair and service.

The Impact Of Right To Repair

Right-to-repair advocates cite lower repair costs and improved efficiency as key benefits that would result from legislative changes. It is likely that the Biden administration views right-to-repair regulations as a benefit to consumers and entrepreneurs alike. An argument made in favour of advancing the right to repair is to assist underserviced areas that do not have local access to first-party repair shops. Returning to the case of the farmer, if local repair shops aren't permitted to perform key repairs, farmers can face equipment downtime with significant consequences. Manufacturers currently have limited incentive to increase service levels in low-density areas, as opposed to third-party repair shops which tend to service multiple devices across various brands.

Another cited benefit of the right to repair is an improved environmental footprint. According to Global E-waste Monitor, e-waste is on track to reach 75 million metric tons by 2030. The report cites higher consumption rates of electronics combined with shorter device life cycles as contributing factors to the pileup of waste. An increase in competition for repair could extend the lifespan of devices, translating into consumer savings and a reduction in e-waste.

Opponents of third-party repair note that it could undercut safety and increase cybersecurity risks from both a hardware and software perspective. Companies such as Dyson, John Deere and Apple have all raised concerns about the impact of right to repair on safety and privacy for users. Concerns range from improper training resulting in faulty repair of the hardware to cybersecurity issues (i.e., instances where consumers "jailbreak" devices, which increases exposure to malware and spyware). In addition, companies claim right-to-repair may diminish intellectual property rights and discourage R&D efforts.

Policymakers have a handful of options when it comes to tackling this issue. On the two ends of the spectrum are a full set of full right-to-repair rules versus a manufacturer-only repair model. However, we may see policymakers take a more moderate approach, including encouraging licensing of third-party repairs by manufacturer-certified repair shops. The implementation of licensing/certification programs for independent repair shops would respect and protect manufacturers' intellectual property rights while creating standard service levels where consumers could benefit.

Exhibit 1: Industry Revenue - Repair And Maintenance In The U.S. From 2012 To 2024 - Updated October 2020



^{*} Estimate - This also applies for past years as data provided by statistical institutions often is not available for more recent years.

Source: Statista and CIBC World Markets Inc.

According to Statista, the repair and maintenance market is growing steadily in automotive sector as well as in the commercial and industrial machinery industries. As technology moves forward in these industries, repairs have grown increasingly expensive while data are



controlled and sometimes withheld by the manufacturer. In a study conducted by Grandview Research, the global smart home appliances market is valued at US\$32.3 billion in 2019 and is expected to grow at 14.1% CAGR between 2020 to 2027. We expect the growing penetration of smart home appliances to translate to higher demand for maintenance and repair in the next decade.

News Impacting Our Coverage

Highlights From Information Services Corp's Q2/21 Earnings Results

ISV reported strong Q2 results, with revenue (+15%) and adjusted EBITDA margins (+578 bps) well above consensus. Both the Registry and Services divisions came in above our expectations, benefiting from a recovering environment as COVID restrictions lessen. Margin outperformance was driven by the revenue beat, along with cost containment initiatives. Link to note

Highlights From Ceridian's Q2/21 Earnings Results

Ceridian reported solid Q2 results, with Dayforce revenue roughly in line with consensus and margins 330 bps above. The environment appears to be improving, with Ceridian raising its full-year guidance slightly and the average employee count at Dayforce customers now above pre-pandemic levels. We see further upside as the company builds out its global offering, with the Ascender acquisition offering upsell potential and recent contract wins highlighting the company's differentiated global offering. Link to note

Highlights From Maxar's Q2/21 Earnings Results

Maxar reported solid Q2 financial results, with revenue that was 7% ahead of consensus and adjusted EBITDA coming in 20% ahead of consensus. With earnings, the company announced that the launch timeline of the WorldView Legion constellation has been pushed out from Q4/2021 to March-June 2022. Guidance for the remainder of 2021 was effectively reiterated, but further delays to the Legion launch put the attainability of management's 2023 adjusted EBITDA targets into question. Link to note

Highlights From Topicus' Q2/21 Earnings Results

Constellation and Topicus announced Q2 results for Topicus. Our key takeaway was a relatively low M&A spend (EUR5 million) in a quarter where we expect to see strong acquisition spending from Constellation. Acquisition spending picked up post quarter-end, with Topicus spending EUR50 million. Topicus continues to see strong organic growth (8%) although we view Q2 as a relatively easy Y/Y comparison. Margins at Topicus were down 250 bps Y/Y and roughly 120 bps below our expectation for Constellation's consolidated margin. That said, we saw a similar pattern last quarter and it did not impact Constellation's overall margin, which came in slightly above our expectations. Overall, we remain comfortable with our Constellation estimates following Topicus' results, and see some potential upside on organic growth. Link to note

Highlights From TELUS International's Q2/21 Earnings Results

TELUS International (TI) recorded mid-teens constant currency organic growth, with strong demand in its core tech and games vertical and growing demand in the e-commerce and fintech vertical. TI ended the quarter with an opportunity pipeline of over \$2B, and we see the company as well positioned to continue to see mid-double-digit organic growth. We also see upside potential from M&A, with leverage down and the company looking at white spaces and adjacencies to build out its digital solutions. Link to note



Docebo Appoints Rudy Valdez As New COO, Transitions Martino Bagini to Chief Corporate Development Officer

Docebo announced that Rudy Valdez has joined the company as the new Chief Operating Officer. Mr. Valdez brings over 30 years of cloud and technology leadership experience to the position. This experience includes 16 years at Amazon Web Services (AWS), where he founded the Sales and Business Development function within AWS. He recently held the position of VP, Solutions Architecture and Training and Certification at AWS, focused on architectural best practices and educating customers and partners on cloud technologies. Concurrently, Martino Bagini, Docebo's former COO, will transition to the role of Chief Corporate Development Officer. Mr. Bagini will oversee the execution of the M&A strategy and the integration process.

Topicus.com And Vela Software Acquire CGG's GeoSoftware Business

Topicus announced that Topicus and Vela Software has acquired CGG's GeoSoftware business on a 60/40 split basis. GeoSoftware helps users develop an understanding of the subsurface by quantifying reserves to better manage exploration and development risks. The software enables seismic reservoir characterization, seismic interpretation, petrophysics, rock physics, and velocity modeling.

CRH Medical Acquires Majority Stake in Greater Washington Anesthesia

WELL subsidiary CRH Medical completed an acquisition of a 51% ownership interest in Greater Washington Anesthesia Associates, LLC (GWAA), a provider of gastro-intestinal related anesthesia services with two locations in Northern Virginia. GWAA's current annualized revenue is estimated at US\$3.3 million, with a 50% EBITDA margin. This is the 37th acquisition completed by CRH and increases the CRH's footprint to 77 endoscopy sites in the U.S. The acquisition is expected to be accretive, and adds 12 practitioners to CRH's team of over 800 anesthesia practitioners.

CGI And Desigrdins Extend Payroll Business Process Services Partnership

CGI renewed its long-term payroll services partnership with Desjardins, a Quebec-based financial cooperative. The two partners have collaborated to deliver human capital management solutions in Canada since 1997. The 10-year agreement renewal is valued at \$500 million. The partnership focuses on managing the payroll service center, with services including business continuity, IT infrastructure and customer support.

Maxar And SiriusXM's New SXM-8 Satellite Completes In-Orbit Testing, And Wins Contract To Build SXM-9

Maxar and SiriusXM announced that the SXM-8 satellite has completed in-orbit testing and has been handed over to SiriusXM. A SpaceX Falcon 9 rocket originally launched the satellite into space on June 6. SXM-8 is the ninth digital, audio radio satellite built by Maxar for SiriusXM. It is more than 27 feet tall and is designed for more than 15 years of service. The satellite will help deliver reliable and continuous audio entertainment and information services to consumers in the U.S. and will expand SiriusXM's coverage area in Canada and the Caribbean. Maxar announced that it has won the contract to build SXM-9 satellite for SiriusXM. The SXM-9 satellite will be based on Maxar's proven 1300-class platform and built at its Palo Alto facility. The SXM-9 is expected to be launched in 2024. The company has been building satellites for SiriusXM since 2000.

EPAM Reports Q2 2021 Results, Raises Full Year Guidance

EPAM Systems, Inc., a global provider of digital platform engineering and software development services, announced earnings results for Q2/21. Q2 revenue of US\$881.4 million was comfortably above consensus of US\$859.9 million, and is up 39.4% Y/Y (organic



growth of 36.3% Y/Y). EPS of US\$2.05 (consensus of US\$1.94) is 40.4% higher than figures in the prior year period. EPAM has raised its 2021 outlook, expecting constant currency revenue growth of at least 35% (acquisition-related growth of 3%), higher than its guidance in May calling for constant currency revenue growth of 28% and 2% revenue growth from acquisitions. EPAM is also guiding for non-GAAP diluted EPS to be in the range of US\$8.25 – US\$8.44 (up from US\$7.54-US\$7.76 communicated in May).

Square Agrees To Acquire AfterPay For US\$29 Billion In All-Stock Deal

In an effort to achieve the scale required to challenge financial institutions in the payment space, Square is acquiring AfterPay in an all-stock deal valued at US\$29 billion. AfterPay is a buy now, pay later firm founded in 2015. Its service allows customers to divide retail and online payments in to four interest-free installments while receiving their goods immediately. AfterPay has more than 100,000 merchants on the platform, with more than 16 million customers. The buy now, pay later solutions are becoming increasingly popular among younger consumers who are generally wary of taking on credit card debt. The company plans to integrate AfterPay into its Seller and Cash App units. Post acquisition, AfterPay solutions is expected be expanded beyond online retailers to in-person merchants, helping broaden its platform. Square will likely benefit from AfterPay's merchant relationships and look to convert AfterPay's users onto its Cash App platform.

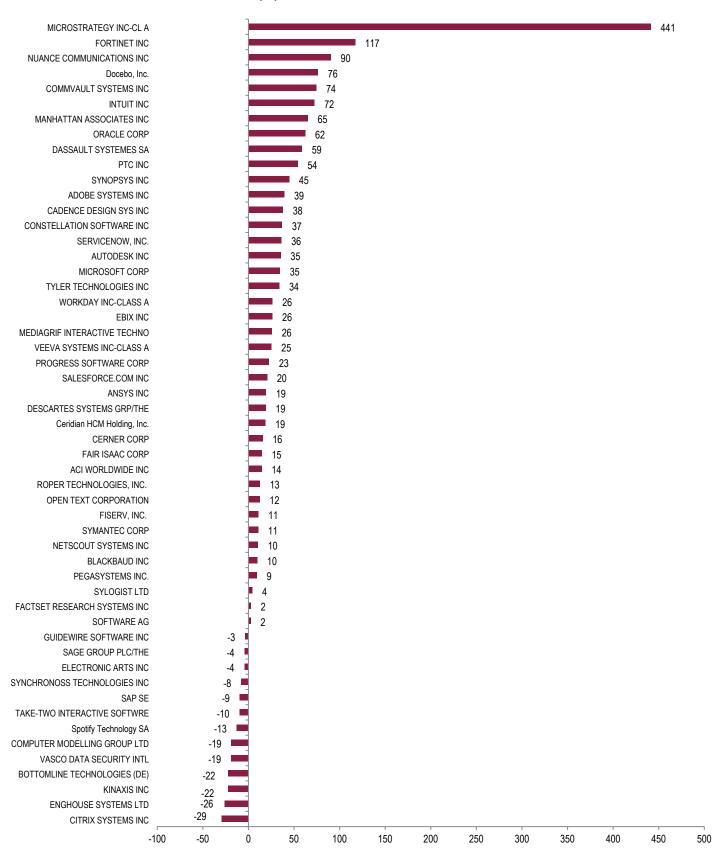


Exhibit 2: CIBC Software/Services Coverage – Return Performance (%) – 8/5/2020 – 8/5/2021

Company	Price	1 Week	1 Month	3 Month	6 Month	1 Year	Year To Date	52 Week High	52 Week Low
Software & Systems									
Constellation Software Inc	2025.03	3.6	6.3	11.9	27.2	36.8	22.5	2056.64	1272.08
Descartes Systems	72.83	1.9	3.3	17.5	15.7	25.7	24.5	73.24	50.57
Dye & Durham	46.70	(1.4)	(8.0)	13.5	(2.1)	NA	(7.6)	53.68	14.76
Enghouse Systems Limited	57.13	1.4	3.5	(0.7)	(5.9)	(26.2)	(7.3)	80.91	48.87
Open Text Corp	51.60	(0.3)	(0.7)	10.6	5.9	12.3	13.5	52.34	36.18
Kinaxis	168.00	2.1	3.0	14.6	(9.8)	(22.4)	(6.8)	224.98	124.05
Docebo, Inc.	87.44	5.9	14.6	42.7	22.8	76.3	5.7	87.74	40.29
Ceridian HCM Holding	100.00	1.4	2.2	12.2	(1.8)	18.7	(6.2)	111.93	67.67
Maxar Technologies	34.00	(2.1)	(15.0)	21.6	(34.1)	64.0	(11.9)	58.75	19.84
Average		1.4	1.8	16.0	2.0	23.1	2.9		
Business Services									
Altus Group Ltd	58.80	1.0	0.7	(5.1)	17.6	36.7	19.7	64.89	41.50
CGI Group Inc	112.42	0.1	(0.7)	2.1	9.9	18.7	11.3	116.07	80.29
Information Services Corp	28.00	(1.5)	(8.9)	5.7	28.7	61.4	40.6	33.87	17.12
LifeWorks Inc	35.47	0.3	5.4	13.7	11.5	15.2	14.3	35.95	26.22
Telus International	37.90	(3.9)	(4.1)	21.2	NA	NA	NA	42.00	34.00
Average		(0.8)	(1.5)	7.5	17.0	33.0	21.5		
Indices									
S&P/TSX Composite Index	20329.73	0.1	0.5	5.3	12.1	23.2	16.6		
S&P 500 Index	4402.66	(0.4)	1.2	5.6	13.3	32.3	17.2		
S&P/TSX Software Index	222.86	1.6	3.5	20.3	13.0	26.2	22.2		
S&P500 Software Index	5243.61	0.6	3.9	17.5	17.2	36.3	24.8		



Exhibit 3: Software Stocks - 1 Year Returns (%) - 8/5/2020 - 8/5/2021





DXC Technology Co. 128 Wipro Limited Sponsored ADR 100 EPAM Systems, Inc. 93 Tech Mahindra Limited 92 Capgemini SE 69 Information Services Corp. Class A 61 HCL Technologies Limited 54 FirstService Corp Tata Consultancy Services Limited 45 45 Xerox Holdings Corporation Accenture Plc Class A 39 Altus Group Limited 37 Indra Sistemas, S.A. Class A 34 Amdocs Limited 21 20 Genpact Limited CGI Inc. Class A 19 LifeWorks Inc 15 International Business Machines Corporation 14 MAXIMUS, Inc. 12 9 Cognizant Technology Solutions Corporation Class A Leidos Holdings, Inc. Booz Allen Hamilton Holding Corporation Class A Serco Group plc Atos SE -47 -60 -40 -20 20 40 60 80 100 120 140

Exhibit 4: Busines Services Stocks – 1 Year Returns (%) - 8/5/2020 – 8/5/2021



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

	Enterprise	EV/S			E	V/EBITD/	4		P/E	
	Value	C20	C21E	C22E	C20	C21E	C22E	C20	C21E	C22E
Enterprise Application Software										
Constellation Software Inc.*	34,182	8.6x	6.9x	6.2x	27.8x	23.5x	21.1x	41.0x	49.8x	31.4x
BlackBerry Limited*	5,696	5.9x	5.8x	5.1x	28.5x	>50	47.0x	41.1x	>50	NEG
Sage Group plc	7,832	4.1x	4.2x	4.0x	16.8x	18.6x	17.2x	27.6x	30.4x	27.6x
Tyler Technologies, Inc.	19,328	17.3x	12.5x	10.5x	>50	46.3x	39.1x	>50	>50	>50
Roper Technologies, Inc.	61,121	11.0x	9.5x	9.1x	30.7x	26.0x	24.6x	38.5x	32.3x	30.2x
Enghouse Systems Limited	2,961	5.7x	6.1x	5.9x	15.7x	17.8x	17.3x	28.5x	36.8x	35.2x
Oracle Corporation	291,875	7.3x	7.0x	6.8x	14.8x	14.3x	13.9x	20.8x	19.3x	18.2x
SAP SE	162,302	5.9x	5.9x	5.7x	17.3x	18.4x	17.5x	23.1x	21.1x	23.3x
Enterprise Application Software Ave	erage	8.2x	7.3x	6.7x	21.7x	23.6x	24.7x	31.5x	31.6x	27.7x
Extended ERP										
Adobe Inc.	296,790	22.6x	18.7x	16.3x	46.3x	37.9x	32.9x	>50	>50	43.9x
Open Text Corporation	16,880	5.1x	5.0x	4.9x	13.2x	13.6x	12.8x	15.9x	16.6x	15.4x
Manhattan Associates, Inc.	10,048	17.1x	15.5x	14.3x	>50	>50	>50	>50	>50	>50
Pegasystems Inc.	10,455	10.3x	8.3x	7.0x	>50	>50	>50	NEG	>50	>50
Software AG	2,887	3.5x	3.5x	3.2x	15.0x	18.0x	14.2x	24.8x	30.7x	23.7x
Fiserv, Inc.	92,382	6.6x	6.0x	5.6x	17.0x	14.3x	13.0x	24.6x	19.6x	16.8x
Extended ERP Average		10.9x	9.5x	8.5x	22.9x	20.9x	18.2x	21.8x	22.3x	25.0x
Software As A Service										
Descartes Systems Group Inc.	6,035	17.3x	14.7x	13.5x	42.6x	35.7x	31.9x	>50	>50	>50
Kinaxis, Inc.*	3,450	15.4x	14.0x	11.1x	>50	>50	>50	>50	>50	>50
Docebo, Inc.*	2,064	32.8x	21.5x	15.6x	NEG	NEG	NEG	NEG	NEG	NEG
Lightspeed POS, Inc.*	10,957	>50	27.4x	18.7x	NEG	NEG	NEG	NEG	NEG	NEG
Veeva Systems Inc Class A	50,542	35.2x	28.2x	23.7x	>50	>50	>50	>50	>50	>50
Shopify, Inc. Class A	188,597	>50	40.8x	30.3x	>50	>50	>50	>50	>50	>50
Ceridian HCM Holding, Inc.	15,447	18.3x	15.3x	13.7x	>50	>50	>50	>50	NEG	>50
ServiceNow, Inc.	116,607	25.8x	20.0x	16.0x	>50	>50	50.0x	>50	>50	>50
Workday, Inc. Class A	56,060	13.2x	11.3x	9.6x	>50	43.7x	41.0x	>50	>50	>50
Software As A Service Average		22.6x	21.5x	16.9x	42.6x	39.7x	41.0x	>50	>50	>50
Infrastructure Vendors										
Citrix Systems, Inc.	13,638	4.2x	4.2x	3.9x	11.9x	13.1x	12.0x	16.5x	20.8x	17.4x
Microsoft Corporation	2,105,035	13.5x	11.7x	10.4x	28.4x	24.1x	21.1x	41.6x	34.3x	30.6x
Infrastructure Vendors Average		8.9x	8.0x	7.1x	20.2x	18.6x	16.5x	29.1x	27.6x	24.0x
0.5		10.0	10.0	10-0	00.0	0.4-4	05-1-	00-	00-0	00.0
Software Average		13.3x	13.0x	10.8x	23.3x	24.4x	25.1x	28.7x	28.3x	26.2x

*Share Price Converted to USD



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

Business & IT Services		Enterprise	EV/EBITDA			P/E			EV/S		
GGI Inc. Class A		Value	C20	C21E	C22E	C20	C21E	C22E	C20	C21E	C22E
Accenture Pic Class A	Business & IT Services										
Booz Allen Hamilton	CGI Inc. Class A	30,347	12.4x	12.5x	12.1x	22.5x	20.5x	19.0x	2.5x	2.5x	2.4x
CACI International Inc Class A 7,827 12.2x 11.2x 10.7x 16.4x 14.4x 14.2x 1.3x 1.2x 1.2x 10.7x 16.4x 14.4x 14.2x 1.3x 1.2x 1.2x 1.2x 10.0X Technology Co. 14,783 5.4x 5.5x 5.0x 13.1x 12.8x 9.8x 9.8x 0.8x 0.9x 0.9x 0.9x 0.9x 0.9x 0.9x 0.9x 0.9	Accenture Plc Class A	195,851	22.6x	19.9x	18.0x	40.0x	34.6x	31.0x	4.2x	3.8x	3.4x
DXC Technology Co.	Booz Allen Hamilton	12,769	15.6x	14.3x	13.4x	22.0x	19.9x	18.2x	1.6x	1.5x	1.4x
Genpact Limited 10,561 15,5x 14,0x 12,9x 23,3x 21,5x 19,0x 2,8x 2,7x 2,4x 2,2x 2,0x 2,4x 2,	CACI International Inc Class A	7,627	12.2x	11.2x	10.7x	16.4x	14.4x	14.2x	1.3x	1.2x	1.2x
International Business Machines	DXC Technology Co.	14,783	5.4x	5.5x	5.0x	13.1x	12.8x	9.8x	0.8x	0.9x	0.9x
Acos SE 6, 101 4, 2x 5, 2x 4, 6x 5, 5x 11, 3x 8, 8x 0, 0,5x 0, 6x 0,5x Capgemini SE 37,874 15,5x 13,5x 12,8x 26,2x 23,7x 20,8x 2,4x 2,2x 2,0x Sopra Steria Group SA 4,743 10,4x 9,2x 8,3x 22,1x 16,3x 13,7x 1,1x 1,0x 1,0x 10,0x Eusiness & IT Services Average 12,6x 11,5x 10,7x 20,8x 18,8x 16,6x 2,0x 1,9x 1,8x 1,8x 1,9x 1,9x 1,9x 1,9x 1,9x 1,9x 1,9x 1,9	Genpact Limited	10,561	15.5x	14.0x	12.9x	23.3x		19.0x	2.8x	2.7x	2.4x
Capgemini SE 37,874 15,5x 13,5x 12,8x 26,2x 23,7x 20,8x 2,4x 2,2x 2,0x 2,0x 2,4x 2,2x 2,0x 2,0x 2,4x 2,2x 2,0x 2,0x 2,4x 2,2x 2,0x 2,											
Sopra Steria Group SA											
HR Outsourcing LifeWorks Inc 2,987 14.9x 14.0x 13.4x 44.5x >50 40.4x 3.1x 2.9x 2.7x 2.8x 18.8x 16.6x 2.0x 1.9x 1.8x 18.8x 18.8	Capgemini SE	37,874	15.5x			26.2x		20.8x		2.2x	
LifeWorks Inc		4,743									
LifeWorks Inc	Business & IT Services Average		12.6x	11.5x	10.7x	20.8x	18.8x	16.6x	2.0x	1.9x	1.8x
LifeWorks Inc											
Ceridian HCM Holding, Inc. 15,447 >50 >50 >50 >50 NEG >50 18.3x 15.3x 13.7x			44.5	44.5	40 :	T 44 =		40 :			
Willis Towers Watson 31,830 12.9x 11.8x 11.2x 18.1x 16.0x 14.8x 3.4x 3.2x 3.1x Aon Pic Class A 66,192 20.5x 17.3x 16.2x 26.4x 22.3x 20.1x 6.0x 5.5x 5.2x Automatic Data Processing, Inc. 90,685 24.8x 23.1x 21.4x 35.5x 33.5x 30.4x 6.1x 5.8x 5.5x Paychex, Inc. 40,957 24.3x 23.0x 21.5x 37.7x 35.3x 32.6x 10.1x 9.7x 9.1x HR Outsourcing Average 19.5x 17.8x 16.7x 32.4x 26.8x 27.7x 7.8x 7.1x 6.5x Information Services Broadridge Financial Solutions, Inc. 21,845 20.4x 18.4x 16.5x 32.5x 29.2x 26.5x 4.6x 4.2x 4.0x 20.4x 11.3x 8.3x NEG 23.5x 19.3x NEG 50 42.9x 38.9x 10.0x 8.6x 20.4x 11.3x 8.3x 8.5x 19.2x 16.8x 14.9x 4.0x 3.3x 3.3x 11.3x 12.2x 4.7x 4.3x 16.5x 12.6x 20.1x 18.1x 23.1x 12.2x 4.7x 4.3x 12.6x 12.6x 12.6x 19.7x 17.1x 7.8x 7.1x 6.5x 12.6x 12.6x 19.7x 17.1x 7.8x 7.1x 6.5x 12.6x 12.6x 19.7x 17.1x 7.8x 7.1x 6.5x 12.6x 12.6x 19.7x 17.1x 7.8x 17.1x 10.6x 12.6x 12.6x 12.6x 12.6x 19.6x 16.8x 6.6x 6.0x 5.6x 12.6x 12.6x 12.6x 19.6x 12.6x 19.6x 12.6x 12.6x 12.6x 19.6x 12.6x 12.6											
Aon PIc Class A 66,192 20.5x 17.3x 16.2x 26.4x 22.3x 20.1x 6.0x 5.5x 5.2x Automatic Data Processing, Inc. 90,685 24.8x 23.1x 21.4x 35.5x 33.5x 30.4x 6.1x 5.8x 5.5x 19.2x 17.8x 16.7x 32.4x 26.8x 27.7x 7.8x 7.1x 6.5x 19.5x 17.8x 16.7x 32.4x 26.8x 27.7x 7.8x 7.1x 6.5x 19.5x 19.5x 17.8x 16.7x 32.4x 26.8x 27.7x 7.8x 7.1x 6.5x 19.5x 1	<u> </u>										
Automatic Data Processing, Inc. 90,685						_					
Paychex, Inc. 40,957 24,3x 23,0x 21,5x 37,7x 35,3x 32,6x 10,1x 9,7x 9,1x		-				_		-			-
Information Services											
Information Services Broadridge Financial Solutions, Inc. 21,845 20.4x 18.4x 16.5x 32.5x 29.2x 26.5x 4.6x 4.2x 4.0x 20.0x		40,957									
Broadridge Financial Solutions, Inc. 21,845 20.4x 18.4x 16.5x 32.5x 29.2x 26.5x 4.6x 4.2x 4.0x	HR Outsourcing Average		19.5x	17.8x	16.7x	32.4x	26.8x	27.7x	7.8x	7.1x	6.5x
Broadridge Financial Solutions, Inc. 21,845 20.4x 18.4x 16.5x 32.5x 29.2x 26.5x 4.6x 4.2x 4.0x	Information Complete										
Dye & Durham Ltd. 3,388 NEG 23.5x 19.3x NEG >50 42.9x 38.9x 10.0x 8.6x		04.045	00.4	40.4	40.5	00.5	00.0	00.5	4.0	4.0	4.0
Deluxe Corporation 2,434 6.7x 6.5x 5.9x 8.4x 8.4x 8.0x 1.4x 1.3x 1.2x											
Information Services Corp 541 11.3x 8.3x 8.5x 19.2x 16.8x 14.9x 4.0x 3.3x 3.3x 16.6x 14.9x 4.0x 3.3x 3.3x 16.6x 14.2x 12.6x 12	1 -										
Table Tabl											
Financial Services Technology Fidelity National Information Services 98,201 18.7x 15.9x 14.3x 23.6x 19.7x 17.1x 7.8x 7.1x 6.5x Fisery, Inc. 92,382 17.0x 14.3x 13.0x 24.6x 19.6x 16.8x 6.6x 6.0x 5.6x Jack Henry & Associates, Inc. 12,801 23.0x 21.5x 19.7x 44.1x 40.6x 36.2x 7.4x 7.0x 6.6x ACI Worldwide, Inc. 4,909 13.7x 13.0x 12.1x >50 28.3x 24.6x 3.8x 3.7x 3.5x Temenos AG 11,605 28.6x 25.9x 23.3x 42.2x 37.4x 33.0x 12.9x 11.7x 10.6x Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.3x 17.3x 8.4x 7.4x 6.7x Bottomline Technologies 1,802 18.4x 17.4x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.3x Financial Services Technology Average 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x 1.2x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x 2.0x 17.3x 1.5x 1.5x 1.5x 1.5x 1.5x 1.5x 1.5x 1.5		541									
Fidelity National Information Services 98,201 18.7x 15.9x 14.3x 23.6x 19.7x 17.1x 7.8x 7.1x 6.5x Fiserv, Inc. 92,382 17.0x 14.3x 13.0x 24.6x 19.6x 16.8x 6.6x 6.0x 5.6x Jack Henry & Associates, Inc. 12,801 23.0x 21.5x 19.7x 44.1x 40.6x 36.2x 7.4x 7.0x 6.6x ACI Worldwide, Inc. 4,909 13.7x 13.0x 12.1x >50 28.3x 24.6x 3.8x 3.7x 3.5x Temenos AG 11,605 28.6x 25.9x 23.3x 42.2x 37.4x 33.0x 12.9x 11.7x 10.6x Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.3x 17.3x 8.4x 7.4x 6.7x Bottomline Technologies 1,802 18.4x 17.4x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.3x Financial Services Technology Average 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x 2.9x Diversified Real Estate Services 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x 25.6x 23.9x 2.5x 2.2x 2.0x 2.0x 2.0x 2.0x 2.0x 2.0x 2.0	Information Services Average		12.8X	14.2X	12.6X	20.1x	18.1X	23.1x	12.2x	4.7X	4.3X
Fidelity National Information Services 98,201 18.7x 15.9x 14.3x 23.6x 19.7x 17.1x 7.8x 7.1x 6.5x Fiserv, Inc. 92,382 17.0x 14.3x 13.0x 24.6x 19.6x 16.8x 6.6x 6.0x 5.6x Jack Henry & Associates, Inc. 12,801 23.0x 21.5x 19.7x 44.1x 40.6x 36.2x 7.4x 7.0x 6.6x ACI Worldwide, Inc. 4,909 13.7x 13.0x 12.1x >50 28.3x 24.6x 3.8x 3.7x 3.5x Temenos AG 11,605 28.6x 25.9x 23.3x 42.2x 37.4x 33.0x 12.9x 11.7x 10.6x Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.3x 17.3x 8.4x 7.4x 6.7x Bottomline Technologies 1,802 18.4x 17.4x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.3x Financial Services Technology Average 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x 2.9x Diversified Real Estate Services 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x 25.6x 23.9x 2.5x 2.2x 2.0x 2.0x 2.0x 2.0x 2.0x 2.0x 2.0	Financial Services Technology										
Fisery, Inc. Jack Henry & Associates, Inc. 12,801 23.0x 21.5x 19.7x 44.1x 40.6x 36.2x 7.4x 7.0x 6.6x ACI Worldwide, Inc. 4,909 13.7x 13.0x 12.1x >50 28.6x 25.9x 23.3x 42.2x 37.4x 33.0x 12.9x 11.7x 10.6x Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.1x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.8x 3.7x 3.5x 3		09 201	10 7v	15 Ov	14 2v	22 6v	10.7v	17 1v	7 0v	7 1v	6 5 v
Jack Henry & Associates, Inc. 12,801 23.0x 21.5x 19.7x 44.1x 40.6x 36.2x 7.4x 7.0x 6.6x ACI Worldwide, Inc. 4,909 13.7x 13.0x 12.1x >50 28.3x 24.6x 3.8x 3.7x 3.5x Temenos AG 11,605 28.6x 25.9x 23.3x 42.2x 37.4x 33.0x 12.9x 11.7x 10.6x Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.3x 17.3x 8.4x 7.4x 6.7x Bottomline Technologies 1,802 18.4x 17.4x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.3x Financial Services Technology Average 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x <td></td>											
ACI Worldwide, Inc. 4,909 13.7x 13.0x 12.1x >50 28.3x 24.6x 3.8x 3.7x 3.5x Temenos AG 11,605 28.6x 25.9x 23.3x 42.2x 37.4x 33.0x 12.9x 11.7x 10.6x Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.3x 17.3x 8.4x 7.4x 6.7x Bottomline Technologies 1,802 18.4x 17.4x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.3x Financial Services Technology Average 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x											
Temenos AG											
Global Payments Inc. 56,856 18.9x 15.8x 14.0x 25.9x 20.3x 17.3x 8.4x 7.4x 6.7x Bottomline Technologies 1,802 18.4x 17.4x 15.9x 34.1x 33.4x 29.4x 3.9x 3.6x 3.3x Financial Services Technology Average 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x	· · · · · · · · · · · · · · · · · · ·										
Bottomline Technologies											
Diversified Real Estate Services 19.8x 17.7x 16.0x 32.4x 28.5x 24.9x 7.3x 6.6x 6.1x Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x											
Diversified Real Estate Services Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x	Ŭ										6.1x
Colliers International Group Inc. 6,864 19.0x 14.3x 12.9x 31.6x 24.7x 23.6x 2.5x 1.9x 1.8x Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x											
Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x	Diversified Real Estate Services										
Altus Group Limited 2,528 25.6x 23.5x 19.8x 35.5x 36.0x 37.1x 4.5x 4.0x 3.7x CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x	Colliers International Group Inc.	6,864	19.0x	14.3x	12.9x	31.6x	24.7x	23.6x	2.5x	1.9x	1.8x
CBRE Group, Inc. Class A 34,621 18.6x 14.0x 13.4x 29.6x 20.7x 19.3x 1.5x 1.3x 1.2x Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x											3.7x
Jones Lang LaSalle Incorporated 14,880 17.3x 12.0x 11.5x 25.6x 16.3x 15.7x 1.7x 1.6x 1.5x Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x	CBRE Group, Inc. Class A		18.6x	14.0x		29.6x	20.7x		1.5x		1.2x
Diversified Real Estate Services Average 20.1x 16.0x 14.4x 30.6x 24.4x 23.9x 2.5x 2.2x 2.0x						25.6x					1.5x
Business Services Average 16.6x 14.9x 13.7x 26.7x 23.1x 22.2x 5.7x 4.4x 4.0x		age									2.0x
Business Services Average 16.6x 14.9x 13.7x 26.7x 23.1x 22.2x 5.7x 4.4x 4.0x											
	Business Services Average		16.6x	14.9x	13.7x	26.7x	23.1x	22.2x	5.7x	4.4x	4.0x



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

	LTM Revenue	LTM FCF	NTM Revenue				EV/S			
_	Growth	Margin	Growth	Margin	Of 40	Of 40	Value (\$MM)	C20	C21E	C22E
Tier 1 SaaS (Rule of 40 > 50)										
Zoom Video Communications	296%	49%	51%	39%	345%	90%	115,206	46.5x	29.6x	24.1x
Shopify, Inc.	100%	18%	52%	10%	118%	61%	188,597	64.4x	40.8x	30.3x
CrowdStrike Holdings, Inc.	77%	33%	56%	22%	110%	78%	58,522	69.6x	44.3x	32.4x
Zscaler, Inc.	54%	24%	54%	23%	78%	77%	33,498	63.3x	44.0x	33.0x
Veeva Systems Inc	31%	48%	25%	39%	78%	64%	50,542	35.2x	28.2x	23.7x
Atlassian Corp. Plc	29%	38%	27%	33%	67%	60%	85,274	45.9x	36.9x	30.2x
DocuSign, Inc.	54%	21%	41%	19%	74%	60%	58,977	41.7x	29.5x	22.7x
ServiceNow, Inc.	30%	33%	27%	30%	63%	57%	116,607	25.8x	20.0x	16.0x
Twilio, Inc.	57%	0%	44%	-3%	57%	41%	63,912	36.3x	23.9x	18.3x
Cornerstone Ondemand, Inc.	36%	20%	16%	19%	57%	35%	4,380	5.9x	5.1x	4.7x
Qualys, Inc.	12%	42%	11%	36%	54%	47%	3,771	10.4x	9.3x	8.4x
Tier 1 SaaS (Rule of 40 > 50)	Average							40.5x	28.3x	22.2x

	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 40-50)									
Descartes Systems	10%	40%	17%	36%	50%	53%	6,035	18.5x	17.3x	14.7x
HubSpot, Inc.	34%	14%	41%	13%	48%	54%	27,106	30.7x	21.4x	16.8x
Wix.com Ltd.	34%	12%	30%	5%	46%	36%	16,498	16.7x	12.8x	10.2x
Five9, Inc.	37%	8%	27%	7%	45%	34%	14,246	32.8x	25.0x	20.9x
Workday, Inc.	17%	27%	17%	19%	44%	36%	56,060	13.2x	11.3x	9.6x
Mimecast Limited	17%	26%	15%	22%	43%	37%	3,831	7.9x	6.8x	5.9x
Dropbox, Inc.	14%	29%	11%	32%	43%	43%	12,185	6.4x	5.7x	5.3x
VMware, Inc.	8%	33%	9%	28%	42%	37%	66,947	5.7x	5.3x	4.8x
Avalara Inc	33%	8%	30%	1%	41%	31%	13,830	27.6x	21.2x	17.3x
Docebo, Inc.	54%	-13%	54%	-3%	41%	51%	2,064	32.8x	21.5x	15.6x
Tier 2 SaaS (Rule of 40 b/	w 40-50) Average							19.2x	14.8x	12.1x

	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	/ 26-40)									
BlackLine, Inc.	20%	20%	19%	12%	40%	31%	6,562	18.7x	15.7x	13.0x
RingCentral, Inc.	31%	8%	27%	6%	39%	33%	24,418	20.6x	15.8x	12.8x
Lightspeed POS, Inc.	81%	-43%	104%	-3%	38%	101%	10,957	55.6x	27.4x	18.7x
LivePerson, Inc.	31%	2%	27%	-1%	32%	26%	4,194	11.4x	8.9x	7.1x
Kinaxis, Inc.	15%	18%	23%	10%	32%	33%	3,450	15.4x	14.0x	11.1x
MongoDB, Inc.	39%	-5%	33%	-8%	33%	26%	23,561	40.9x	30.6x	23.6x
Zendesk, Inc.	25%	5%	28%	8%	30%	36%	15,502	15.1x	11.8x	9.4x
Rapid7 Inc.	25%	5%	23%	3%	30%	25%	6,572	16.0x	12.6x	10.4x
Tier 3 SaaS (Rule of 40 b/w	/ 26-40) Average	_		_				24.2x	17.1x	13.3x

	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 <26)															
Akamai Technologies, Inc.	11%	17%	7%	23%	28%	30%	20,001	6.3x	5.8x	5.4x					
Anaplan, Inc.	26%	0%	25%	-2%	26%	23%	8,031	18.3x	14.6x	11.6x					
Paylocity Holding Corp.	9%	17%	12%	12%	26%	24%	11,579	19.4x	16.5x	13.6x					
Q2 Holdings, Inc.	27%	-4%	23%	0%	23%	23%	5,623	13.8x	11.3x	9.4x					
Teradata Corporation	2%	17%	4%	16%	19%	20%	5,578	3.0x	2.9x	2.8x					
Ceridian HCM Holding, Inc.	30%	-11%	21%	-4%	19%	17%	15,447	18.3x	15.3x	13.7x					
New Relic, Inc.	11%	5%	6%	0%	17%	6%	4,801	7.4x	6.7x	6.0x					
Zuora, Inc.	9%	6%	11%	0%	15%	11%	1,959	6.5x	5.8x	5.1x					
Yext, Inc.	15%	-5%	9%	-1%	9%	7%	1,512	4.3x	3.9x	3.4x					
Splunk Inc.	-3%	-8%	14%	3%	-11%	16%	23,986	10.7x	9.6x	7.9x					
Tier 4 SaaS (Rule of 40 <26) A	verage							10.8x	9.2x	7.9x					



24.1x 17.7x 14.1x

SaaS Average

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.
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

Sector Ratings	Abbreviation	Description
Overweight	0	Sector is expected to outperform the broader market averages.
Marketweight	М	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.cibcwm.com/rcportal/pricecharts or write to CIBC World Markets Inc., 161 Bay Street, 4th Floor, Toronto, ON M5H 2S8, Attn: Research Disclosure Chart Request.

Important Disclosure Footnotes

For important disclosure footnotes for companies mentioned in this report that are covered by CIBC World Markets Inc., click here: CIBC Disclaimers & Disclosures

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 05 Aug 2021)	Count Percent		Inv. Banking Relationships	s Count	Percent
Outperformer	179	61.1%	Outperformer	179	100.0%
Neutral	106	36.2%	Neutral	105	99.1%
Underperformer	8	2.7%	Underperformer	8	100.0%
Restricted	3	1.0%	Restricted	3	100.0%

Important disclosures required by applicable rules can be obtained by visiting CIBC World Markets on the web at

https://researchcentral.cibcwm.com/rcportal/legaldisclaimer. Important disclosures for each issuer can be found on Research Central Website by navigating through the following path: Company & Industry Research < Companies Listing < Ticker < Company page. Access to the system for our dissemination policy can be found at the bottom of each page on the Research Central website. These important disclosures can also be obtained by writing to CIBC World Markets Inc., 161 Bay Street, 4th Floor, Toronto, ON M5H 2S8, Attention: Research Disclosures Request.

Access to CIBC Equity Research

Clients may access CIBC Equity Research online at Research Central at https://researchcentral.cibcwm.com/, 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.

© 2021 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.

