

EQUITY RESEARCH

October 20, 2022

Industry Update

Racing To Grab Attention – Bits & Bytes Weekly

Uber and Netflix Turn To Ads To Boost Revenues

Sector:
Information Technology

Our Conclusion

The digital advertising market has recently been hit with headwinds as inflation and an uncertain economic environment lead companies to reevaluate advertising budgets. Meanwhile competition is heightening, with Uber and Netflix two of the recent entrants in the space. With digital advertising viewed as a barometer of the consumer demand environment, we will be watching Q3 earnings updates closely.

Key Points

2021 was a booming year for digital advertising, with the American spend growing by 38% Y/Y to \$211B, up from an average Y/Y growth of 21% in the previous five years. Digital ad spend has been declining from near-term highs in 2022 as cost pressures grew and several companies, including Meta and Snap, disclosed softening demand for digital ads. We see Amazon and Google as somewhat insulated from the weaker demand environment given their market share dominance, with Amazon disclosing ad revenue of US\$31B last year.

Despite a softening ad market, U.S. ad revenues are expected to surpass \$300B this year. We expect the market to grow increasingly crowded as tech companies look for additional revenue streams. Uber announced plans to start serving targeted ads based on users' travel history in its ride-hailing app. The company has been serving ads in its Uber Eats app, which generated \$350MM in annual revenue from 170K advertisers, in 30 countries. With the average Uber ride lasting around 20 minutes, Uber executives noted ample opportunity to sell ads to customers, with hopes of replicating the success seen in the Uber Eats segment.

The Uber announcement follows Netflix's launch of an ad-supported platform in 12 countries, beginning November 2022. Netflix will be competing for ad dollars against Amazon, Disney and Hulu, to name a few streaming companies. Netflix's President of Advertising, Jeremi Gorman, noted that the company has seen an overwhelming amount of interest and has nearly sold out its ad inventory for launch. AdAge reported that Netflix is expecting the ad-supported tier, which is priced lower, to generate 500K subscribers by the end of the year, compared to its 220MM total subscribers. With tech companies facing a growing number of macro pressures, we expect these types of announcements to continue as companies look to better monetize their existing platforms.

All figures in Canadian dollars unless otherwise stated.

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

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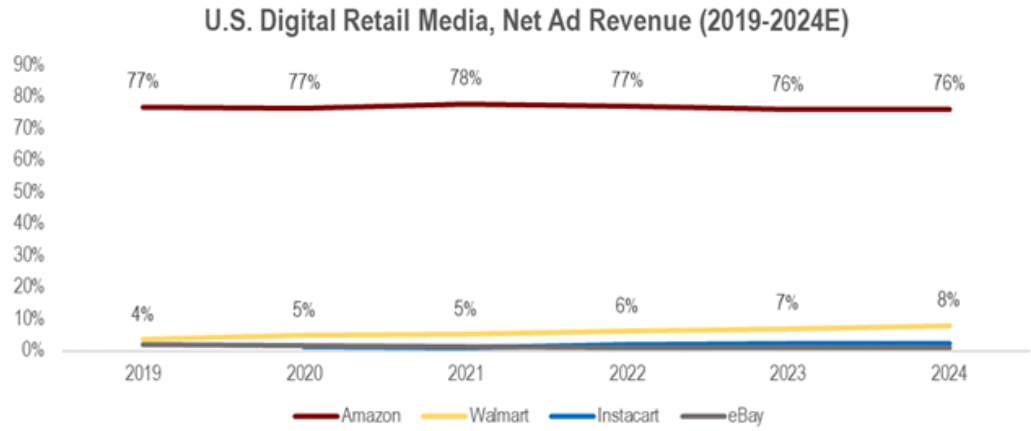
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Amazon Leading The Way In Retail Media Ad Revenues

Amazon has the largest share of Retail Media Digital advertising, boasting 78% of retail media ad spend in 2021. Meanwhile, Walmart is revamping its strategy to expand the reach of its advertising business, with the goal of becoming a top-10 advertising company in the next several years. As the largest retailer in the U.S, Walmart has deep insights into how US consumers shop and is looking to monetize that data. For comparison, Amazon generated more than \$31B in ad revenue last year, versus Walmart’s global advertising business, which generated \$2B in revenues in the last fiscal year. (See the line chart in Exhibit 1 for the ad revenue market shares of several digital media companies.)

Exhibit 1: U.S. Retail Media Net Ad Revenue – By Company, 2019 To 2024E



Source: eMarketer and CIBC World Markets
 Note: 2022, 2023 and 2024 are estimates.

News Impacting Our Coverage

Micro Focus International shareholders approve acquisition by Open Text

The transaction that was announced on August 25, 2022 is expected to close during Q1/23, subject to the satisfaction of the conditions of the Scheme Document.

Dye & Durham to sell TM Group following CMA review

Following the completion of the United Kingdom's Competition and Markets Authority's (CMA) review of Dye & Durham's acquisition of TM Group, DND has made an undertaking to the CMA to sell TMG in its entirety. TMG is a profitable and well-run technology company acquired by DND in 2021.

Netflix Kicks Off Big Tech Earnings Season

The highly anticipated earnings report was released on Oct 18, when shares jumped more than 13% in after-hours trading as the company reported net subscriber gain and revealed its ad-supported tier rollout, as well as password-sharing crackdown plans. Other FAANG stocks will be reporting Q3 earnings over the next three weeks.

Exhibit 2: CIBC Software/Services – Coverage Performance, 10/20/2021 - 10/20/2022

Software & Systems	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52 Week High	52 Week Low
Constellation Software Inc	1,840.06	(0.0)	(4.5)	(10.6)	(10.4)	(16.8)	(21.6)	2385.80	1783.98
Descartes Systems	64.70	(3.4)	(2.3)	(5.1)	3.4	(21.7)	(21.7)	91.39	56.19
Enghouse Systems Limited	28.77	1.1	(2.3)	(8.4)	(18.8)	(48.2)	(40.6)	61.45	23.96
Open Text Corp	27.21	4.6	(3.1)	(32.9)	(33.4)	(46.0)	(42.7)	52.70	24.91
Kinaxis	146.12	6.6	6.5	(3.9)	5.6	(23.7)	(17.6)	229.98	119.48
Docebo, Inc.	37.84	5.8	2.5	(2.1)	(34.4)	(61.6)	(55.4)	102.93	32.35
Magnet Forensics	24.30	8.1	11.2	23.4	0.6	(42.1)	(26.1)	43.13	14.89
Q4 Inc.	3.71	(2.9)	(15.3)	(15.9)	(16.6)	NA	(56.4)	12.05	3.60
Software & Systems Average		2.5	(0.9)	(6.9)	(13.0)	(37.2)	(35.3)		

Business Services	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD	52 Week High	52 Week Low
CGI Group Inc	105.07	(0.3)	1.9	(3.5)	3.1	(8.2)	(6.1)	116.00	95.45
Converge Technologies	6.83	2.1	19.2	17.8	(19.9)	(38.1)	(37.2)	12.80	4.85
Softchoice Corporation	19.80	0.0	(2.9)	(13.7)	(15.3)	(31.8)	(7.3)	29.48	17.48
Telus International	25.90	0.5	(8.8)	(5.8)	18.6	(31.9)	(21.7)	39.91	20.73
Business Services Average		0.6	2.4	(1.3)	(3.4)	(27.5)	(18.0)		

Indices	Price	1 Week	1 Month	3 Month	6 Month	1 Year	YTD
S&P/TSX Composite Index	18,674.40	0.3	(3.6)	(1.6)	(11.9)	(11.9)	(12.0)
S&P 500 Index	3,695.16	0.7	(4.2)	(6.7)	(13.5)	(18.5)	(22.5)
S&P/TSX Software Index	123.01	2.3	(2.8)	(12.2)	(15.3)	(46.8)	(42.0)
S&P500 Software Index	3,998.71	1.3	(2.5)	(10.9)	(13.6)	(28.9)	(31.6)

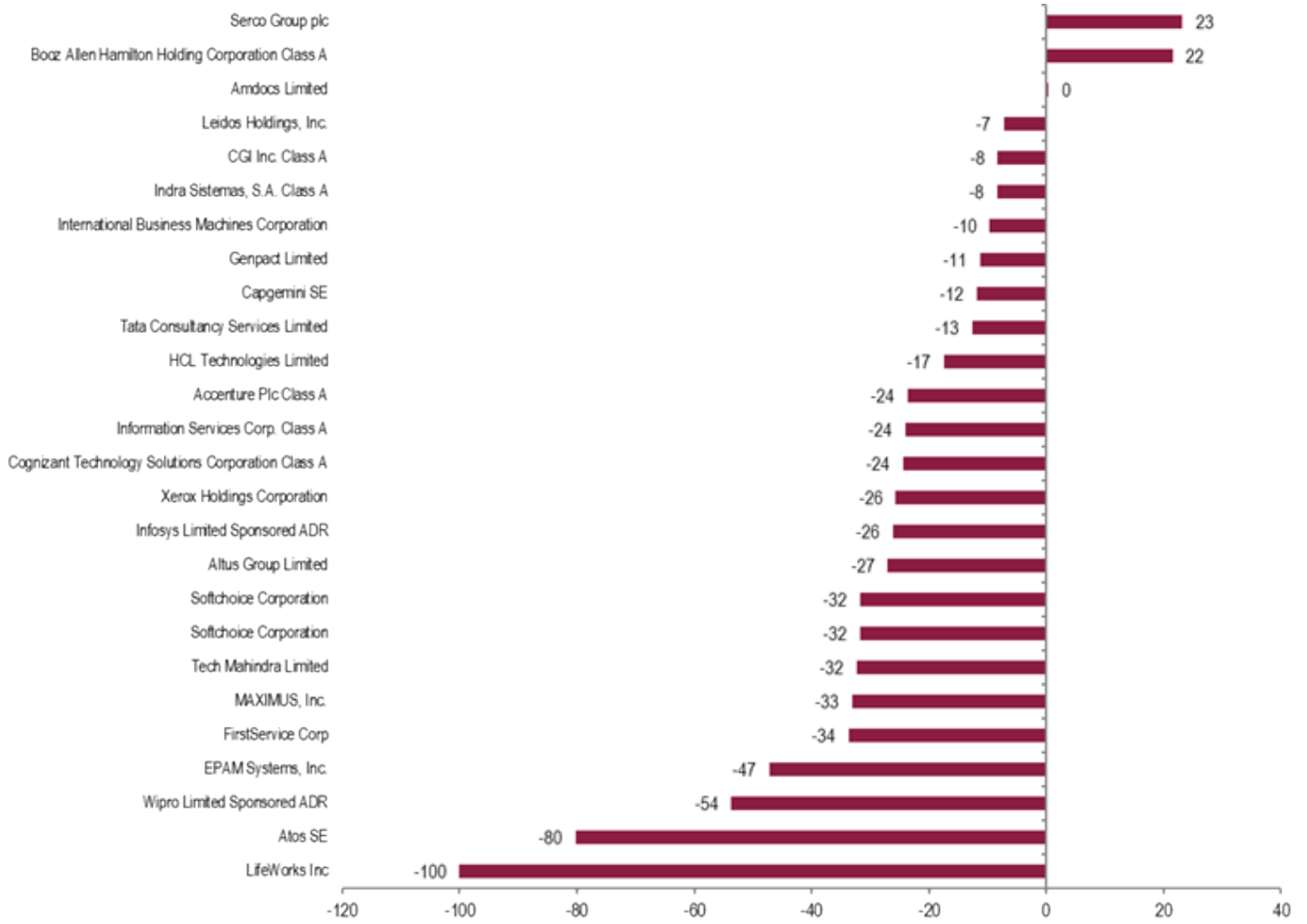
Source: FactSet and CIBC World Markets Inc.

Exhibit 3: Software Stocks – Return Performance (%), 10/20/2021 - 10/20/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 4: Business Services Stocks – Return Performance (%), 10/20/2021 - 10/20/2022



Source: FactSet and CIBC World Markets Inc.

Exhibit 5: Software Stocks – Comp Table, 2021 - 2023E

	Enterprise Value	EV/S			EV/EBITDA			P/E		
		C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E
Enterprise Application Software										
Constellation Software Inc.*	29,717	5.8x	4.6x	4.0x	19.7x	17.5x	15.0x	42.9x	24.1x	21.8x
BlackBerry Limited*	2,336	2.6x	3.4x	2.4x	47.7x	NEG	NEG	NEG	NEG	NEG
Sage Group plc	7,413	4.0x	3.7x	3.4x	17.9x	15.7x	14.3x	26.8x	25.5x	22.5x
Tyler Technologies, Inc.	15,013	9.4x	8.1x	7.4x	42.7x	31.8x	29.1x	>50	45.0x	41.7x
Roper Technologies, Inc.	47,178	8.2x	9.0x	8.2x	21.3x	21.9x	20.1x	36.1x	27.2x	24.6x
Enghouse Systems Limited	1,381	3.0x	3.3x	3.33x	8.5x	10.2x	10.1x	17.2x	21.8x	21.7x
Oracle Corporation	236,306	5.8x	5.1x	4.6x	12.6x	10.1x	9.2x	14.6x	13.5x	12.5x
SAP SE	112,399	4.0x	3.7x	3.4x	15.7x	13.2x	11.8x	19.9x	18.3x	16.2x
Enterprise Application Software Average		5.4x	5.1x	4.6x	23.3x	17.2x	15.6x	26.2x	25.1x	23.0x
Extended ERP										
Adobe Incorporated	138,266	8.8x	7.8x	7.0x	20.7x	15.9x	14.5x	29.9x	21.8x	19.3x
Open Text Corporation	10,123	2.9x	2.8x	2.8x	7.9x	8.1x	7.5x	8.6x	8.7x	8.0x
Manhattan Associates, Inc.	7,729	11.6x	10.5x	9.5x	>50	39.7x	34.4x	>50	>50	48.0x
Pegasystems Inc.	2,859	2.4x	2.2x	2.0x	NEG	>50	24.7x	NEG	>50	40.4x
Software AG	1,286	1.5x	1.3x	1.2x	8.3x	6.5x	5.6x	18.9x	13.9x	11.4x
Fiserv, Inc.	82,686	5.1x	4.9x	4.6x	14.9x	11.6x	10.6x	48.4x	14.9x	13.2x
Extended ERP Average		5.4x	4.9x	4.5x	13.0x	16.3x	16.2x	26.5x	14.8x	23.4x
Software As A Service										
Descartes Systems Group Inc.	5,306	12.5x	10.8x	9.7x	28.7x	24.7x	21.8x	>50	>50	>50
Kinaxis, Inc.*	2,758	11.0x	7.6x	6.8x	>50	42.4x	37.8x	>50	>50	>50
Docebo, Inc.*	692	6.6x	4.8x	3.5x	NEG	NEG	>50	NEG	NEG	NEG
Lightspeed Commerce Inc*	1,728	3.7x	2.5x	1.9x	NEG	NEG	NEG	NEG	NEG	NEG
Veeva Systems Inc Class A	21,934	15.0x	10.4x	9.0x	>50	26.1x	22.5x	>50	37.9x	33.7x
Shopify, Inc. Class A	24,833	5.4x	4.5x	3.7x	>50	NEG	>50	12.4x	NEG	>50
Q4 Inc*	64	1.2x	1.2x	1.1x	NEG	NEG	NEG	NEG	NEG	NEG
Magnet Forensics, Inc.*	611	8.7x	6.5x	5.0x	32.8x	39.8x	22.4x	>50	>50	>50
Ceridian HCM Holding, Inc.	9,507	9.3x	7.7x	6.6x	>50	43.4x	35.0x	NEG	>50	>50
ServiceNow, Inc.	70,705	12.0x	9.7x	7.9x	>50	31.1x	25.0x	>50	48.8x	38.7x
Workday, Inc. Class A	35,956	8.4x	5.9x	4.9x	>50	23.0x	18.9x	NEG	42.7x	33.7x
Software As A Service Average		8.5x	6.5x	5.5x	30.7x	32.9x	26.2x	12.4x	43.1x	35.4x
Infrastructure Vendors										
Microsoft Corporation	1,737,285	10.3x	8.3x	7.5x	21.5x	16.8x	14.9x	29.4x	24.6x	21.7x
Infrastructure Vendors Average		10.3x	8.3x	7.5x	21.5x	16.8x	14.9x	29.4x	24.6x	21.7x
Software Average										
		6.9x	5.8x	5.1x	21.4x	22.5x	19.3x	25.4x	25.9x	25.2x

*Share Price Converted to USD

Source: FactSet and CIBC World Markets Inc.

Exhibit 6: Business Services Stocks – Comp Table, 2021 - 2023E

Enterprise Value (\$mns.)	EV/EBITDA			P/E			EV/S			
	C21	C22E	C23E	C21	C22E	C23E	C21	C22E	C23E	
Business & IT Services										
CGI Inc. Class A	28,140	11.4x	11.0x	10.5x	18.8x	17.0x	16.1x	2.3x	2.2x	2.1x
TELUS International (CDA), Inc.	7,819	14.5x	12.6x	10.7x	25.6x	21.6x	17.1x	3.6x	3.0x	2.6x
Accenture Plc Class A	170,975	17.8x	14.7x	14.0x	28.8x	24.1x	22.3x	3.4x	2.7x	2.6x
Booz Allen Hamilton	15,454	17.3x	16.0x	15.1x	22.6x	22.8x	20.9x	2.0x	1.7x	1.6x
CACI International Inc Class A	8,135	11.0x	12.2x	11.3x	14.3x	14.5x	13.7x	1.3x	1.3x	1.2x
DXC Technology Co.	9,965	4.9x	4.1x	4.1x	NEG	8.0x	6.5x	0.6x	0.7x	0.7x
Genpact Limited	9,389	14.6x	12.0x	10.7x	23.6x	16.6x	14.8x	2.3x	2.2x	2.0x
International Business Machines	158,232	11.8x	10.6x	10.0x	19.3x	13.4x	12.6x	2.8x	2.6x	2.6x
Atos SE	2,726	2.6x	2.9x	2.6x	NEG	25.3x	6.3x	0.3x	0.2x	0.3x
Capgemini SE	33,548	11.6x	9.6x	8.9x	24.6x	15.2x	13.9x	1.8x	1.5x	1.4x
Sopra Steria Group SA	3,938	7.5x	6.6x	6.2x	14.3x	9.7x	9.0x	0.8x	0.8x	0.8x
Converge Technology Solutions C	1,472	15.6x	9.9x	7.9x	>50	41.6x	22.8x	1.0x	0.6x	0.5x
Business & IT Services Average		11.3x	10.2x	9.4x	21.3x	17.1x	13.9x	1.9x	1.7x	1.6x
HR Outsourcing										
Ceridian HCM Holding, Inc.	9,507	>50	43.4x	35.0x	NEG	>50	>50	9.3x	7.7x	6.6x
Willis Towers Watson	23,703	10.6x	10.1x	9.3x	6.4x	15.4x	13.5x	2.6x	2.7x	2.5x
Aon Plc Class A	68,842	18.0x	17.2x	16.1x	>50	21.3x	19.4x	5.6x	5.4x	5.2x
Automatic Data Processing, Inc.	98,970	25.8x	21.7x	19.5x	38.4x	31.0x	27.6x	6.6x	5.8x	5.4x
Paychex, Inc.	39,799	24.1x	18.5x	17.3x	36.8x	27.8x	25.7x	9.8x	8.3x	7.7x
HR Outsourcing Average		19.6x	22.2x	19.4x	27.2x	23.9x	21.5x	6.8x	6.0x	5.5x
Information Services										
Broadridge Financial Solutions, Inc.	20,723	17.8x	15.9x	14.8x	30.9x	21.3x	19.6x	4.0x	3.5x	3.3x
Dye & Durham Ltd.	2,115	13.3x	13.3x	9.3x	>50	>50	27.0x	5.6x	3.7x	3.2x
Deluxe Corporation	2,161	5.9x	5.3x	5.1x	11.2x	4.0x	3.9x	1.1x	1.0x	1.0x
Information Services Corp	390	5.8x	6.0x	5.9x	10.5x	10.4x	10.9x	2.3x	2.1x	1.9x
Information Services Average		10.7x	10.1x	8.8x	17.5x	11.9x	15.3x	3.3x	2.6x	2.4x
Financial Services Technology										
Fidelity National Information Services	65,517	10.7x	10.1x	9.3x	>50	10.9x	10.1x	4.7x	4.5x	4.2x
Fiserv, Inc.	82,686	14.9x	11.6x	10.6x	48.4x	14.9x	13.2x	5.1x	4.9x	4.6x
Jack Henry & Associates, Inc.	13,813	19.8x	21.9x	20.1x	45.5x	37.4x	35.0x	7.9x	6.9x	6.4x
ACI Worldwide, Inc.	3,534	9.6x	8.8x	8.2x	20.5x	16.6x	14.2x	2.6x	2.5x	2.4x
Temenos AG	4,897	8.9x	12.2x	10.8x	22.7x	16.7x	14.5x	5.1x	5.0x	4.6x
Global Payments Inc.	41,737	11.4x	10.7x	9.8x	34.3x	12.0x	10.5x	4.9x	5.2x	4.8x
Financial Services Technology Average		12.6x	12.5x	11.5x	34.3x	18.1x	16.2x	5.0x	4.8x	4.5x
Diversified Real Estate Services										
Colliers International Group Inc.	4,933	9.0x	7.7x	6.8x	-10.4x	12.7x	11.8x	1.2x	1.1x	1.0x
Altus Group Limited	2,299	22.2x	20.9x	17.4x	25.1x	25.1x	27.5x	3.7x	3.7x	3.1x
CBRE Group, Inc. Class A	23,554	11.0x	7.5x	7.6x	12.5x	11.1x	11.2x	0.8x	0.7x	0.7x
Jones Lang LaSalle Incorporated	9,363	6.4x	6.5x	6.6x	8.5x	8.2x	8.1x	0.5x	0.4x	0.4x
Diversified Real Estate Services Average		12.2x	10.7x	9.6x	8.9x	14.3x	14.7x	1.6x	1.5x	1.3x
Software Focused IT Solutions/VARs										
Softchoice Corporation* USD	930	38.1x	11.2x	9.2x	NEG	20.3x	15.4x	3.5x	2.9x	2.6x
Softcat Plc*	2,147	12.7x	13.6x	12.9x	17.2x	18.6x	18.4x	5.7x	5.8x	5.3x
Crayon Group Holding ASA*	10,523	>50	>50	>50	>50	>50	>50	>50	26.8x	22.8x
Bytes Technology Group Plc*	908	18.7x	14.9x	13.4x	37.2x	20.4x	19.4x	NA	NA	NA
SoftwareONE Holding Ltd.*	1,258	7.6x	5.5x	4.8x	13.2x	13.7x	12.3x	6.0x	1.3x	1.2x
Bytes Technology Group Plc* Average		19.3x	11.3x	10.1x	22.5x	18.2x	16.4x	5.1x	9.2x	8.0x
Business Services Average		13.6x	12.5x	11.3x	22.3x	17.4x	15.8x	3.6x	3.8x	3.5x

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

Source: FactSet and CIBC World Markets Inc.

Exhibit 7: SaaS Stocks – Comp Table, 2021 - 2023E

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise Value (\$MM)	EV/S		
	Growth	Margin	Growth	Margin	Of 40	Of 40		C21	C22E	C23E
Tier 1 SaaS (Rule of 40 > 60)										
Zoom Video Communications	18%	31%	6%	27%	49%	33%	17,395	6.6x	4.0x	4.0x
CrowdStrike Holdings, Inc.	61%	30%	44%	28%	91%	72%	34,378	39.3x	15.9x	15.9x
Shopify, Inc.	30%	1%	21%	-9%	31%	12%	24,001	5.2x	4.4x	4.4x
Zscaler, Inc.	62%	24%	38%	22%	86%	60%	20,596	30.6x	16.3x	16.3x
Lightspeed POS, Inc.	101%	-19%	34%	-5%	82%	29%	1,692	7.6x	2.4x	2.4x
DocuSign, Inc.	30%	20%	11%	15%	51%	27%	9,425	6.5x	3.9x	3.9x
Veeva Systems Inc	20%	38%	15%	37%	58%	52%	21,934	15.0x	10.4x	10.4x
Atlassian Corp. Plc	34%	27%	29%	22%	61%	50%	47,716	22.8x	14.9x	14.9x
Twilio, Inc.	51%	-6%	28%	-2%	45%	26%	8,519	3.0x	2.2x	2.2x
Servicenow, Inc.	28%	31%	23%	30%	58%	53%	70,705	12.0x	9.7x	9.7x
HubSpot, Inc.	42%	16%	23%	12%	58%	35%	12,171	9.4x	7.2x	7.2x
Tier 1 SaaS (Rule of 40 > 60) Average								14.4x	8.3x	8.3x

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise Value (\$MM)	EV/S		
	Growth	Margin	Growth	Margin	Of 40	Of 40		C21E	C22E	C23E
Tier 2 SaaS (Rule of 40 b/w 40-60)										
Docebo, Inc.	50%	-2%	36%	-4%	48%	32%	695	6.7x	4.8x	3.6x
Qualys, Inc.	17%	40%	18%	36%	56%	55%	4,673	11.3x	9.6x	9.6x
Descartes Systems	20%	37%	10%	37%	57%	47%	5,306	12.5x	10.8x	9.7x
Avalara Inc	33%	3%	21%	3%	36%	24%	6,659	9.5x	7.7x	7.7x
Five9, Inc.	34%	-4%	23%	7%	30%	30%	4,253	7.0x	5.4x	5.4x
Dropbox, Inc.	11%	33%	6%	34%	44%	40%	8,130	3.8x	3.5x	3.5x
Wix.com Ltd.	16%	-1%	8%	3%	15%	11%	3,870	3.0x	2.8x	2.8x
Workday, Inc.	22%	21%	19%	20%	43%	39%	35,956	8.4x	5.9x	5.9x
VMware, Inc.	7%	24%	6%	29%	31%	35%	55,844	4.7x	4.2x	4.2x
Tier 2 SaaS (Rule of 40 b/w 40-60) Average								7.4x	6.1x	5.8x

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise Value (\$MM)	EV/S		
	Growth	Margin	Growth	Margin	Of 40	Of 40		C21E	C22E	C23E
Tier 3 SaaS (Rule of 40 b/w 28-40)										
BlackLine, Inc.	22%	8%	22%	6%	30%	28%	3,243	7.6x	6.2x	6.2x
Zendesk, Inc.	30%	12%	21%	14%	42%	35%	9,660	7.2x	5.8x	5.8x
MongoDB, Inc.	54%	-2%	25%	2%	52%	27%	12,106	20.5x	10.2x	10.2x
LivePerson, Inc.	19%	-27%	5%	-4%	-8%	1%	691	1.5x	1.3x	1.3x
Rapid7 Inc.	33%	5%	23%	11%	38%	34%	3,321	6.2x	4.8x	4.8x
Paylocity Holding Corp.	34%	16%	28%	15%	50%	43%	12,205	19.2x	12.5x	12.5x
Q2 Holdings, Inc.	18%	0%	18%	3%	18%	21%	1,774	3.6x	3.1x	3.1x
Akamai Technologies, Inc.	7%	24%	3%	21%	31%	24%	14,965	4.3x	4.2x	4.2x
Tier 3 SaaS (Rule of 40 b/w 28-40) Average								8.8x	6.0x	6.0x

	LTM Revenue	LTM FCF	NTM Revenue	NTM FCF	LTM Rule	NTM Rule	Enterprise Value (\$MM)	EV/S		
	Growth	Margin	Growth	Margin	Of 40	Of 40		C21E	C22E	C23E
Tier 4 SaaS (Rule of 40 <28)										
RingCentral, Inc.	33%	8%	22%	9%	40%	31%	4,219	2.6x	2.1x	2.1x
Teradata Corporation	-3%	19%	-3%	23%	16%	20%	3,077	1.6x	1.7x	1.7x
Zuora, Inc.	15%	4%	13%	0%	19%	13%	754	2.5x	1.9x	1.9x
New Relic, Inc.	20%	3%	17%	1%	23%	18%	3,573	5.4x	4.0x	4.0x
Kinaxis, Inc.	35%	7%	22%	9%	42%	31%	2,758	11.0x	7.6x	6.8x
Yext, Inc.	8%	3%	3%	-1%	11%	2%	426	1.2x	1.1x	1.1x
Splunk Inc.	26%	7%	21%	14%	33%	35%	14,233	6.4x	4.3x	4.3x
Tier 4 SaaS (Rule of 40 <28) Average								4.4x	3.3x	3.1x

SaaS Average								9.3x	6.2x	6.1x
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Source: Company reports and CIBC World Markets Inc.

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Neutral	NT	Stock is expected to perform in line with similar stocks in the coverage universe during the next 12-18 months.
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