

Cloud Applications & Analytics

CloudTracker | March Madness Drives Cloud Sector Down -10% Q1; Time to Revisit

CONCLUSION

Following a record-setting 2020, cloud software performance turned from mixed in February (down 0.9% MTD) to challenged in March (down 10% MTD). Despite continued strong underlying demand fundamentals, rising interest rates coupled with sector rotation pressured cloud stocks, resulting in 51 stocks to decline for the month of March. The average cloud stock (n=65) now sits 29% below the 52W highs entering April. Based on a screen of cloud software stocks with the highest upside potential, we flag five cloud pure-plays including ASAN, MDB, TWLO, AVL, and PLAN.

- **CloudTracker | Cloud index sees 10% decline in March.** Coming off a record-setting 2020, driven by growing optimism around the shift to digital and broader cloud adoption, cloud software performance turned from mixed in February -0.9% MTD to challenged in March with the group at -10% MTD. Rising interest rates coupled with sector rotation pressured cloud stocks, despite robust demand fundamentals and several strong beat and raise scenarios. The average cloud stock (n=65) now sits 29% below the 52W highs entering April. High multiple cloud stocks (>30x 2021 EV/S) average 35% off 52W highs but continue to deliver very high growth rates (66% L4Q average | 57% median).
- **Introducing 3-Factor Cloud Valuation Framework for *exceptional* growers.** Valuation has resurfaced as one of the primary investor concerns after the cloud software sector re-rated post COVID, rising 4-5 turns higher to new peak levels at 19x NTM EV/S entering February. Despite the 27% median pull-back from 52W highs, aggregate cloud valuations remain above the two-year average 12x NTM EV/S. However, we argue using historical valuations in the current state might be understating the *exceptional* growth potential in cloud / digital over the next 5-6 years with greater certainty of adoption. We have created a 3-factor valuation framework as an illustrative example of how growth confidence levels can have a material impact on valuation multiples. For example, underwriting SNOW as an 80% grower versus a 60% grower using our 3-factor framework leads to materially different NTM P/S multiples of 104x versus 58x.
- **Screen based on highest upside potential exposes five stocks.** We screened our coverage list for stocks with the highest upside potential to PT. Following the recent pullback in cloud stocks we highlight the following handful of high quality, high-growth names: **ASAN** (57% upside potential to \$45 PT), **MDB** (59% upside potential to \$425 PT), **TWLO** (61% upside potential to \$550 PT), **AVL** (57% upside potential to \$210 PT), and **PLAN** (62% upside potential to \$87 PT).

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Related Companies:	Share Price:
ADBE	475.37
ASAN	28.58
AVL	133.43
AYX	82.96
BIGC	57.80
BILL	145.50
BL	108.40
COUP	254.48
CRM	211.87
HUBS	454.21
MDB	267.43
NCNO	66.72
PLAN	53.85
SHOP	1,106.50
SNOW	229.28
TWLO	340.76
U	100.31
VEEV	261.24
WDAY	248.43
ZEN	132.62
ZI	48.90
GART	NA

INDUSTRY RISKS

Poor macroeconomic conditions could impact the capacity for enterprise IT investments and the health of supporting ecosystem partners.

CloudTracker | Top Cloud Takeaways Entering Q2 (Exiting March)

1 March Madness: Sector rotation pressures cloud index to decline 10%

CloudTracker Update: Coming off a record-setting 2020, driven by growing optimism around the shift to digital and broader cloud adoption, cloud software performance turned from mixed in February -0.9% MTD to challenged in March with the group declining 10% MTD. Rising interest rates coupled with sector rotation pressured cloud stocks, despite robust demand fundamentals and several strong beat-and-raise scenarios. The average cloud stock (n=65) now sits 29% below the 52W highs entering April.

Leaders Mar 2021

BOX	+25%
DBX	+18%
QLYS	+8%
PFPT	+4%
ADBE	+3%
WDAY	+1%

Laggards Mar 2021

AI	(41%)
SUMO	(38%)
MDLA	(31%)
MDB	(31%)
COUP	(27%)
LMND	(26%)

2 Introducing 3-Factor Cloud Valuation Framework for *exceptional* growers

Valuation has resurfaced as one of the primary investor concerns after the cloud software sector re-rated post COVID, rising 4-5 turns higher to new peak levels at 19x NTM EV/S entering February. Despite the 27% median pull-back from 52W highs, aggregate cloud valuations remain above the two-year average 12x NTM EV/S. However, we argue using historical valuations in the current state might be understating the *exceptional* growth potential in cloud / digital over the next 5-6 years with greater certainty of adoption. We have created a 3-factor valuation framework as an illustrative example how growth confidence levels can have a material impact on valuation multiples.

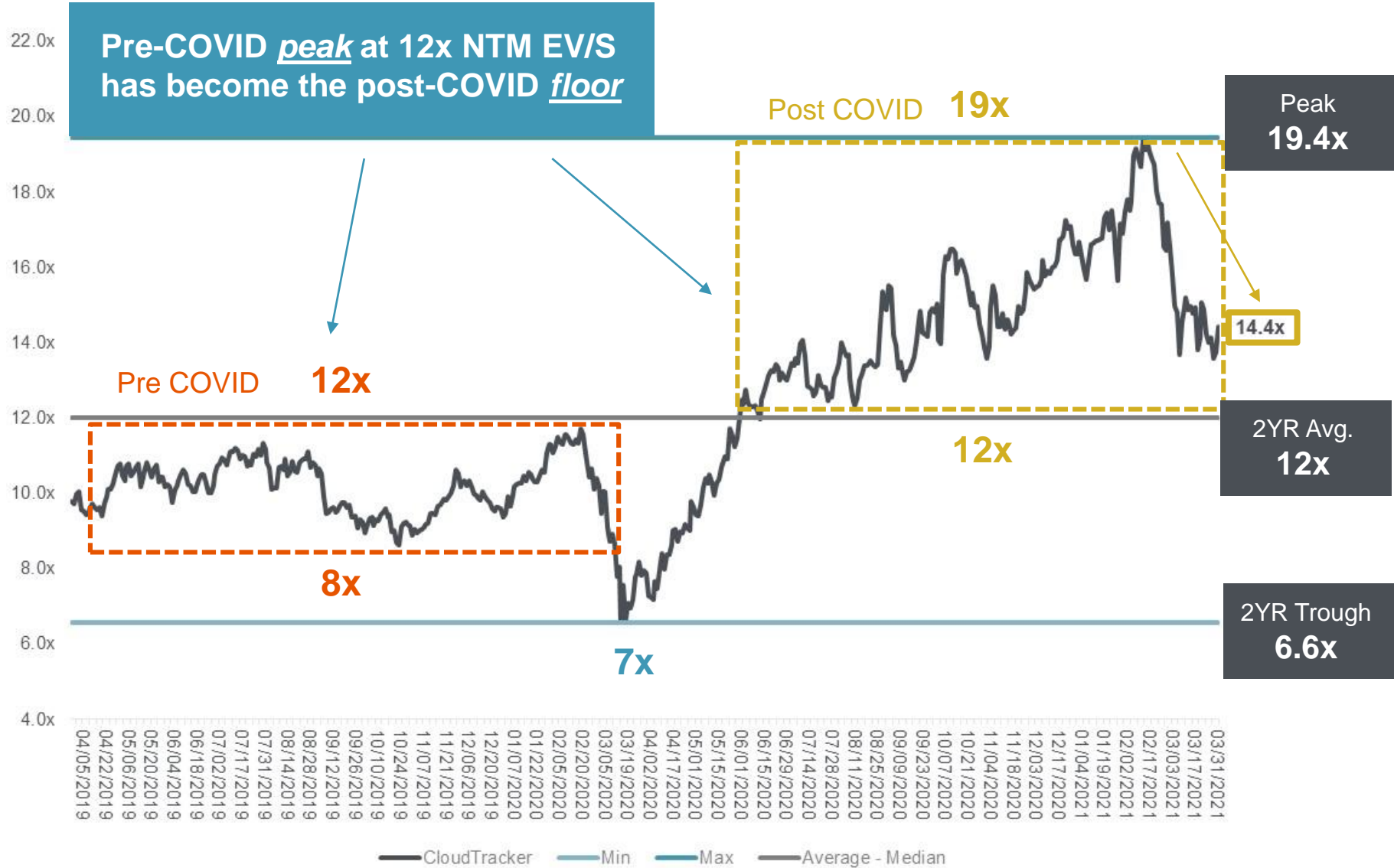
3 Highest Upside Screen | Q2 Stocks = ASAN, MDB, TWLO, AVLRL, PLAN

Company	Ticker	Rating	Price 3/31/2021	Price Target	% to PT	MTD % Chg	% Below 52W High	Growth % y/y
Anaplan	PLAN	OW	\$53.85	\$87.00	62%	(17%)	(38%)	25%
Twilio	TWLO	OW	\$340.76	\$550.00	61%	(13%)	(25%)	65%
MongoDB	MDB	OW	\$267.43	\$425.00	59%	(31%)	(38%)	38%
Asana	ASAN	OW	\$28.58	\$45.00	57%	(17%)	(35%)	57%
Avalara	AVLR	OW	\$133.43	\$210.00	57%	(15%)	(28%)	35%
			Average		59%	(19%)	(33%)	44%

Priced as of 03/31/21

Source: Piper Sandler Estimates, Corporate Reports

CloudTracker | Median NTM EV/S (N = 65 Cloud Software Stocks)



Priced as of 03/31/21

Source: Corporate Reports, FactSet, Piper Sandler

Bracelin Coverage List | Cloud Software & Analytics

Company	Ticker	Rating	Recent Price	Price Target	% to PT
Anaplan	PLAN	OW	\$53.85	\$87.00	62%
Twilio	TWLO	OW	\$340.76	\$550.00	61%
MongoDB	MDB	OW	\$267.43	\$425.00	59%
Asana	ASAN	OW	\$28.58	\$45.00	57%
Avalara	AVLR	OW	\$133.43	\$210.00	57%
Unity	U	OW	\$100.31	\$150.00	50%
Qualtrics	XM	N	\$32.91	\$49.00	49%
Blackline	BL	OW	\$108.40	\$158.00	46%
Alteryx	AYX	OW	\$82.96	\$120.00	45%
ON24	ONTF	OW	\$48.51	\$70.00	44%
BigCommerce	BIGC	OW	\$57.80	\$83.00	44%
Zoominfo	ZI	OW	\$48.90	\$70.00	43%
nCino	NCNO	OW	\$66.72	\$95.00	42%
Snowflake	SNOW	OW	\$229.28	\$312.00	36%
Zendesk	ZEN	OW	\$132.62	\$180.00	36%
Shopify	SHOP	OW	\$1,106.50	\$1,500.00	36%
Veeva	VEEV	OW	\$261.24	\$350.00	34%
Hubspot	HUBS	OW	\$454.21	\$600.00	32%
GoDaddy	GDDY	OW	\$77.62	\$100.00	29%
Microsoft	MSFT	OW	\$235.77	\$300.00	27%
Adobe	ADBE	OW	\$475.37	\$570.00	20%
Coupa	COUP	N	\$254.48	\$300.00	18%
Tyler Tech	TYL	OW	\$424.53	\$500.00	18%
Bill.com	BILL	OW	\$145.50	\$170.00	17%
Workday	WDAY	OW	\$248.43	\$285.00	15%
Salesforce	CRM	N	\$211.87	\$240.00	13%
Slack	WORK	N	\$40.63	\$45.00	11%
Oracle	ORCL	N	\$70.17	\$57.00	-19%

Stock Screen

Highest upside potential to PT

	Price	Mkt-Cap	2022	MTD	% Below	Growth
Ticker	3/31/2021	(Millions)	EV/S	% Chg	52W High	% y/y
PLAN	\$53.85	\$8,772	12.3x	(17%)	(38%)	25%
TWLO	\$340.76	\$63,928	19.0x	(13%)	(25%)	65%
MDB	\$267.43	\$18,653	19.2x	(31%)	(38%)	38%
ASAN	\$28.58	\$5,973	14.6x	(17%)	(35%)	57%
AVLR	\$133.43	\$12,073	14.6x	(15%)	(28%)	35%
		Average	15.9x	(19%)	(33%)	44%

ASAN | 57% upside potential to \$45 PT

MDB | 59% upside potential to \$425 PT

TWLO | 61% upside potential to \$550 PT

AVLR | 57% upside potential to \$210 PT

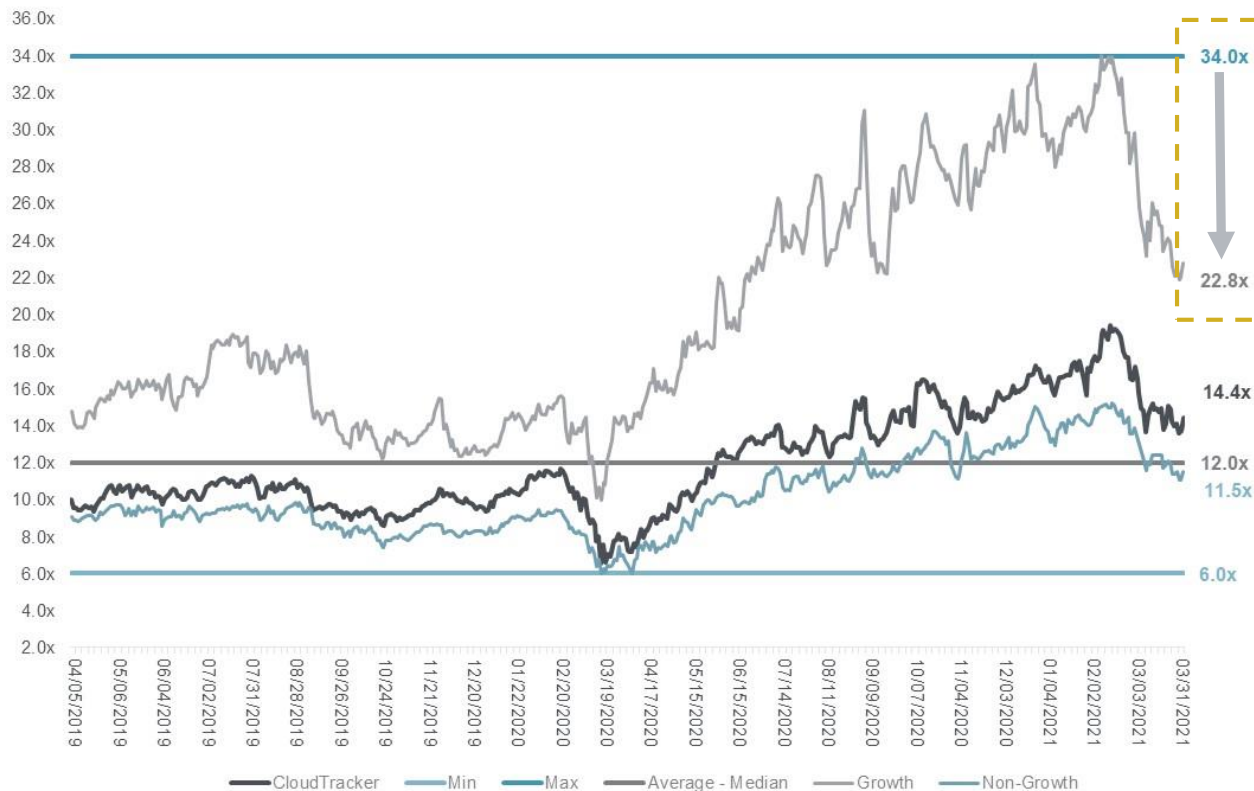
PLAN | 62% upside potential to \$87 PT

Section 1

3-Factor Cloud Valuation Framework

CloudTracker | Highest Growth Cloud Cohort Has Been Hit the Hardest

Biggest pullbacks have occurred in the highest growth cohort. Valuations across the cloud software universe have retrenched the most within the >40% high-growth cloud cohort where multiples have dropped sharply to 22.8x NTM EV/S exiting March from the peak of 34x in early February. While this still represents a material premium to historical multiples and the overall average, we argue this does not reflect current industry conditions where demand drivers for cloud, digital, and AI enablers have also materially strengthened post COVID. Strong demand drivers for cloud were reinforced by our CIO survey entering 2021.



Tier 1		>40% Growth		
Ticker	Last Q % y/y	2021 EV/S	2022 EV/S	% from 52W High
ZM	369%	24.8x	21.1x	(45%)
SQ	141%	26.9x	19.8x	(20%)
SNOW	117%	70.2x	43.1x	(47%)
SHOP	94%	33.7x	26.1x	(26%)
LMND	92%	44.3x	27.2x	(51%)
CRWD	74%	32.5x	24.7x	(27%)
TWLO	65%	24.9x	19.0x	(25%)
ASAN	57%	19.0x	14.6x	(35%)
DOCU	57%	21.3x	16.6x	(30%)
DDOG	56%	32.6x	24.6x	(30%)
ZS	55%	33.7x	25.8x	(26%)
ZI	53%	31.3x	24.4x	(24%)
NET	50%	38.8x	29.4x	(27%)
NCNO	47%	25.6x	21.7x	(36%)
COUP	47%	30.6x	24.6x	(33%)
OKTA	40%	28.6x	22.2x	(25%)
FSLY	40%	21.8x	17.3x	(51%)
SMAR	40%	16.2x	12.6x	(25%)
Average	83%	30.9x	23.1x	(32%)
Median	56%	29.6x	23.3x	(29%)
High	369%	70.2x	43.1x	(20%)
Low	40%	16.2x	12.6x	(51%)

3-Factor Cloud Valuation Framework for **Exceptional** Growers

Revisiting Cloud Valuations: Valuation has resurfaced as one of the primary investor concerns after the cloud software sector re-rated post COVID, rising 4-5 turns higher to new peak levels at 19x NTM EV/S entering February. Despite the 27% median pull-back from 52W highs, aggregate cloud valuations remain above the two-year average 12x NTM EV/S. However, we argue using historical valuations in the current state might be understating the **exceptional** growth potential in cloud / digital over the next 5-6 years with greater certainty of adoption. We have created a 3-factor valuation framework as an illustrative example of how growth confidence levels can have a material impact on valuation multiples.

We have created a 3-factor valuation framework looking out over a six-year period to illustrate the magnitude of valuation premiums that can be assigned to **exceptional** growth models:

Factor 1: Growth Multiplier - revenue multiplier above the 20% baseline compound growth assumption at Year 6.

Factor 2: CloudTracker Market Multiple – two-year median NTM EV/S multiple for high-margin cloud software

Factor 3: Confidence Factor – confidence level in underwriting a six-year sustainable growth rate

20% Growth Case								3.0x	Factor 1 Growth Multiplier 1.0x	Factor 2 CloudTracker Market Multiple 12x	Factor 3 Confidence Factor 100%		
20% Grower	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6						3-Factor NTM P/S 12x	Implied CY23 P/S 8.3x
Cloud % Y/Y	\$350 NM	\$420 20%	\$504 20%	\$605 20%	\$726 20%	\$871 20%	\$1,045 20%					\$5,040 mkt-cap	

\$350M business growing 20% annually could scale revenue to ~\$1B by Year 6.

3-factor valuation framework suggests this cloud business with a 20% baseline growth rate could justify a market-cap of \$5B today assuming a cloud market multiple of 12x NTM P/S. (implies CY23 multiple of 8.3x)

3-Factor Cloud Valuation Framework for **Exceptional** Growers

Snowflakes are renowned for their uniqueness. By most measures, a \$350M business model where investors are comfortable underwriting 20% durable growth over a six-year period is generally viewed as a solid company. However, the post-COVID era has sparked greater interest and confidence in cloud and digital adoption whereby creating a unique demand environment that could spur outsized cloud growth over the next 5+ years. This bullish demand backdrop for cloud was reinforced by our CIO survey data entering 2021. Leveraging our 3-factor cloud valuation framework to illustrate how **exceptional** growth can materially impact valuation multiples, we highlight a scenario below comparing how investors might view an 80% grower versus the 20% baseline grower. Ultimately, we continue to believe most high margin cloud software models should be valued on a FCF basis but until each business model reaches a normalized steady state margin level, we argue that P/S or EV/S multiples remain appropriate.

Scenario A: Baseline Grower (20%)

Assumes a \$350M cloud business growing 20% annually could scale revenue to \$1B in Year 6, justifying a \$5B market capitalization applying a cloud market multiple (12x NTM EV/S) using a 100% confidence factor.

Baseline Grower								Factor 1	Factor 2	Factor 3		
20% Grower	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6		Growth Multiplier	CloudTracker Market Multiple	Confidence Factor	3-Factor NTM P/S	Implied CY23 P/S
Cloud	\$350	\$420	\$504	\$605	\$726	\$871	\$1,045	1.0x	12x	100%	12x	8.3x
% Y/Y	NM	20%	20%	20%	20%	20%	20%				\$5,040 mkt-cap	

\$1B

revenue model

\$5B

market cap

Scenario B: **Exceptional** Grower (80%)

We estimate a \$350M business growing 80% annually that could scale revenue to \$11.9B in Year 6 could justify a \$60B market capitalization applying a growth multiplier of 11.4x to the cloud market multiple with a 70% confidence factor.

Exceptional Grower								Factor 1	Factor 2	Factor 3		
80% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Growth Multiplier	CloudTracker Market Multiple	Confidence Factor	3-Factor NTM P/S	Implied CY23 P/S
Cloud	\$350	\$630	\$1,134	\$2,041	\$3,674	\$6,613	\$11,904	11.4x	12x	70%	96x	29.5x
% Y/Y	100%	80%	80%	80%	80%	80%	80%				\$60,279 mkt-cap	

\$11.9B

revenue model

\$60B

market cap

SNOW | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

Snowflake (SNOW) | Overweight – PT \$312. SNOW is breaking all previous records as the fastest growing enterprise software company (117% growth last quarter) with arguably one of the strongest leadership teams within the enterprise sector. Sky high investor optimism in 2020 for SNOW has been quelled in February and March by rising interest rates, sector rotation, and increasing scrutiny over a premium valuation multiple. That said, our 3-factor cloud valuation framework suggests there will remain a healthy investor debate on whether to underwrite 80% durable growth (\$20B implied revenue) or 60% durable growth (\$10B implied revenue) looking out over the next six years. The raw data sharing potential keeps us in the bull camp.

Ticker **SNOW**
Price **\$233**
FD shares **357**
Market cap **\$83,052**

(46%) | **117%**
Below 52W High | % Y/Y Q4 Growth

Exceptional

80% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Snowflake	\$592	\$1,066	\$1,918	\$3,453	\$6,215	\$11,186	\$20,135	34.0x	11.4x	12x	76%	104x		
% Y/Y	139%	80%	80%	80%	80%	80%	80%							
												\$111,281	34%	32.2x
												\$312		

75% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Snowflake	\$592	\$1,036	\$1,813	\$3,173	\$5,552	\$9,717	\$17,004	28.7x	9.6x	12x	80%	92x		
% Y/Y	139%	75%	75%	75%	75%	75%	75%							
												\$95,670	15%	30.2x
												\$268		

60% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Snowflake	\$592	\$949	\$1,521	\$2,439	\$3,909	\$6,266	\$10,044	17.0x	5.7x	12x	85%	58x		
% Y/Y	139%	60%	60%	60%	60%	60%	60%							
												\$55,001	-34%	22.6x
												\$154		

Baseline

20% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Snowflake	\$592	\$710	\$852	\$1,023	\$1,228	\$1,473	\$1,768	3.0x	1.0x	12x	100%	12x		
% Y/Y	139%	20%	20%	20%	20%	20%	20%							
												\$8,525	-90%	8.3x
												\$24		

Question Is this a \$10B business or \$20B business in Year 6?
What are you comfortable underwriting?

MDB | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

MongoDB (MDB) | Overweight – PT \$425. Despite reporting a material beat-and-raise quarter, MDB shares have pulled back 37% from the 52W highs to 19x CY22 EV/S (vs. CloudTracker average of 15x). Using our 3-factor cloud valuation framework suggests the market is currently factoring in 34% durable growth rate. We argue the mix shift to Atlas (consumption-based) could accelerate growth overtime to a durable 40% to 45% growth profile (i.e. Atlas grew 66% y/y last quarter and is now 49% of revenue). Our PT of \$425 is based on 48x EV/CY26E FCF, discounted back four years at 10%.

Ticker **MDB**
Price **\$271**
FD shares **65**
Market cap **\$17,596**

(37%) | **38%**
Below 52W High | % Y/Y Q4 Growth

Exceptional

45% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
MongoDB	\$590	\$856	\$1,241	\$1,800	\$2,610	\$3,784	\$5,487	9.3x	3.1x	12x	86%	32x		
% Y/Y	44%	45%	45%	45%	45%	45%	45%					\$27,626	57%	15.3x
												\$425		

40% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
MongoDB	\$590	\$827	\$1,157	\$1,620	\$2,268	\$3,175	\$4,445	7.5x	2.5x	12x	90%	27x		
% Y/Y	44%	40%	40%	40%	40%	40%	40%					\$22,509	28%	13.9x
												\$346		

34% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
MongoDB	\$590	\$791	\$1,060	\$1,421	\$1,903	\$2,551	\$3,418	5.8x	1.9x	12x	98%	23x		
% Y/Y	44%	34%	34%	34%	34%	34%	34%					\$18,038	3%	12.7x
												\$278		

Baseline	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
MongoDB	\$590	\$708	\$850	\$1,020	\$1,224	\$1,469	\$1,763	3.0x	1.0x	12x	99%	12x		
% Y/Y	44%	20%	20%	20%	20%	20%	20%					\$8,416	-52%	8.3x
												\$129		

Question Is this a \$3.4B business or \$5.5B business in Year 6?
Is this a durable 34% grower or a 40-45% grower?

SHOP | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

Shopify (SHOP) | Overweight – PT \$1,500. SHOP is the poster child for the ‘digital awakening’ era post COVID with revenue growth accelerating to >90% (vs. 47% pre COVID). That said, SHOP shares have declined 26% from the 52W highs in early February on growing fears that growth moderates as it lapses the eCommerce tailwinds during Q2, Q3, and Q4. Having the benefit of a business model with ~70% of revenue tied to B2C volumes, we suspect SHOP has a good chance of sustaining high growth. The bigger debate remains whether durable growth in a post-COVID world can be 40% or closer to 45-50%. Our 3-factor cloud valuation framework exposes these differing scenarios. Our PT of \$1,500 is based on 53x EV/CY26E FCF, discounted at 10%.

Ticker SHOP
Price \$1,109
FD shares 126
Market cap \$139,738

(26%) 94%
Below 52W High % Y/Y Q4 Growth

Exceptional

50% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Shopify	\$2,929	\$4,394	\$6,591	\$9,887	\$14,831	\$22,246	\$33,369	11.4x	3.8x	12x	83%	38x		
% Y/Y	86%	50%	50%	50%	50%	50%	50%							
												\$166,956	19%	16.9x
												\$1,325		

45% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Shopify	\$2,929	\$4,257	\$6,185	\$8,986	\$13,057	\$18,972	\$27,567	9.4x	3.2x	12x	87%	33x		
% Y/Y	86%	45%	45%	45%	45%	45%	45%							
												\$140,044	0%	15.6x
												\$1,111		

40% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Shopify	\$2,929	\$4,101	\$5,742	\$8,039	\$11,254	\$15,756	\$22,058	7.5x	2.5x	12x	90%	27x		
% Y/Y	86%	40%	40%	40%	40%	40%	40%							
												\$111,693	-20%	13.9x
												\$886		

Baseline	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
20% Grower														
Shopify	\$2,929	\$3,515	\$4,218	\$5,062	\$6,075	\$7,290	\$8,747	3.0x	1.0x	12x	100%	12x		
% Y/Y	86%	20%	20%	20%	20%	20%	20%							
												\$42,185	-70%	8.3x
												\$335		

Question Is this a \$22B business or \$33B business in Year 6?
What are you comfortable underwriting?

TWLO | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

Twilio (TWLO) | Overweight – PT \$550. The combination of Segment coupled with post-COVID digital awakening tailwinds positions TWLO for another outstanding year. Not only has the world aggressively embraced direct-to-consumer messaging but the scope of the opportunity continues to expand as the API portfolio broadens to IoT, contact centers, video, e-mail, chatbots, and data workflows. Considering shares have pulled back 25% from 52W highs, we see an upward bias to a 45% to 50% durable growth scenario fueled by organic and an ambitious inorganic appetite to further build out a cloud platform. Our PT of \$550 is based on 46x EV/CY26E FCF, discounted back four years at 10%.

Ticker TWLO
Price \$343
FD shares 173
Market cap \$59,389

(25%) | 65%
Below 52W High | % Y/Y Q4 Growth

Exceptional

50% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Twilio	\$1,762	\$2,643	\$3,964	\$5,946	\$8,919	\$13,378	\$20,068	11.4x	3.8x	12x	75%	34x		
% Y/Y	55%	50%	50%	50%	50%	50%	50%					\$90,729	53%	15.3x
												\$524		

45% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Twilio	\$1,762	\$2,555	\$3,704	\$5,371	\$7,788	\$11,293	\$16,374	9.3x	3.1x	12x	85%	32x		
% Y/Y	55%	45%	45%	45%	45%	45%	45%					\$81,103	37%	15.1x
												\$469		

36% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Twilio	\$1,762	\$2,403	\$3,278	\$4,471	\$6,098	\$8,318	\$11,346	6.4x	2.2x	12x	95%	25x		
% Y/Y	55%	36%	36%	36%	36%	36%	36%					\$59,084	-1%	13.2x
												\$342		

Baseline	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Twilio	\$1,762	\$2,114	\$2,537	\$3,044	\$3,653	\$4,384	\$5,261	3.0x	1.0x	12x	100%	12x		
% Y/Y	55%	20%	20%	20%	20%	20%	20%					\$25,370	-57%	8.3x
												\$147		

Question Is this a \$11B business or \$20B business in Year 6?
Is this a durable 36% grower or a 45-50% grower?

ASAN | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

Asana (ASAN) | Overweight – PT \$45. ASAN software sits at an interesting WFH intersection as a new digital coordination software layer that interfaces with Microsoft Teams, Atlassian's Trello, Slack, Zoom, Box, Dropbox, and others. Revenue growth for a \$250M+ annualized run-rate model remains robust based on 57% growth last quarter as adoption has expanded to 1.5M paid users (scratching the surface of a 1.2B knowledge worker TAM). The 35% sell-off from the 52W highs creates a compelling debate on whether this model can sustain 45% growth or 55% to 65% growth, particularly given many enterprises have yet to embrace Asana wall-to-wall. Our PT of \$45 is based on 42x EV/CY26E FCF, discounted back four years at 10%.

Ticker **ASAN**
Price **\$29**
FD shares **357**
Market cap **\$10,189**

(35%) | **57%**
Below 52W High | % Y/Y Q4 Growth

Exceptional

65% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Asana	\$227	\$375	\$618	\$1,020	\$1,682	\$2,776	\$4,581	20.2x	6.8x	12x	80%	65x		
% Y/Y	66%	65%	65%	65%	65%	65%	65%					\$24,299	138%	23.8x
												\$68		

55% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Asana	\$227	\$352	\$545	\$845	\$1,310	\$2,031	\$3,148	13.9x	4.6x	12x	85%	47x		
% Y/Y	66%	55%	55%	55%	55%	55%	55%					\$16,667	64%	19.7x
												\$47		

45% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Asana	\$227	\$329	\$477	\$692	\$1,003	\$1,455	\$2,110	9.3x	3.1x	12x	90%	34x		
% Y/Y	66%	45%	45%	45%	45%	45%	45%					\$11,064	9%	16.0x
												\$31		

Baseline

20% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Asana	\$227	\$272	\$327	\$392	\$471	\$565	\$678	3.0x	1.0x	12x	100%	12x		
% Y/Y	66%	20%	20%	20%	20%	20%	20%					\$3,269	-68%	8.3x
												\$9		

Question Is this a \$2B business or \$4.5B business in Year 6?
Are you comfortable underwriting 45% or 55-65% growth?

AVLR | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

Avalara (AVLR) | Overweight – PT \$210. AVLR shares have declined 15% MTD and now sit 28% from the 52W highs, negatively impacted by rising interest rates and a sector rotation. That said, our 3-factor cloud valuation framework on AVLR suggests that shares currently reflect high confidence in sustaining 28% durable growth over the next 5-6 years. We argue the international opportunity and robust M&A appetite could fuel durable growth of 33% up to 40% that could expand revenue to \$3.7B+ within six years. Our PT of \$210 is based on 48x EV/CY26E FCF, discounted back four years at 10%.

Ticker AVLR
Price \$133
FD shares 89
Market cap \$11,880

(28%) | 35%
Below 52W High | % Y/Y Q4 Growth

Exceptional

40% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Avalara	\$501	\$701	\$981	\$1,374	\$1,923	\$2,692	\$3,769	7.5x	2.5x	12x	88%	27x		
% Y/Y	31%	40%	40%	40%	40%	40%	40%						57%	13.6x
							\$210							

33% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Avalara	\$501	\$667	\$889	\$1,186	\$1,580	\$2,107	\$2,808	5.6x	1.9x	12x	97%	22x		
% Y/Y	31%	33%	33%	33%	33%	33%	33%						23%	12.3x
							\$164							

28% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Avalara	\$501	\$643	\$825	\$1,060	\$1,361	\$1,747	\$2,243	4.5x	1.5x	12x	99%	18x		
% Y/Y	31%	28%	28%	28%	28%	28%	28%						-4%	10.8x
							\$129							

Baseline

20% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Avalara	\$501	\$601	\$721	\$865	\$1,038	\$1,246	\$1,495	3.0x	1.0x	12x	100%	12x		
% Y/Y	31%	20%	20%	20%	20%	20%	20%						-39%	8.3x
							\$81							

Question Is this a \$2.2B business or \$3.8B via organic and inorganic means by Year 6?

PLAN | 3-Factor Cloud Valuation Framework for **Exceptional** Growers

Anaplan (PLAN) | Overweight – PT \$87. PLAN shares have declined 17% MTD and now sit 38% from the 52W highs as subscription growth slipped below 30% for the first time since the 2018 IPO and management execution risk continues to weigh on investor confidence regarding the sustainability of 30%+ growth. That said, our 3-factor cloud valuation framework on PLAN suggests that shares currently reflect a business model factoring in 25% durable growth potential over the next 5-6 years. Bullish investors willing to underwrite a higher durable growth rate of 30% to 40% as back-office modernization priorities take hold could justify a healthy return. Our PT of \$87 is based on target 45x CY26E free cash flow, discounted back four years at 10%.

Ticker PLAN
Price \$54
FD shares 163
Market cap \$8,778

(38%) | **25%**
Below 52W High | % Y/Y Q4 Growth

Exceptional

40% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Anaplan	\$448	\$627	\$878	\$1,229	\$1,720	\$2,408	\$3,371	7.5x	2.5x	12x	75%	23x		
% Y/Y	32%	40%	40%	40%	40%	40%	40%					\$14,226	62%	11.6x
												\$87		

30% Grower

% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6					3-Factor NTM P/S		
Anaplan	\$448	\$582	\$757	\$984	\$1,279	\$1,662	\$2,161	4.8x	1.6x	12x	97%	19x	% from recent price	Implied CY23 P/S
% Y/Y	32%	30%	30%	30%	30%	30%	30%					\$10,952		
												\$67	25%	11.1x

25% Grower

% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6					3-Factor NTM P/S		
Anaplan	\$448	\$561	\$704	\$883	\$1,107	\$1,388	\$1,741	3.9x	1.3x	12x	99%	15x	% from recent price	Implied CY23 P/S
% Y/Y	32%	25%	25%	25%	25%	25%	25%					\$8,687	-1%	9.8x
												\$53		

Baseline

20% Grower	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Revenue Expansion	Factor 1	Factor 2	Factor 3	3-Factor NTM P/S	% from recent price	Implied CY23 P/S
Anaplan	\$448	\$537	\$645	\$774	\$928	\$1,114	\$1,337	3.0x	1.0x	12x	100%	12x		
% Y/Y	32%	20%	20%	20%	20%	20%	20%					\$6,448	-27%	8.3x
												\$40		

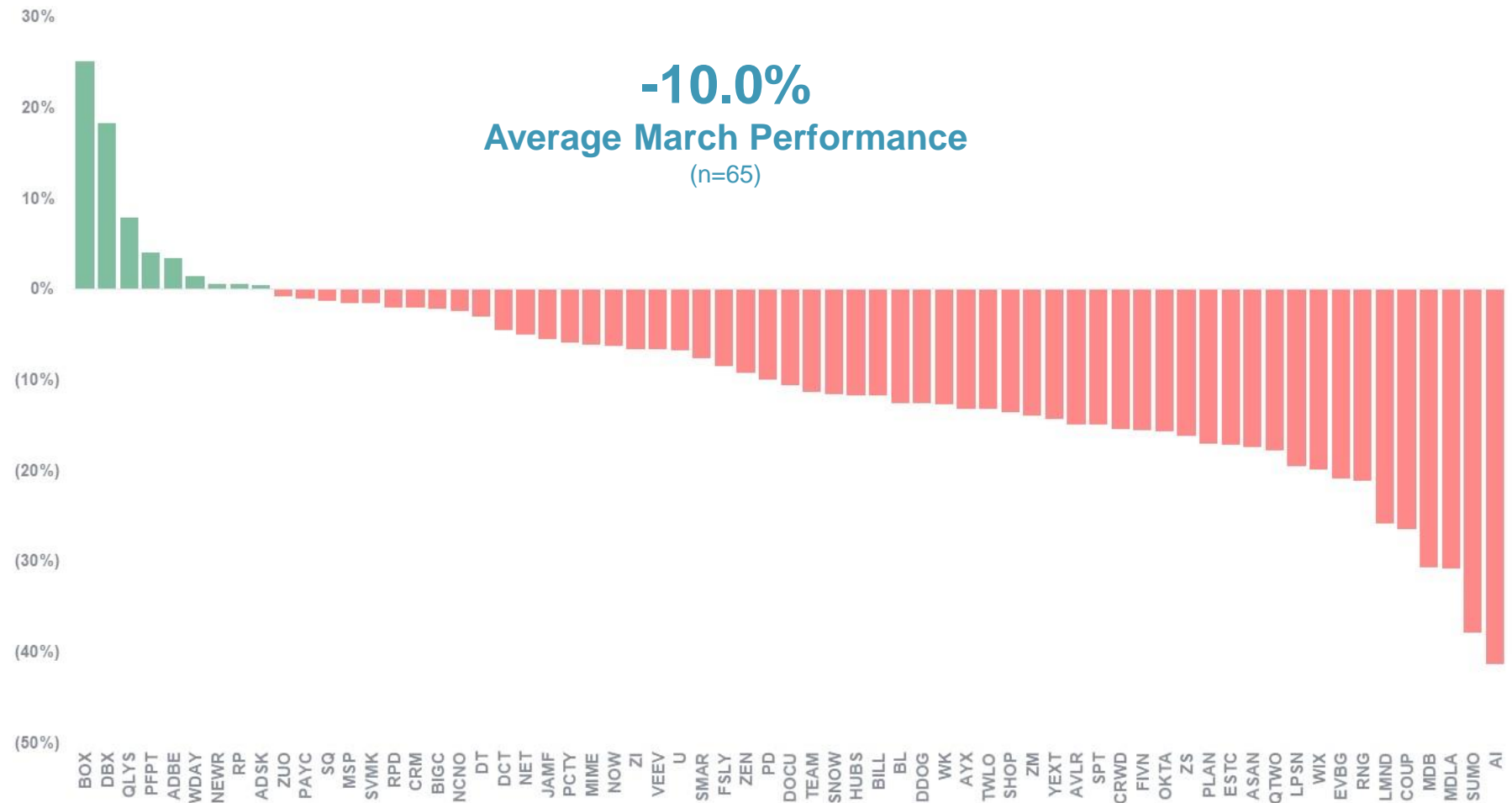
Question Is this a durable 25% grower or 30-40% grower?

Section 2

CloudTracker | March 2021

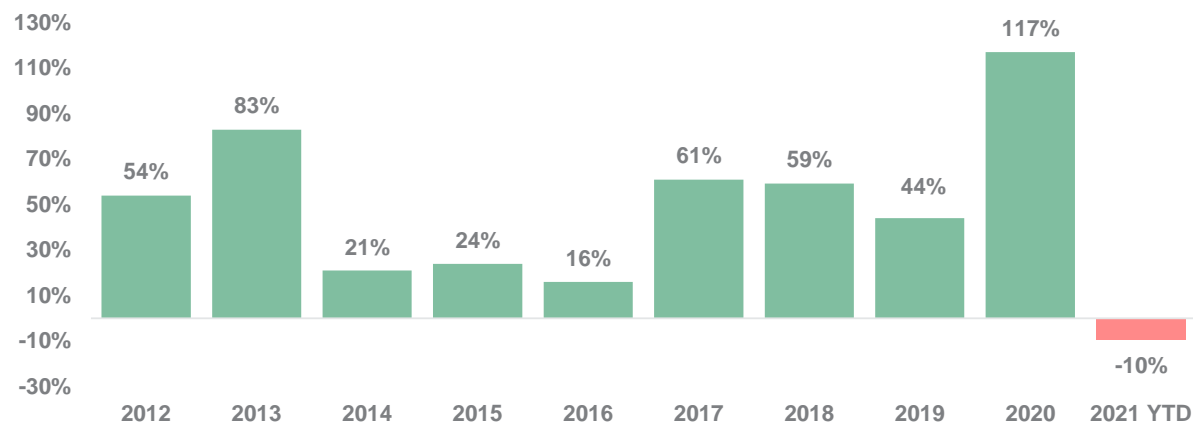
CloudTracker | Monthly Leaders & Laggards

Jan 2.1%	Feb -0.9%	Mar -10.0%
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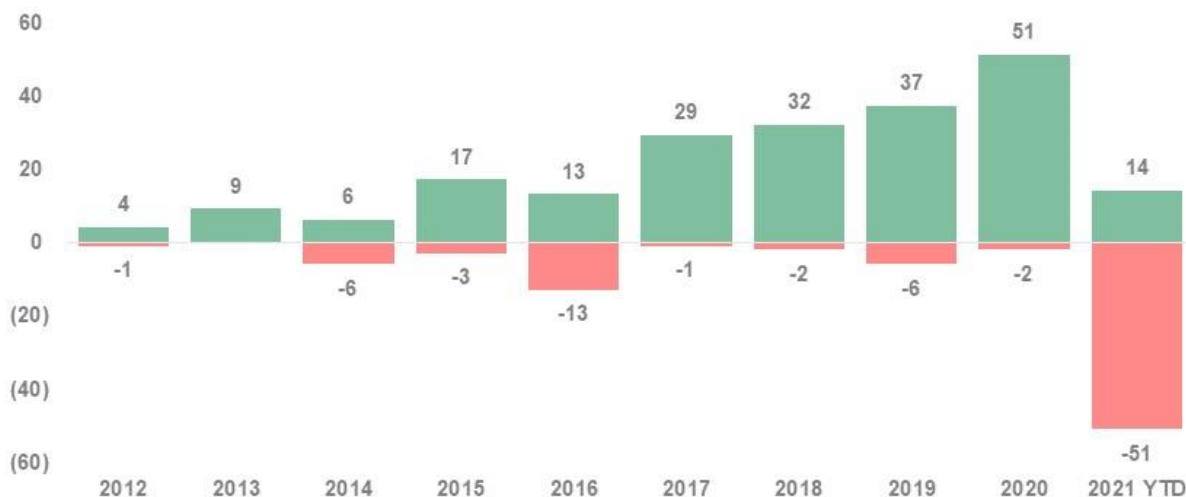


CloudTracker | Historical Performance Trends

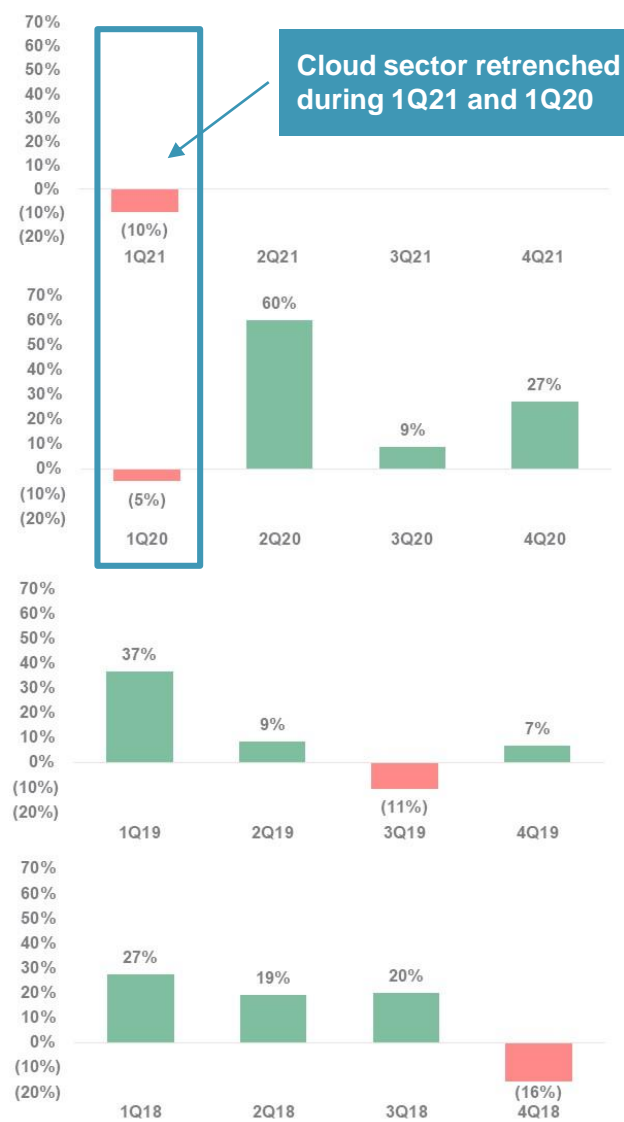
Annual: Average Return



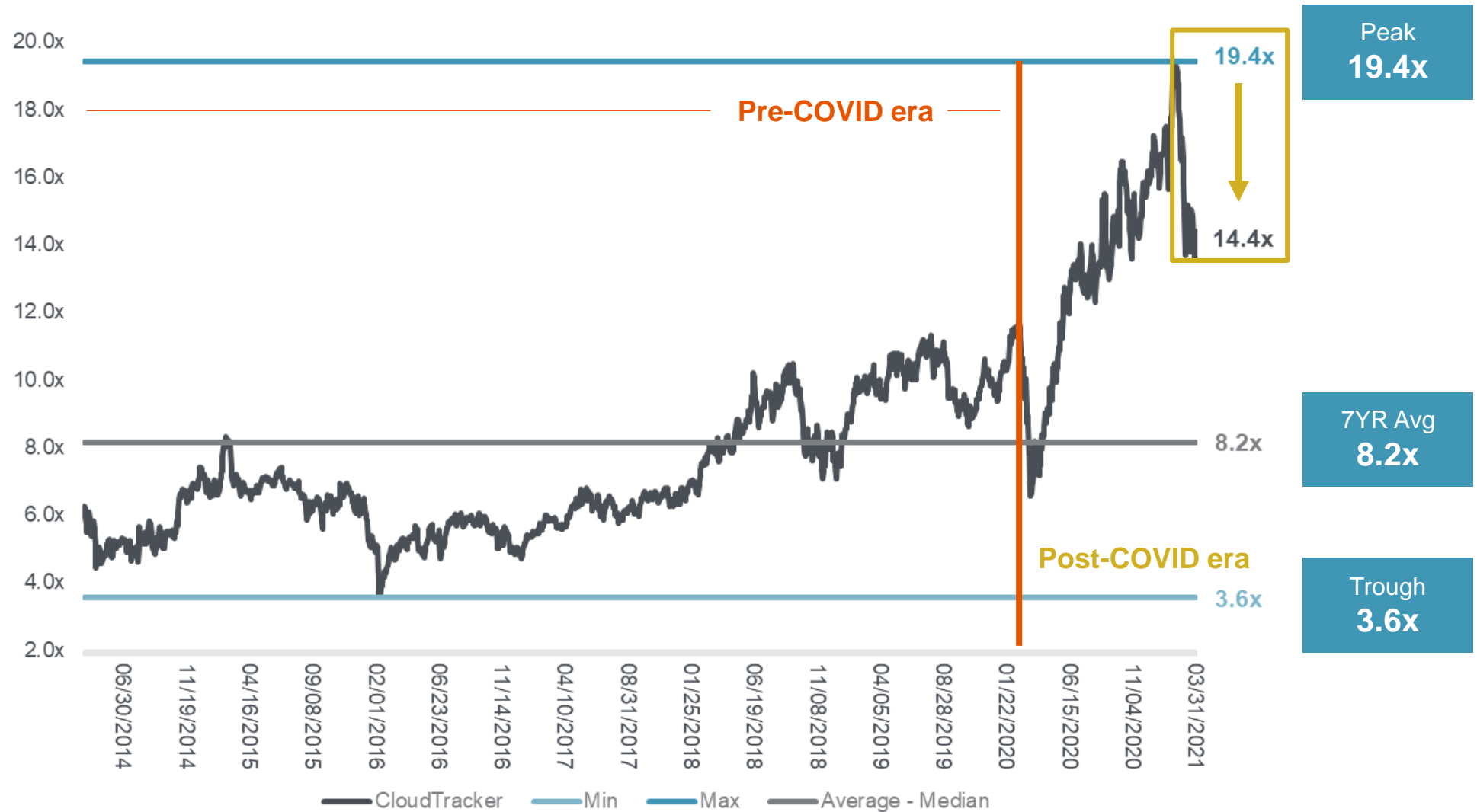
Annual: Advances and Declines



Quarterly: Average Return



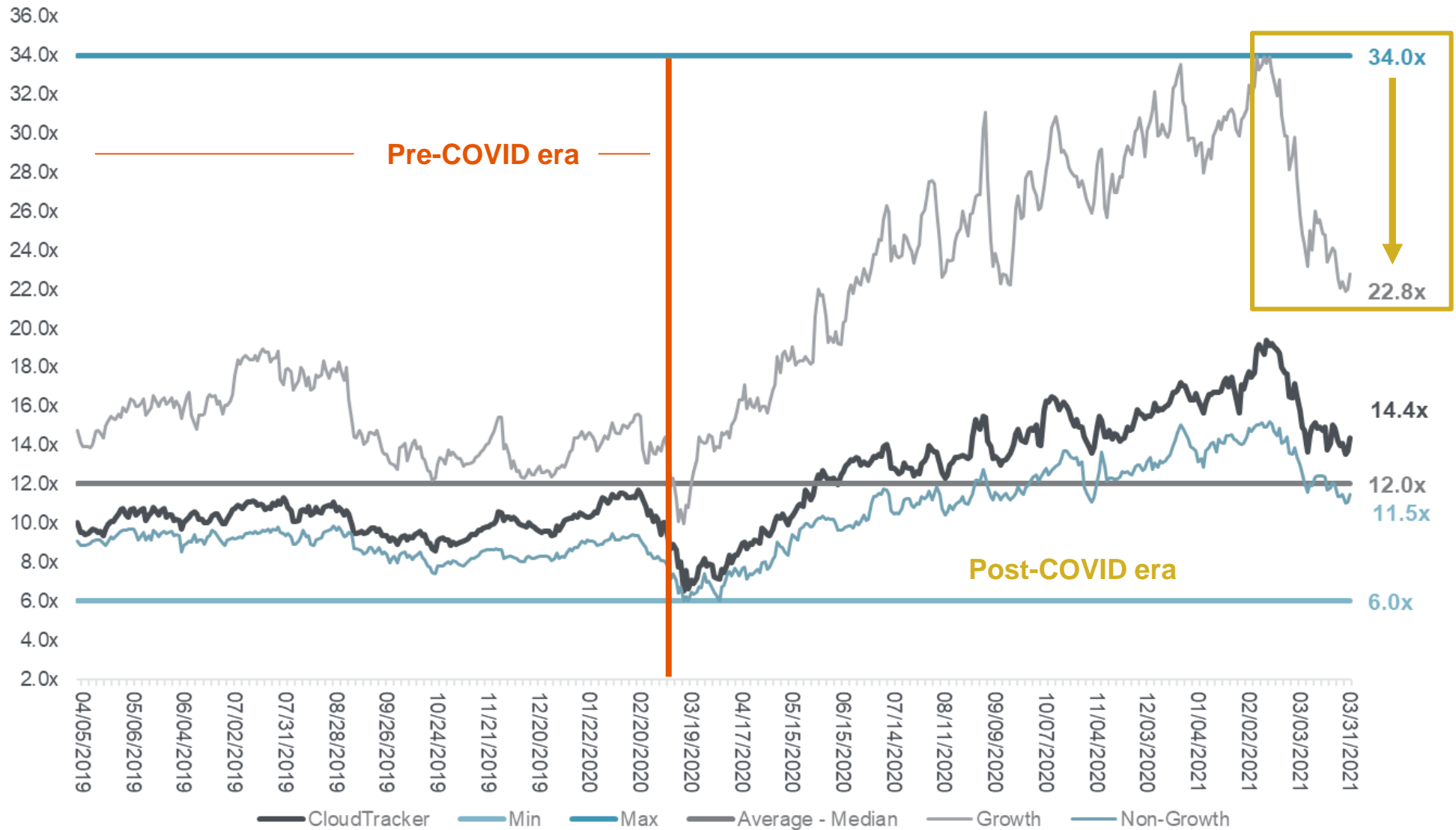
CloudTracker | Valuation Monitor – Median NTM EV/S



Priced as of 03/31/21

Source: Corporate Reports, FactSet, Piper Sandler

CloudTracker | Valuation Monitor – Median NTM EV/S By Growth Cohort



Priced as of 03/31/21

Source: Corporate Reports, FactSet, Piper Sandler

CloudTracker | Sorted by Market Capitalization 1-35

Name	Ticker	Price 3/31/2021	Mkt-Cap (Millions)	Valuation		Price Performance		Revenue Growth		FCF Margin		Rule of 40	
				2021	2022	MTD	YTD	FQ0	L4Q	FQ0	L4Q	FQ0	L4Q
				EV/S	EV/S	% Chg	% Chg	% y/y	Avg	margin	Avg	margin	Avg
1 Adobe	ADBE	\$475.37	\$231,517	14.9x	13.2x	3.4%	(4.9%)	26.3%	17.1%	43.9%	42.1%	70.2%	59.2%
2 salesforce.com	CRM	\$211.87	\$217,590	7.9x	6.7x	(2.1%)	(4.8%)	19.9%	24.8%	34.8%	19.1%	54.7%	43.9%
3 Shopify	SHOP	\$1,106.50	\$140,811	33.7x	26.1x	(13.6%)	(2.2%)	93.6%	83.5%	24.4%	9.1%	118.0%	92.6%
4 Square	SQ	\$227.05	\$118,883	26.9x	19.8x	(1.3%)	4.3%	140.5%	97.0%	9.0%	11.0%	149.5%	108.0%
5 ServiceNow	NOW	\$500.11	\$103,118	17.4x	14.0x	(6.3%)	(9.1%)	31.4%	30.6%	45.2%	31.2%	76.6%	61.9%
6 Zoom	ZM	\$321.29	\$99,095	24.8x	21.1x	(14.0%)	(4.8%)	368.8%	314.8%	42.8%	56.4%	411.6%	371.3%
7 Snowflake	SNOW	\$229.28	\$81,922	70.2x	43.1x	(11.7%)	(18.5%)	117.2%	126.4%	6.5%	(15.1%)	123.7%	111.2%
8 Workday	WDAY	\$248.43	\$67,107	13.1x	11.2x	1.3%	3.7%	15.9%	19.2%	44.6%	23.2%	60.5%	42.4%
9 Twilio	TWLO	\$340.76	\$63,928	24.9x	19.0x	(13.3%)	0.7%	65.5%	54.9%	0.2%	(1.6%)	65.7%	53.3%
10 Autodesk	ADSK	\$277.15	\$62,121	14.4x	12.0x	0.4%	(9.2%)	15.6%	15.9%	61.0%	34.6%	76.6%	50.5%
11 Atlassian	TEAM	\$210.76	\$54,206	24.6x	20.5x	(11.3%)	(9.9%)	22.7%	27.7%	35.9%	26.3%	58.5%	54.1%
12 CrowdStrike	CRWD	\$182.51	\$43,956	32.5x	24.7x	(15.5%)	(13.8%)	74.2%	82.3%	36.8%	33.7%	110.9%	116.0%
13 Veeva Systems	VEEV	\$261.24	\$42,404	23.1x	19.4x	(6.7%)	(4.0%)	27.4%	33.0%	17.2%	38.4%	44.5%	71.4%
14 DocuSign	DOCU	\$202.45	\$42,211	21.3x	16.6x	(10.7%)	(8.9%)	56.8%	48.6%	10.2%	15.1%	67.0%	63.7%
15 Unity Software	U	\$100.31	\$32,524	31.8x	24.6x	(6.8%)	(34.6%)	39.4%	42.6%	1.6%	(3.5%)	41.0%	39.1%
16 Okta	OKTA	\$220.43	\$31,903	28.6x	22.2x	(15.7%)	(13.3%)	40.3%	42.8%	13.8%	13.2%	54.1%	55.9%
17 RingCentral	RNG	\$297.88	\$28,327	19.4x	15.7x	(21.2%)	(21.4%)	32.3%	31.1%	1.4%	3.4%	33.7%	34.5%
18 Datadog Inc	DDOG	\$83.34	\$28,133	32.6x	24.6x	(12.7%)	(15.3%)	56.2%	68.3%	9.4%	14.0%	65.6%	82.3%
19 Zscaler	ZS	\$171.67	\$25,305	33.7x	25.8x	(16.3%)	(14.0%)	55.1%	48.3%	11.5%	14.5%	66.5%	62.8%
20 Cloudflare	NET	\$70.26	\$23,678	38.8x	29.4x	(5.0%)	(7.5%)	50.0%	50.0%	(18.7%)	(22.0%)	31.4%	28.0%
21 Paycom Software	PAYC	\$370.06	\$23,128	19.9x	16.0x	(1.1%)	(18.2%)	14.2%	13.8%	14.6%	15.1%	28.9%	28.9%
22 HubSpot	HUBS	\$454.21	\$22,665	18.8x	15.1x	(11.8%)	14.6%	35.4%	30.7%	18.2%	8.3%	53.6%	39.0%
23 ZoomInfo Technologies	ZI	\$48.90	\$20,056	31.3x	24.4x	(6.7%)	1.4%	52.5%	64.4%	44.3%	30.9%	96.8%	95.3%
24 Coupa Software	COUP	\$254.48	\$19,910	30.6x	24.6x	(26.5%)	(24.9%)	46.7%	39.1%	23.3%	16.9%	70.0%	56.0%
25 MongoDB	MDB	\$267.43	\$18,653	24.4x	19.2x	(30.7%)	(25.5%)	38.4%	40.3%	(12.1%)	(9.7%)	26.4%	30.6%
26 Wix.com	WIX	\$279.22	\$17,907	13.3x	10.8x	(19.9%)	11.7%	38.1%	29.6%	8.2%	13.5%	46.3%	43.1%
27 Zendesk	ZEN	\$132.62	\$17,048	12.9x	10.3x	(9.3%)	(7.3%)	23.3%	26.3%	13.5%	2.0%	36.8%	28.3%
28 Dynatrace	DT	\$48.24	\$14,022	17.2x	13.9x	(3.1%)	11.5%	27.6%	28.6%	38.9%	28.2%	66.6%	56.8%
29 Bill.com	BILL	\$145.50	\$13,378	51.4x	38.1x	(11.8%)	6.6%	38.3%	37.0%	(32.0%)	(18.0%)	6.3%	19.0%
30 Avalara	AVLR	\$133.43	\$12,073	17.9x	14.6x	(15.0%)	(19.1%)	34.5%	30.8%	19.7%	5.5%	54.2%	36.3%
31 Five9	FIVN	\$156.33	\$11,959	23.0x	19.3x	(15.6%)	(10.4%)	38.6%	32.2%	7.3%	8.3%	45.9%	40.5%
32 Dropbox	DBX	\$26.66	\$11,585	5.0x	4.5x	18.3%	20.1%	13.0%	15.3%	31.4%	25.3%	44.4%	40.6%
33 Elastic	ESTC	\$111.20	\$11,133	15.4x	12.4x	(17.3%)	(23.9%)	38.8%	44.8%	11.6%	2.5%	50.5%	47.3%
34 Paylocity	PCTY	\$179.83	\$10,206	14.5x	11.9x	(5.9%)	(12.7%)	10.5%	12.3%	7.0%	9.0%	17.6%	21.3%
35 RealPage	RP	\$87.20	\$9,948	7.8x	7.0x	0.5%	(0.0%)	16.9%	17.3%	17.8%	18.4%	34.7%	35.8%
Average				24.0x	18.6x	(9.6%)	(7.5%)	51.9%	49.2%	18.4%	14.3%	70.3%	63.4%
Median				23.0x	19.0x	(11.3%)	(8.9%)	38.3%	33.0%	14.6%	14.0%	54.7%	50.5%

Priced as of 03/31/21

Source: Corporate Reports, FactSet, Piper Sandler

CloudTracker | Sorted by Market Capitalization 36-65

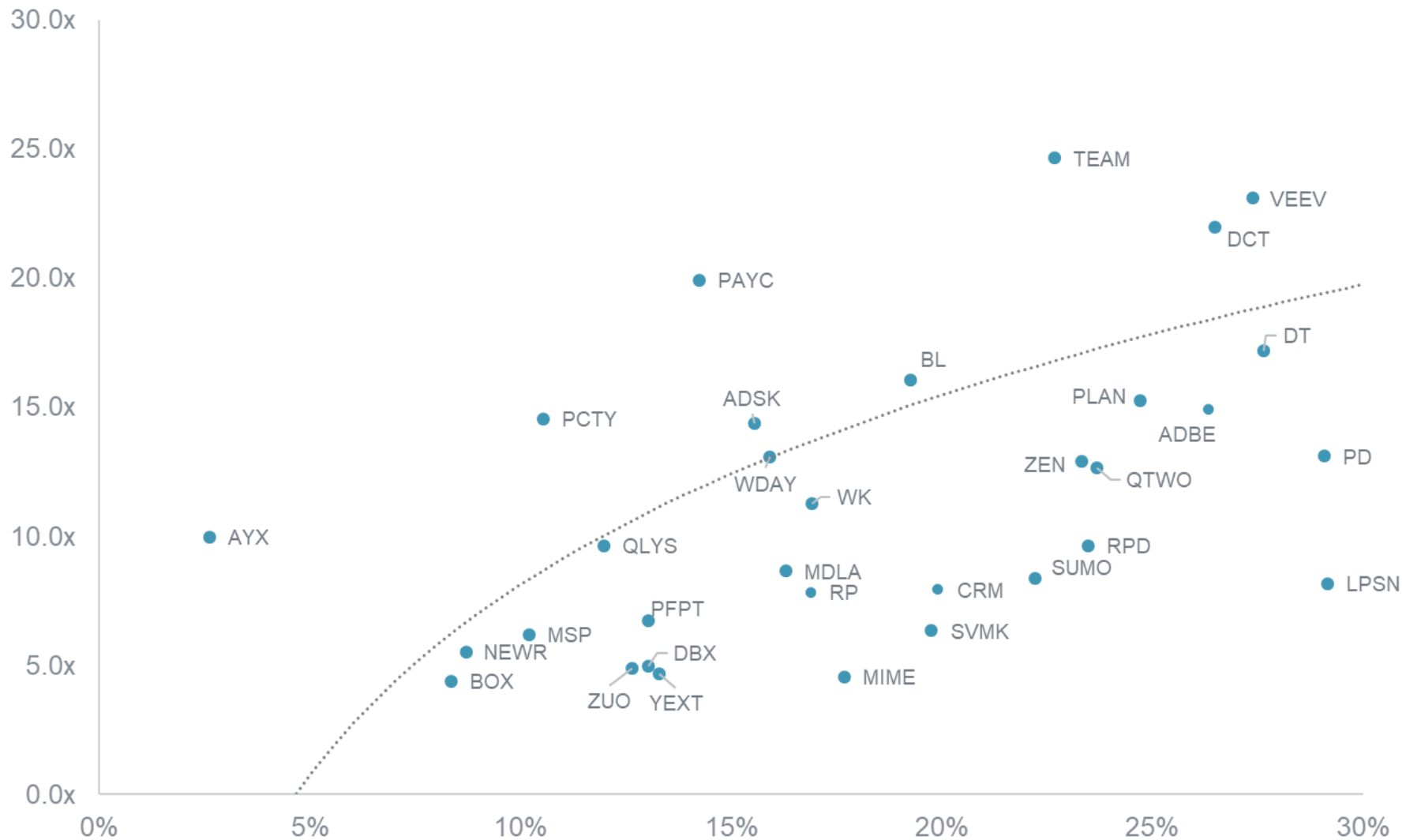
				Valuation		Price Performance		Revenue Growth		FCF Margin		Rule of 40		
		Price	Mkt-Cap	2021	2022	MTD	YTD	FQ0	L4Q	FQ0	L4Q	FQ0	L4Q	
Name	Ticker	3/31/2021	(Millions)	EV/S	EV/S	% Chg	% Chg	% y/y	Avg	margin	Avg	margin	Avg	
36	C3.ai	AI	\$65.91	\$9,216	39.0x	28.8x	(41.4%)	(52.5%)	19.0%	29.2%	(50.7%)	(22.6%)	(31.7%)	6.6%
37	Anaplan	PLAN	\$53.85	\$8,772	15.3x	12.3x	(17.1%)	(25.1%)	24.7%	29.0%	6.1%	(4.9%)	30.8%	24.1%
38	Smartsheet	SMAR	\$63.92	\$8,570	16.2x	12.6x	(7.7%)	(7.8%)	39.9%	42.9%	9.0%	(9.4%)	48.9%	33.4%
39	Fastly	FSLY	\$67.28	\$8,501	21.8x	17.3x	(8.6%)	(23.0%)	40.2%	45.4%	(48.1%)	(18.5%)	(7.9%)	27.0%
40	Proofpoint	PFPT	\$125.79	\$8,227	6.7x	5.7x	4.0%	(7.8%)	13.0%	18.5%	10.5%	18.5%	23.5%	37.0%
41	BlackLine	BL	\$108.40	\$6,774	16.1x	13.2x	(12.6%)	(18.7%)	19.3%	22.1%	8.3%	9.7%	27.5%	31.8%
42	nCino	NCNO	\$66.72	\$6,683	25.6x	21.7x	(2.4%)	(7.9%)	47.0%	47.9%	(22.1%)	4.4%	24.9%	52.3%
43	Q2	QTWO	\$100.20	\$6,198	12.7x	10.6x	(17.8%)	(20.8%)	23.7%	28.5%	10.6%	(7.5%)	34.3%	21.0%
44	Duck Creek Technologies	DCT	\$45.14	\$6,064	22.0x	18.8x	(4.6%)	4.2%	26.5%	24.7%	(38.9%)	3.4%	(12.4%)	28.1%
45	Lemonade	LMND	\$93.13	\$6,063	44.3x	27.2x	(26.0%)	(24.0%)	92.3%	115.3%	(107.3%)	(112.1%)	(15.0%)	3.2%
46	Asana	ASAN	\$28.58	\$5,973	19.0x	14.6x	(17.5%)	(3.3%)	57.3%	59.9%	(25.6%)	(34.1%)	31.7%	25.8%
47	Alteryx	AYX	\$82.96	\$5,910	10.0x	8.2x	(13.2%)	(31.9%)	2.6%	22.1%	28.9%	6.9%	31.5%	29.0%
48	Medallia	MDLA	\$27.89	\$5,109	8.7x	7.3x	(30.9%)	(16.0%)	16.3%	18.7%	5.4%	(4.0%)	21.7%	14.7%
49	Everbridge	EVBG	\$121.18	\$5,043	15.4x	12.8x	(20.9%)	(18.7%)	32.4%	35.2%	21.0%	0.3%	53.4%	35.5%
50	Workiva	WK	\$88.26	\$4,847	11.3x	9.8x	(12.7%)	(3.7%)	16.9%	18.1%	14.1%	8.7%	31.0%	26.8%
51	BigCommerce	BIGC	\$57.80	\$4,716	23.6x	19.1x	(2.2%)	(9.9%)	39.1%	35.7%	(9.1%)	(19.5%)	30.0%	16.2%
52	Rapid7 Inc.	RPD	\$74.61	\$4,688	9.6x	8.1x	(2.1%)	(17.2%)	23.5%	26.0%	(6.9%)	(2.9%)	16.6%	23.1%
53	Jamf	JAMF	\$35.32	\$4,404	12.6x	10.4x	(5.6%)	18.0%	34.0%	32.2%	22.5%	17.0%	56.5%	49.2%
54	Qualys	QLYS	\$104.78	\$4,320	9.6x	8.5x	7.8%	(14.0%)	12.0%	12.9%	33.2%	41.4%	45.2%	54.3%
55	New Relic	NEWR	\$61.48	\$4,160	5.5x	5.0x	0.6%	(6.0%)	8.7%	14.7%	(7.7%)	10.5%	1.0%	25.1%
56	Box	BOX	\$22.96	\$4,080	4.4x	3.9x	25.1%	27.2%	8.3%	10.8%	20.6%	15.6%	28.9%	26.4%
57	LivePerson	LPSN	\$52.74	\$3,870	8.2x	6.6x	(19.6%)	(15.2%)	29.2%	25.5%	(12.5%)	(2.3%)	16.6%	23.1%
58	PagerDuty	PD	\$40.23	\$3,853	13.1x	10.6x	(10.1%)	(3.5%)	29.1%	28.5%	3.9%	2.3%	32.9%	30.8%
59	Datto	MSP	\$22.91	\$3,824	6.2x	5.4x	(1.6%)	(15.1%)	10.2%	13.3%	16.3%	14.6%	26.5%	27.9%
60	Sprout Social	SPT	\$57.76	\$3,209	17.7x	14.1x	(15.0%)	27.2%	32.7%	29.4%	(5.4%)	(11.8%)	27.3%	17.6%
61	SurveyMonkey	SVMK	\$18.32	\$2,799	6.3x	5.3x	(1.6%)	(28.3%)	19.7%	22.4%	9.4%	12.1%	29.2%	34.5%
62	Mimecast	MIME	\$40.21	\$2,732	4.6x	3.9x	(6.2%)	(29.3%)	17.7%	19.1%	18.7%	15.7%	36.3%	34.8%
63	Sumo Logic	SUMO	\$18.86	\$2,361	8.4x	6.9x	(37.9%)	(34.0%)	22.2%	31.6%	(3.3%)	(24.8%)	18.9%	6.8%
64	Yext	YEXT	\$14.48	\$2,005	4.7x	4.0x	(14.4%)	(7.9%)	13.3%	18.9%	(27.2%)	(29.0%)	(13.9%)	(10.0%)
65	Zuora	ZUO	\$14.80	\$1,967	4.9x	4.1x	(0.9%)	6.2%	12.6%	10.7%	2.6%	(0.3%)	15.2%	10.4%
Average				14.1x	11.2x	(10.4%)	(12.0%)	26.1%	29.6%	(4.1%)	(4.1%)	22.0%	25.6%	
Median				11.9x	10.1x	(9.3%)	(14.6%)	22.8%	25.7%	4.6%	0.0%	27.4%	26.6%	

Priced as of 03/31/21

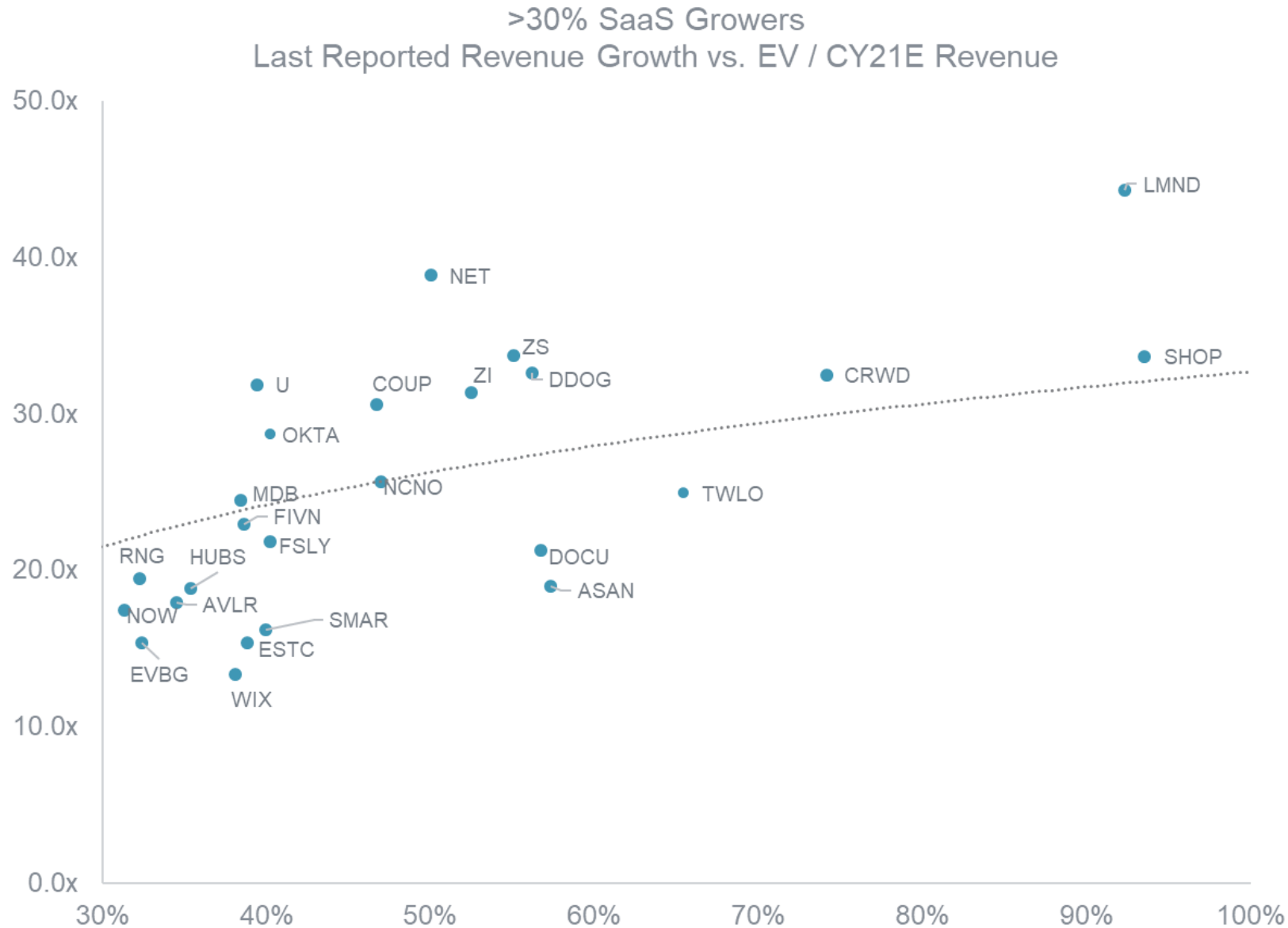
Source: Corporate Reports, FactSet, Piper Sandler

CloudTracker | CY21 EV/S Scatterplot to <30% Growers

<30% SaaS Growers
Last Reported Revenue Growth vs. EV / CY21E Revenue



CloudTracker | CY21 EV/S Scatterplot to >30% Growers



CloudTracker | Metric Monitor – Rank By Growth Tier

Cloud Software Ranking By Growth | Last Q

Tier 1 >40% Growth			
Ticker	Last Q % y/y	2021 EV/S	2022 EV/S
ZM	369%	24.8x	21.1x
SQ	141%	26.9x	19.8x
SNOW	117%	70.2x	43.1x
SHOP	94%	33.7x	26.1x
LMND	92%	44.3x	27.2x
CRWD	74%	32.5x	24.7x
TWLO	65%	24.9x	19.0x
ASAN	57%	19.0x	14.6x
DOCU	57%	21.3x	16.6x
DDOG	56%	32.6x	24.6x
ZS	55%	33.7x	25.8x
ZI	53%	31.3x	24.4x
NET	50%	38.8x	29.4x
NCNO	47%	25.6x	21.7x
COUP	47%	30.6x	24.6x
OKTA	40%	28.6x	22.2x
FSLY	40%	21.8x	17.3x
Average	86%	31.8x	23.7x
Median	57%	30.6x	24.4x
High	369%	70.2x	43.1x
Low	40%	19.0x	14.6x

Tier 2 30-40% Growth			
Ticker	Last Q % y/y	2021 EV/S	2022 EV/S
SMAR	40%	16.2x	12.6x
U	39%	31.8x	24.6x
BIGC	39%	23.6x	19.1x
ESTC	39%	15.4x	12.4x
FIVN	39%	23.0x	19.3x
MDB	38%	24.4x	19.2x
BILL	38%	51.4x	38.1x
WIX	38%	13.3x	10.8x
HUBS	35%	18.8x	15.1x
AVLR	35%	17.9x	14.6x
JAMF	34%	12.6x	10.4x
SPT	33%	17.7x	14.1x
EVBG	32%	15.4x	12.8x
RNG	32%	19.4x	15.7x
NOW	31%	17.4x	14.0x
Average	36%	21.2x	16.8x
Median	38%	17.9x	14.6x
High	40%	51.4x	38.1x
Low	31%	12.6x	10.4x

Tier 3 20-30% Growth			
Ticker	Last Q % y/y	2021 EV/S	2022 EV/S
LPSN	29%	8.2x	6.6x
PD	29%	13.1x	10.6x
DT	28%	17.2x	13.9x
VEEV	27%	23.1x	19.4x
DCT	26%	22.0x	18.8x
ADBE	26%	14.9x	13.2x
PLAN	25%	15.3x	12.3x
QWTO	24%	12.7x	10.6x
RPD	23%	9.6x	8.1x
ZEN	23%	12.9x	10.3x
TEAM	23%	24.6x	20.5x
SUMO	22%	8.4x	6.9x
Average	26%	15.2x	12.6x
Median	26%	14.0x	11.5x
High	29%	24.6x	20.5x
Low	22%	8.2x	6.6x

Tier 4 Sub-20% Growth			
Ticker	Last Q % y/y	2021 EV/S	2022 EV/S
CRM	20%	7.9x	6.7x
SVMK	20%	6.3x	5.3x
BL	19%	16.1x	13.2x
AI	19%	39.0x	28.8x
MIME	18%	4.6x	3.9x
WK	17%	11.3x	9.8x
RP	17%	7.8x	7.0x
MDLA	16%	8.7x	7.3x
WDAY	16%	13.1x	11.2x
ADSK	16%	14.4x	12.0x
PAYC	14%	19.9x	16.0x
YEXT	13%	4.7x	4.0x
DBX	13%	5.0x	4.5x
PFPT	13%	6.7x	5.7x
ZUO	13%	4.9x	4.1x
QLYS	12%	9.6x	8.5x
PCTY	11%	14.5x	11.9x
MSP	10%	6.2x	5.4x
NEWR	9%	5.5x	5.0x
BOX	8%	4.4x	3.9x
AYX	3%	10.0x	8.2x
Average	14%	10.5x	8.7x
Median	14%	7.9x	7.0x
High	20%	39.0x	28.8x
Low	3%	4.4x	3.9x

By Growth

Tier 1 | Average 23.7x

By Growth

Tier 2 | Average 16.8x

By Growth

Tier 3 | Average 12.6x

By Growth

Tier 4 | Average 8.7x

High growth (>40%) continues to command premium valuation multiples

CloudTracker | Metric Monitor – Rank By Rule of 40

Cloud Software Ranking By Rule of 40 | TTM FCF margin + TTM growth

Tier 1 >40% FCF margin + growth					
Ticker	L4Q % y/y	L4Q FCF Margin	L4Q R40	2021 EV/S	2022 EV/S
ZM	315%	56%	371%	24.8x	21.1x
CRWD	82%	34%	116%	32.5x	24.7x
SNOW	126%	-15%	111%	70.2x	43.1x
SQ	97%	11%	108%	26.9x	19.8x
ZI	64%	31%	95%	31.3x	24.4x
SHOP	84%	9%	93%	33.7x	26.1x
DDOG	68%	14%	82%	32.6x	24.6x
VEEV	33%	38%	71%	23.1x	19.4x
DOCU	49%	15%	64%	21.3x	16.6x
ZS	48%	14%	63%	33.7x	25.8x
NOW	31%	31%	62%	17.4x	14.0x
ADBE	17%	42%	59%	14.9x	13.2x
DT	29%	28%	57%	17.2x	13.9x
COUP	39%	17%	56%	30.6x	24.6x
OKTA	43%	13%	56%	28.6x	22.2x
QLYS	13%	41%	54%	9.6x	8.5x
TEAM	28%	26%	54%	24.6x	20.5x
TWLO	55%	-2%	53%	24.9x	19.0x
NCNO	48%	4%	52%	25.6x	21.7x
ADSK	16%	35%	51%	14.4x	12.0x
JAMF	32%	17%	49%	12.6x	10.4x
ESTC	45%	3%	47%	15.4x	12.4x
CRM	25%	19%	44%	7.9x	6.7x
WIX	30%	14%	43%	13.3x	10.8x
WDAY	19%	23%	42%	13.1x	11.2x
DBX	15%	25%	41%	5.0x	4.5x
FIVN	32%	8%	41%	23.0x	19.3x
Average	55%	20%	75%	23.3x	18.2x
Median	39%	17%	56%	23.1x	19.3x
High	315%	56%	371%	70.2x	43.1x
Low	13%	(15%)	41%	5.0x	4.5x

By Rule of 40

Tier 1 | Average 75% 18.2x

Tier 2 <40% FCF margin + growth					
Ticker	L4Q % y/y	L4Q FCF Margin	L4Q R40	2021 EV/S	2022 EV/S
U	43%	-4%	39%	31.8x	24.6x
HUBS	31%	8%	39%	18.8x	15.1x
PFPT	18%	18%	37%	6.7x	5.7x
AVLR	31%	6%	36%	17.9x	14.6x
RP	17%	18%	36%	7.8x	7.0x
EVBG	35%	0%	35%	15.4x	12.8x
MIME	19%	16%	35%	4.6x	3.9x
SVMK	22%	12%	35%	6.3x	5.3x
RNG	31%	3%	34%	19.4x	15.7x
SMAR	43%	-9%	33%	16.2x	12.6x
BL	22%	10%	32%	16.1x	13.2x
PD	28%	2%	31%	13.1x	10.6x
MDB	40%	-10%	31%	24.4x	19.2x
AYX	22%	7%	29%	10.0x	8.2x
PAYC	14%	15%	29%	19.9x	16.0x
ZEN	26%	2%	28%	12.9x	10.3x
DCT	25%	3%	28%	22.0x	18.8x
NET	50%	-22%	28%	38.8x	29.4x
MSP	13%	15%	28%	6.2x	5.4x
FSLY	45%	-18%	27%	21.8x	17.3x
WK	18%	9%	27%	11.3x	9.8x
BOX	11%	16%	26%	4.4x	3.9x
ASAN	60%	-34%	26%	19.0x	14.6x
NEWRR	15%	10%	25%	5.5x	5.0x
PLAN	29%	-5%	24%	15.3x	12.3x
LPSN	25%	-2%	23%	8.2x	6.6x
RPD	26%	-3%	23%	9.6x	8.1x
PCTY	12%	9%	21%	14.5x	11.9x
QTWO	29%	-8%	21%	12.7x	10.6x
BILL	37%	-18%	19%	51.4x	38.1x
SPT	29%	-12%	18%	17.7x	14.1x
BIGC	36%	-19%	16%	23.6x	19.1x
MDLA	19%	-4%	15%	8.7x	7.3x
ZUO	11%	0%	10%	4.9x	4.1x
SUMO	32%	-25%	7%	8.4x	6.9x
AI	29%	-23%	7%	39.0x	28.8x
LMND	115%	-112%	3%	44.3x	27.2x
YEEX	19%	-29%	(10%)	4.7x	4.0x
Average	30%	(5%)	25%	16.7x	13.1x
Median	27%	0%	27%	14.9x	12.1x
High	115%	18%	39%	51.4x	38.1x
Low	11%	(112%)	(10%)	4.4x	3.9x

By Rule of 40

Tier 2 | Average 25% 13.1x

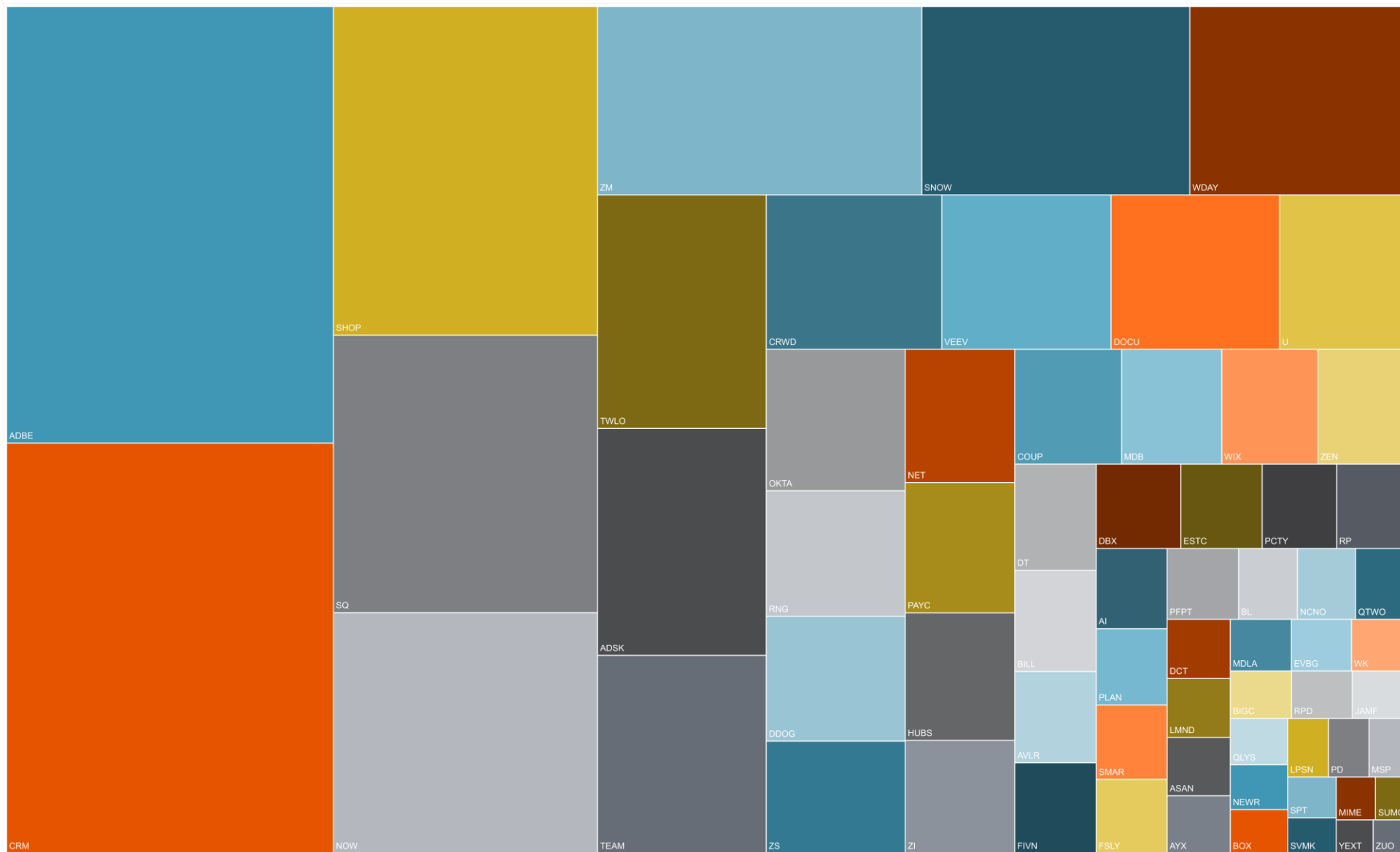
27

of the 65 largest cloud software firms adhere to the Rule of 40 proxy

Section 3

2021 State of Cloud

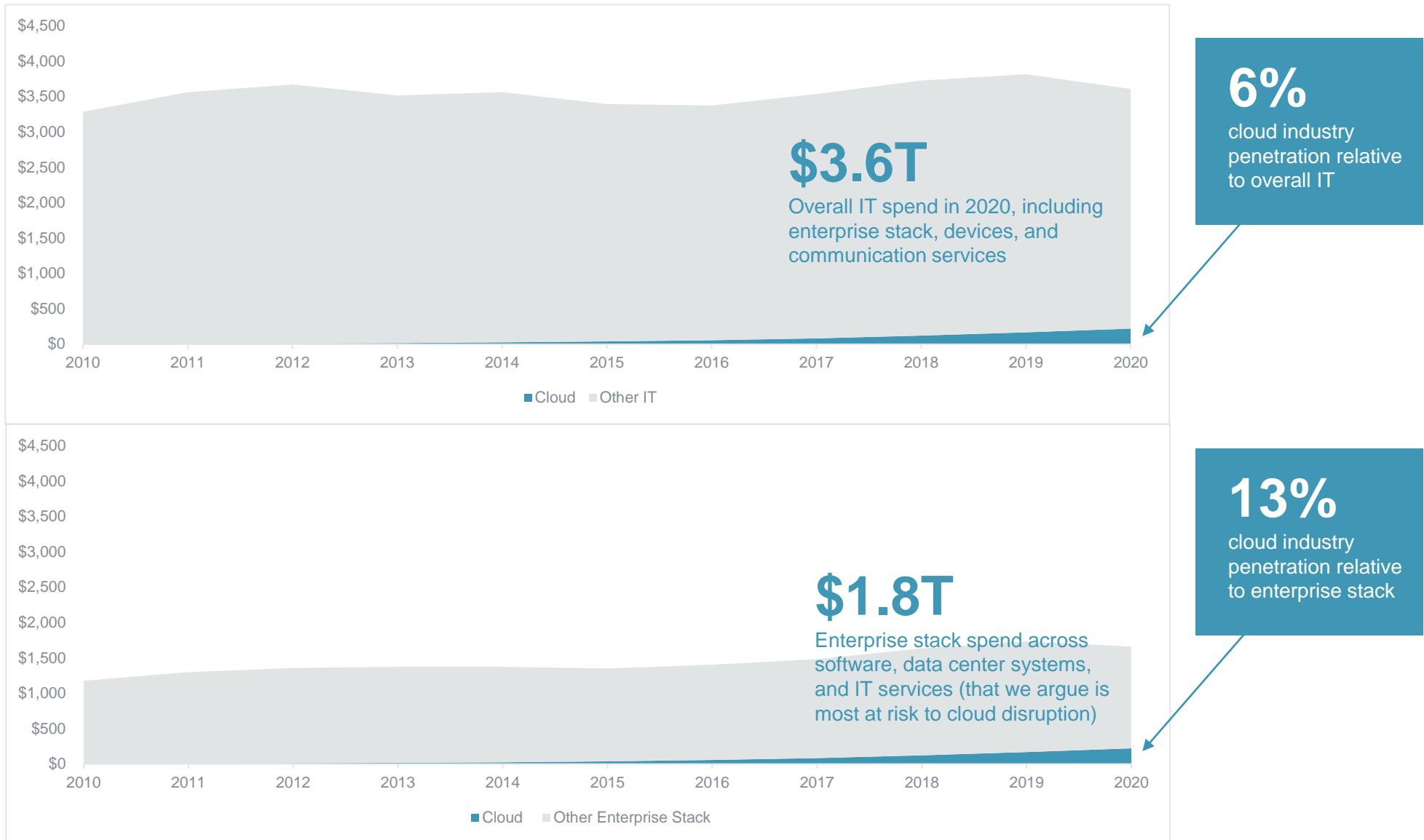
Cloud Valuation Monitor – Visual of \$1.9T By Market Cap



Priced as of 03/31/21

Source: Corporate Reports, FactSet, Piper Sandler

It has taken a decade to reach 13% penetration (it's still early!)



Few sectors are this large at \$220B growing this fast at 30% y/y

Name	2015	2016	2017	2018	2019	2020
CloudTracker (n=70)						
Microsoft	\$7,418	\$12,166	\$20,200	\$32,200	\$44,700	\$59,435
Amazon AWS	\$7,800	\$12,219	\$17,459	\$25,655	\$35,026	\$45,668
salesforce.com	\$6,667	\$8,437	\$10,540	\$13,282	\$17,098	\$21,115
Alphabet	\$1,405	\$1,902	\$3,471	\$5,574	\$8,918	\$13,018
Adobe .	\$4,585	\$5,854	\$7,301	\$9,030	\$11,171	\$12,868
SAP	\$2,286	\$2,993	\$3,769	\$5,027	\$7,013	\$8,067
Oracle	\$2,009	\$3,375	\$4,600	\$5,474	\$6,274	\$7,001
ServiceNow	\$1,005	\$1,391	\$1,918	\$2,609	\$3,460	\$4,487
Workday	\$1,157	\$1,574	\$2,143	\$2,822	\$3,627	\$4,301
Shopify	\$205	\$389	\$673	\$1,073	\$1,578	\$2,857
60 Other Cloud Software	\$5,747	\$9,149	\$14,240	\$21,886	\$30,366	\$41,243
Cloud Industry (M)	\$40,286	\$59,449	\$86,315	\$124,633	\$169,232	\$220,059
% y/y growth	64%	48%	45%	44%	36%	30%

% Y/Y Growth

Microsoft	64%	64%	66%	59%	39%	33%
Amazon AWS	138%	57%	43%	47%	37%	30%
salesforce.com	24%	27%	25%	26%	29%	23%
Alphabet	36%	35%	82%	61%	60%	46%
Adobe .	42%	28%	25%	24%	24%	15%
SAP	110%	31%	26%	33%	40%	15%
Oracle	35%	68%	36%	19%	15%	12%
ServiceNow	47%	38%	38%	36%	33%	30%
Workday	47%	36%	36%	32%	29%	19%
Shopify	95%	90%	73%	59%	47%	81%
60 Other Cloud Software	90%	59%	56%	54%	39%	36%
Cloud Industry (M)	64%	48%	45%	44%	36%	30%

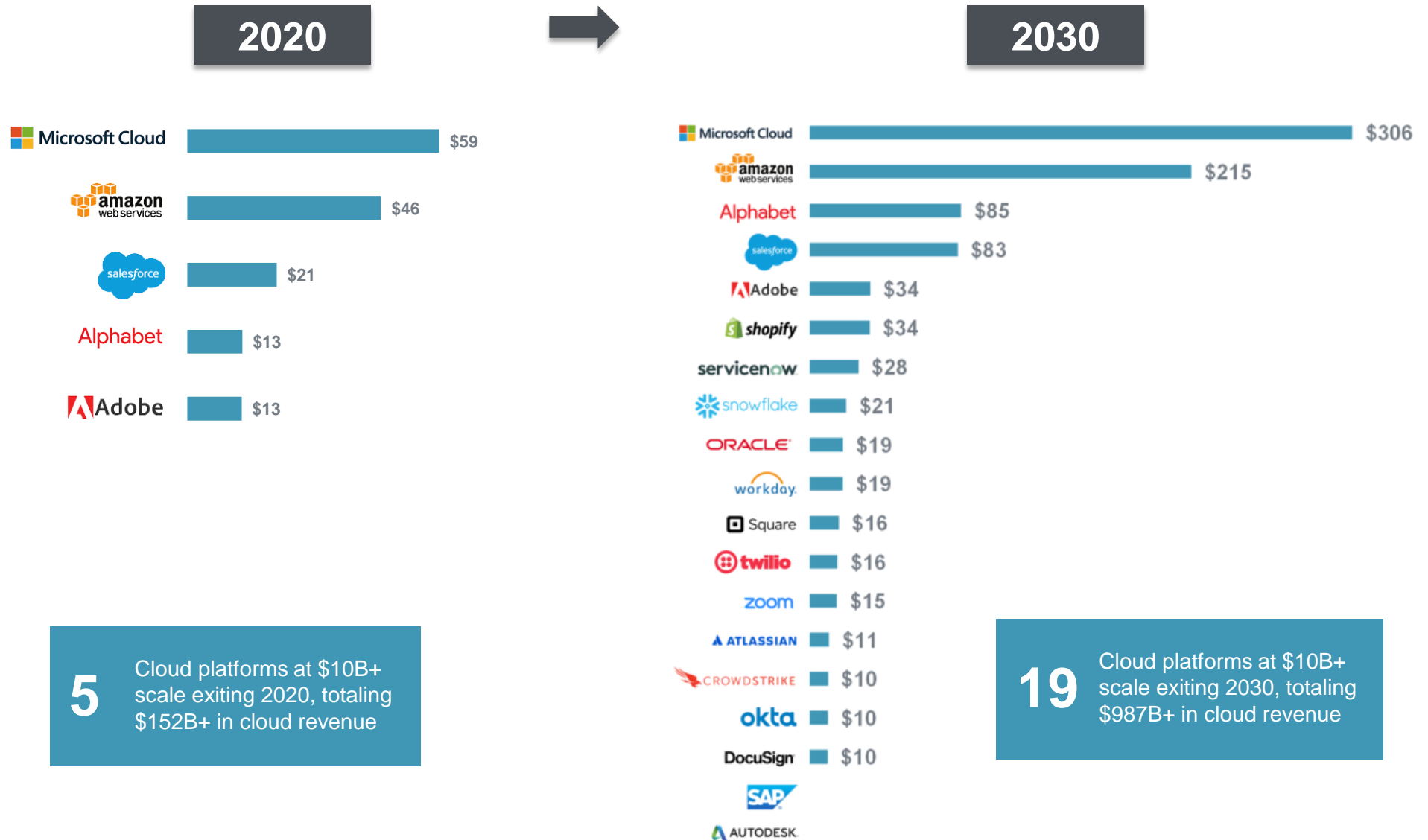
\$220B

cloud-related industry revenue in 2020 across the 70 largest pure-plays and divisional segments.

30%

cloud industry revenue growth during 2020 vs. 36% in 2019.

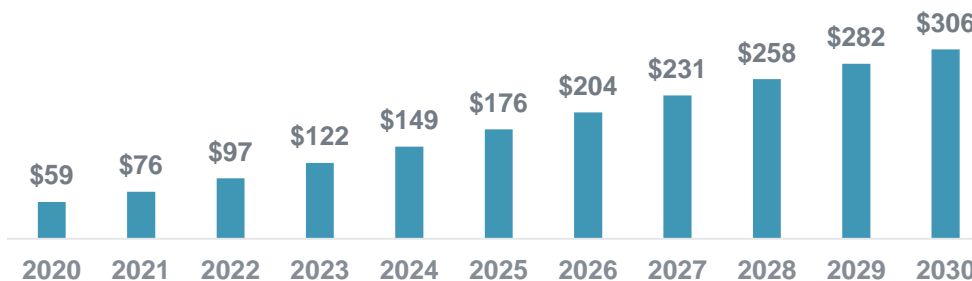
Number of \$10B+ revenue scale models could quadruple to 19



Don't underestimate MSFT, AMZN, GOOGL platforms (Amara's Law)

There's still room to run for the big 3 cloud titans. While many SaaS pure-plays are poised to capitalize on the shift to cloud, we view Microsoft, Amazon, and Google as uniquely positioned given their sizable cloud infrastructure platforms, significant competitive moats, and revenue models that can sustain growth at scale.

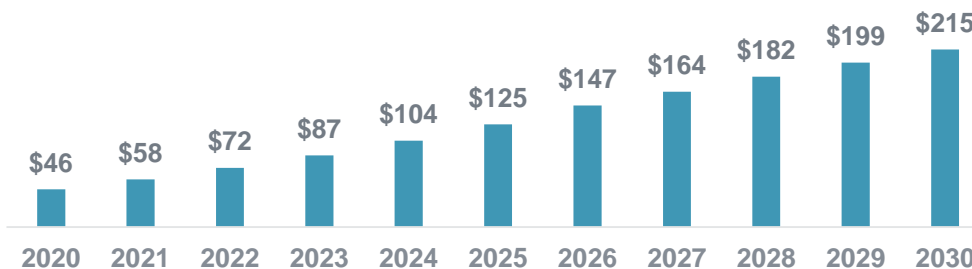
Microsoft Cloud



\$305B+

Cloud revenue exiting 2030, representing a 10-year CAGR of 18%

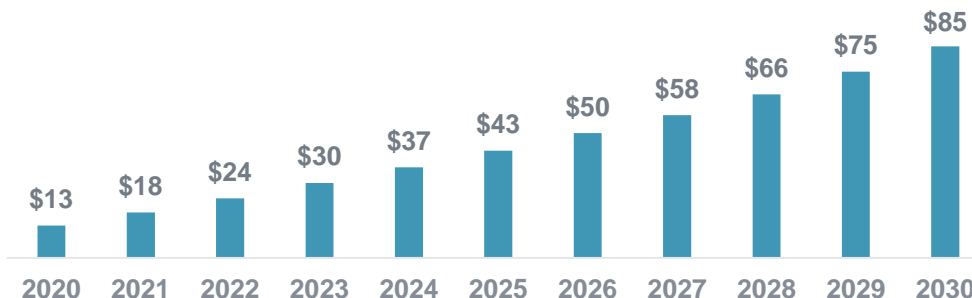
amazon web services



\$215B+

Cloud revenue exiting 2030, representing a 10-year CAGR of 17%

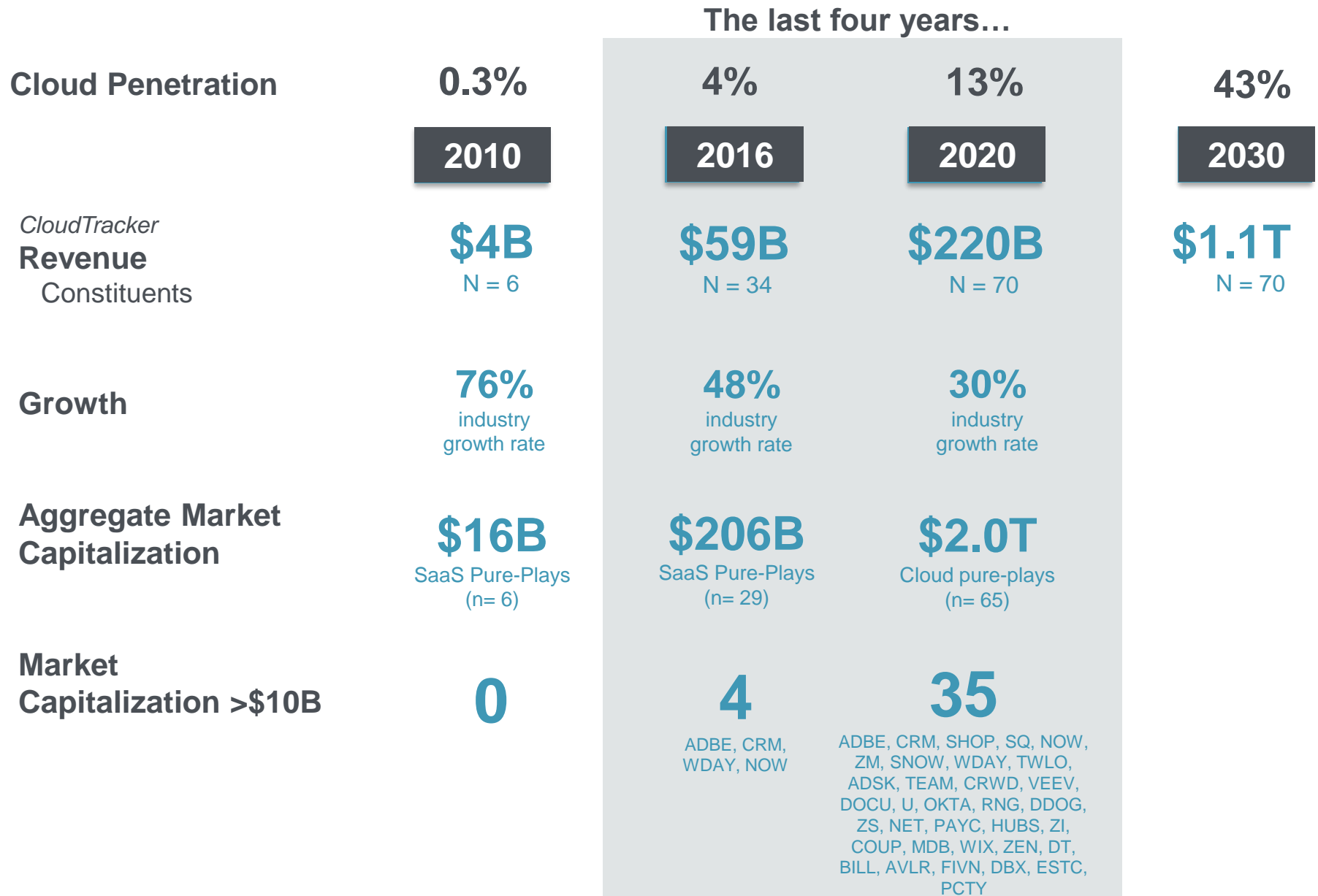
Alphabet



\$85B+

Cloud revenue exiting 2030, representing a 10-year CAGR of 21%

Why is cloud software increasingly relevant for growth investors?



IMPORTANT RESEARCH DISCLOSURES

Notes: The boxes on the Rating and Price Target History chart above indicate the date of the fundamental Equity Research Note, the rating and the price target. Each box represents a date on which an analyst made a change to a rating or price target, except for the first box, which may only represent the first Note written during the past three years.

Legend:

I: Initiating Coverage

R: Resuming Coverage

T: Transferring Coverage

D: Discontinuing Coverage

S: Suspending Coverage

OW: Overweight

N: Neutral

UW: Underweight

NA: Not Available

UR: Under Review

Distribution of Ratings/IB Services Piper Sandler				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OW]	594	63.26	227	38.22
HOLD [N]	337	35.89	58	17.21
SELL [UW]	8	0.85	0	0.00

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Overweight (OW): Anticipated to outperform relative to the median of the group of stocks covered by the analyst.

Neutral (N): Anticipated to perform in line relative to the median of the group of stocks covered by the analyst.

Underweight (UW): Anticipated to underperform relative to the median of the group of stocks covered by the analyst.

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