

TMT: [Internet](#)
**Youssef Squali**

212-303-4180  
Youssef.Squali@truist.com

**Naved Khan**

212-590-0994  
Naved.Khan@truist.com

**Robert Zeller**

212-319-3917  
Robert.Zeller@truist.com

**Nicholas Cronin**

212-326-6149  
Nicholas.Cronin@truist.com

**Vincent Sengelmann**

212-326-4891  
Vincent.Sengelmann@truist.com

Stock Rating

**BUY**

Unchanged

Price Target

**\$100.00**

Unchanged

TR to Target	57.1%
Price (Oct. 4, 2022)	\$63.66
52-Wk Range	\$111.64-\$41.21
Market Cap (\$M)	\$30,939
ADTV	4,201,888
Shares Out (M)	486
Short Interest Ratio/% Of Float	3.9%
Enterprise Value (\$M)	\$29,726
Cash & Equivalents (\$M)	\$1,213
Total Debt (\$M)	\$0

11 Page Document

**Reasons for this report**

- ✓ Updating Estimates
- ✓ Investor Day Takeaways

## The Trade Desk, Inc. (TTD)

### AD Highlights Consistency of Vision/Strategy + CTV/Shopper Mktg as Key Growth Drivers; Buy/\$100 PT

At a well attended event yesterday, TTD hosted its third Analyst Day as a public company, displaying a deep bench of executives and highlighting its strong differentiated DSP positioning, product innovation and strategy, which has enabled it to consistently outstrip Street expectations/gain market share, and should help it sustain a strong performance over the next several years driven by CTV and Shopper Mktg. What struck us most at the event is the consistency of the message, the mission and the opportunity vs. what we heard in 2017 and again in 2019. We remain fans of TTD with a Buy/\$100 PT

*The Trade Desk hosted its 3rd Analyst Day with presentations from Founder and CEO Jeff Green, Founder and CTO Dave Pickles, CFO Blake Grayson, and other members of the senior leadership. The sessions included a Solimar demo, update on the company's vision and strategy and presentations on CTV, Shopper Marketing, Solimar, and UID2 to support the open internet. Overall, we walked away incrementally bullish on the company's strategy to win, on the growth prospects from the secular tailwind of CTV (\$16B TAM today) and of Shopper Marketing (which is brand new for TTD, and could unlock an incremental \$100B TAM), all against a backdrop of TTD being the largest, objective DSP in the open internet. Of note, CEO Jeff Green highlighted that whereas Search and Social have historically dominated the online ad ecosystem and have been advertisers' #1 priority, CTV is now becoming marketers' first dollar spent given the significant adoption of streaming content and the "always logged-in" user base. Additionally, whereas Social tries to combat privacy and targeting changes, CTV and Shopper Marketing are seeing fewer of those headwinds, giving TTD a competitive advantage with advertisers. We recognize that the company is not immune to the weakening global economy, geo-political events, and Apple's (AAPL, NR) ATT, but TTD remains one of our favorite SMID stock picks.*

**Brief preview of 3Q22 results.** While TTD did not update its 3Q22 outlook of "at least \$385M in revenue", mgmt. reiterated that the company should deliver strong relative results and continue to capture market share even in an economic downturn. CFO Blake Grayson reiterated the company's 40% LT EBITDA margin target that was presented at TTD's investor day in 2019 (which we find overly conservative since we note that FY21 Adj. EBITDA margin was already at 42%), and noted that this could be higher but the company continues to favor profitable growth and plans to attack the several growth vectors ahead of it. For 3Q22, we estimate that TTD will show +28% top-line growth (to \$386M), a deceleration from 43% in 1Q and 35% in 2Q22 but strong nonetheless considering TTD is lapping a moderately tough comp period of +39% y/y in 3Q21. We expect EBITDA margin to come in at 36%, down from 41% a year ago and vs. 37% in 2Q as TTD also laps suppressed OpEx levels following the onset of the pandemic in 2020. However, comps should see tailwinds in 2H22 from midterm elections and increased political spend, which mgmt. expects should represent low single-digit share as a % of revenues, and is baked into guidance. We are slightly tweaking FY23 estimates, reflecting the impact of FX headwinds as TTD generates ~10% of revenues outside of the U.S. (see tables on pages 2, 3), and we note our WACC in our DCF moves to 10% (from 9%) reflecting the higher rate environment (our PT remains unchanged at \$100).

Revenue (\$M)	2021E	2022E			2023E		
FYE Dec		New	Old	Cons	New	Old	Cons
Q1	\$219	\$315	--	--	--	--	--
Q2	\$280	\$377	--	--	--	--	--
Q3	\$301	\$386	--	--	--	--	--
Q4	\$396	\$499	--	--	--	--	--
Year	\$1,197	\$1,577	--	\$1,590	\$1,990	\$2,000	\$1,977
EV/Sales	24.8x	18.8x			14.9x		

**CTV displacing linear TV; #1 growth driver for next several years.** We expect CTV spending to continue to outpace overall revenue growth in 3Q, accounting for TTD's fastest growing channel. At its AD, TTD quantified the opportunity in connected-TV as a ~\$16B TAM in 2022 (of which we estimate TTD has low-to-mid teens %), which is still a fraction of the linear TV market of \$250B, highlighting the material growth opportunity ahead. Notably, CEO Jeff Green believes that 1Q23 will mark an inflection point in CTV as a huge amount of inventory should come to market from Netflix (NFLX, Hold, Thornton), Disney (DIS, Buy, Thornton), and HBO+ (owned by Warner Bros Discover, WDB, NR) as they introduce their AVOD streaming services. These services should increase CTV content consumption, increase ad inventory, and drive greater marketing dollars to CTV away from linear TV as a result. We see this coming as well given 1) users are consuming more content via CTV at the expense of linear TV even around content like sports, which historically was the backbone of linear TV, and 2) CTV is relatively more insulated from privacy changes with advertisers leveraging users logged in via email addresses and/or usernames rather than relying on cookies, making it more compelling to marketers. International is another driver of growth for CTV given how under-penetrated it is in the ROW relative to the U.S, especially considering that int'l accounts for roughly 2/3 of the global advertising TAM.

**Shopper Marketing, still emerging but likely #2 growth driver for TTD.** While still in the very early innings, we believe the Shopper Marketing opportunity presents a significant runway for growth as it broadens TTD's TAM. Mgmt estimates that with Shopper Marketing, a \$500B TAM, Retail Media/Promotions TAM, which TTD is pursuing is \$100B+ (GroupM estimate). At AD, mgmt. reiterated its expectations for this emerging segment to be the second largest growth driver for the business behind CTV over the next 5 years. As a reminder in 2Q, TTD had its second full quarter with its first Retail Media partners Walmart (WMT, Hold, Ciccarelli), and saw it deliver its strongest quarter yet, delivering "significant" Q/Q growth. Other partners who followed on the heels of Walmart include Drizly (UBER, Buy, Squalli), Target (TGT, Hold, Ciccarelli), and Walgreens (WBA, Hold, MacDonald) earlier this year, and more recently Albertsons (ACI, NR). These partnerships are starting to show green shoots with BIC, a large French advertiser who activated Walmart's DSP seeing ~6x increase in ROAS for men's and women's razors (per TTD).

**100% Solimar adoption within one year shows a compelling value proposition.** We walked away incrementally positive on Solimar given the advances in features and functionality it offers relative to NextWave, the last upgrade from 2018. Solimar is The Trade Desk's biggest platform update in history, and was launched just over a year ago. It reached 100% adoption among TTD's customers in 2Q and has shown to improve advertisers' efficiency in buying programmatic inventory through the company. We believe the Solimar upgrade presents a myriad of advantages for advertisers, including 1) more detailed campaign goal-setting, which should make it easier for the company to win performance-based budgets over time; 2) Solimar also enables more efficient onboarding and activation of 1P data; and 3) more efficient comparison and measurement among various channels, so advertisers and agencies can not only compare two similar channels, like Pandora (private) to Spotify (SPOT, Thornton, Buy) in efficacy and cost, but also Spotify to CBS (Paramount Global, PARA, NR), NBC (Comcast, CMCSA, G. Miller, Hold), or Disney/Hulu (DIS, Thornton, Buy).

**UID2 gaining greater adoption and helping make the open internet work better in a post cookies world.** The Trade Desk's initiative around UID2 is helping advertisers unlock customer data and better target audiences in the wake of IDFA and cookie deprecation, all the while doing so in a privacy safe way. The company highlighted at AD that 500+ companies have now partnered and signed on to integrate and adopt UID2, which works across all channels for markets and is interoperable with their various other ad campaigns. UID2 also provides effective comparison and measurability capabilities for performance measuring, and gives advertisers more control over the directional spend of their ad dollars (as opposed to a walled-garden ecosystem where advertisers have relatively less control). Made In Cookware (private), a DTC kitchen brand that manufactures cookware, partnered with its agency, Tatari, to incorporate UID2 as its identity solution, and saw a 22% increase in conversion, 20% improvement in CPA, and 33% faster conversion rate; additionally, FUBO TV incorporated UID2 and saw 62% y/y increase in ad spend, 25% increase in ad impressions, and 14% improvement in advertiser ROAS on its platform. We believe that UID2 presents a win-win-win scenario for consumers, publishers, and advertisers in an ad world without cookies, and has the potential to be a new common currency for open internet advertising, as it solves the identity problem when cookies go away.

**Positioned for success LT.** We are bullish on the long-term trajectory of TTD's business and believe it is riding the wave of many secular trends in the digital ad ecosystem, especially CTV and including others, such as Shopper Marketing, audio and programmatic. Further, TTD stands to benefit from being an independent, pure play DSP that's free of the conflicts of many of its competitors and in a position to continue investing in longer-term initiatives. TTD has positioned itself to benefit from an ad ecosystem more focused on data-driven spending, measurement, and attribution.

#### Our 3Q22 estimates vs. consensus

KPI	3Q22		
	Truist Securities	Consensus	Guidance
Revenues (\$M)	386	386	≥\$385M
Y/Y Growth	28%	28%	~28%
Operating Income	(8)	8	
Margin (%)	-2%	2%	
Adj. EBITDA	140	141	\$140M
Margin (%)	36%	36%	36%
GAAP EPS	(\$0.01)	\$0.00	

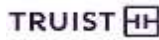
Source: FactSet, Truist Securities Estimates

### Our FY22 and FY23 estimates vs. consensus

KPI	FY22		FY23		
	Truist Securities	Consensus	New Ests	Old Ests	Consensus
<b>Revenues (\$M)</b>	1,577	1,590	1,990	2,000	1,977
Y/Y Growth	32%	33%	26%	27%	25%
<b>Operating Income</b>	53	81	416	413	313
Margin (%)	3%	5%	21%	21%	16%
<b>Adj. EBITDA</b>	629	630	808	805	771
Margin (%)	40%	40%	41%	42%	39%
<b>GAAP EPS</b>	\$0.04	\$0.07	\$0.65	\$0.32	\$0.41

Source: FactSet, Truist Securities Estimates

**Valuation/Risks.** We derive our \$100 PT using a 7-year DCF, which implies an EV/Sales multiple of 25x our FY23 estimates vs. the stock currently trading at 15x. While the stock is not cheap, we note that TTD has been able to deliver stronger than expected top-line growth while being highly profitable, delivering 37% Adj. EBITDA margin in 2Q22, on track to deliver sustained 40-50% over time by our ests. This out-performance has been consistent since IPO in 2016. Risks to our rating include uncertainty around the re-opening, execution mishaps given elevated growth expectations, competition putting pressure on take rates, loss of major clients, and adverse effects from industry changes.



## Truist Securities

### TTD - Income Statement

(data in millions, except per share data)

Last updated 10/5/22

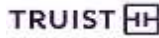
"Required Disclosures" are on the last tab of the workbook

Youssef Squalli - (212) 303-4180  
Naved Khan - (212) 590-0994  
Robert Zeller - (212) 319-3917

	2022				2023			
	1Q22A	2Q22A	3Q22E	4Q22E	1Q23E	2Q23E	3Q23E	4Q23E
<b>Net revenue</b>	<b>315.3</b>	<b>377.0</b>	<b>386.3</b>	<b>498.7</b>	<b>380.9</b>	<b>466.7</b>	<b>489.5</b>	<b>653.2</b>
Y/Y change	43%	35%	28%	26%	21%	24%	27%	31%
Quarterly revs as % of annual revs	20%	24%	24%	32%	24%	30%	31%	41%
<b>Operating expenses</b>	<b>-20.3%</b>	<b>19.5%</b>	<b>2.5%</b>	<b>29.1%</b>	<b>-23.6%</b>	<b>22.5%</b>	<b>4.9%</b>	<b>33.5%</b>
Platform operations	(57.9)	(62.7)	(65.3)	(78.9)	(69.3)	(76.1)	(80.2)	(100.2)
Y/Y change	27.4%	34.2%	28.3%	26.1%	19.6%	21.3%	22.9%	27.1%
% of revenue	18.4%	16.6%	16.9%	15.8%	18.2%	16.3%	16.4%	15.3%
Sales and marketing	(54.2)	(72.1)	(77.3)	(82.1)	(64.8)	(88.4)	(96.9)	(106.4)
Y/Y change	28.7%	52.8%	54.0%	38.7%	19.6%	22.6%	25.4%	29.7%
% of revenue	17.2%	19.1%	20.0%	16.5%	17.0%	18.9%	19.8%	16.3%
Technology and development	(49.6)	(61.3)	(62.9)	(64.3)	(59.3)	(75.1)	(78.1)	(82.6)
Y/Y change	31.1%	54.8%	41.1%	38.7%	19.6%	22.6%	24.2%	28.4%
% of revenue	15.7%	16.3%	16.3%	12.9%	15.6%	16.1%	16.0%	12.6%
General and administrative	(45.8)	(54.0)	(54.6)	(56.8)	(54.2)	(65.5)	(67.8)	(72.9)
Y/Y change	33.5%	37.1%	34.7%	19.7%	18.4%	21.3%	24.2%	28.4%
% of revenue	14.5%	14.3%	14.1%	11.4%	14.2%	14.0%	13.9%	11.2%
Stock-based compensation	(124.9)	(125.2)	(133.9)	(141.0)	(83.0)	(77.5)	(62.5)	(113.5)
Y/Y change	138.6%	177.0%	288.4%	-31.3%	-33.6%	-38.1%	-53.3%	-19.6%
% of revenue	39.6%	33.2%	25.5%	115.8%	21.8%	16.6%	12.8%	17.4%
<b>Total operating expenses</b>	<b>(332.4)</b>	<b>(375.2)</b>	<b>(393.9)</b>	<b>(423.1)</b>	<b>(330.5)</b>	<b>(382.5)</b>	<b>(385.6)</b>	<b>(475.6)</b>
Y/Y change	56.8%	72.1%	78.5%	0.5%	-0.6%	1.9%	-2.1%	12.4%
% of revenue	105.4%	99.5%	102.0%	84.8%	86.8%	82.0%	78.8%	72.8%
<b>Operating income</b>	<b>(17.1)</b>	<b>1.7</b>	<b>(7.6)</b>	<b>75.6</b>	<b>50.3</b>	<b>84.2</b>	<b>103.9</b>	<b>177.7</b>
Y/Y change	-319.1%	-97.2%	-109.5%	-398.0%	-395.2%	4731.2%	-1463.1%	135.1%
% of revenue	-5.4%	0.5%	-2.0%	15.2%	13.2%	18.0%	21.2%	27.2%
Total other income/(expense)	(0.3)	0.3	0.4	0.7	0.5	1.0	1.6	3.7
Profit/(loss) before tax	(17.3)	2.1	(7.3)	76.2	50.9	85.2	105.5	181.3
Income tax expense	2.7	(21.2)	1.5	(16.0)	(10.7)	(17.9)	(22.2)	(38.1)
Effective tax rate	16%	1016%	21%	21%	21%	21%	21%	21%
<b>Net income/(loss)</b>	<b>(14.6)</b>	<b>(19.1)</b>	<b>(5.7)</b>	<b>60.2</b>	<b>40.2</b>	<b>67.3</b>	<b>83.3</b>	<b>143.3</b>
% of revenue	-4.6%	-5.1%	-1.5%	12.1%	10.6%	14.4%	17.0%	21.9%
<b>Net income/(loss) attributable to common shareholders</b>	<b>(14.6)</b>	<b>(19.1)</b>	<b>(5.7)</b>	<b>60.2</b>	<b>40.2</b>	<b>67.3</b>	<b>83.3</b>	<b>143.3</b>
% of revenue	-4.6%	-5.1%	-1.5%	12.1%	10.6%	14.4%	17.0%	21.9%
<b>Diluted EPS</b>	<b>(\$0.03)</b>	<b>(\$0.04)</b>	<b>(\$0.01)</b>	<b>\$0.12</b>	<b>\$0.08</b>	<b>\$0.13</b>	<b>\$0.16</b>	<b>\$0.28</b>
Y/Y change	-166%	-141%	-109%	639%	-362%	-435%	-1526%	133%
<b>Adjusted EBITDA:</b>								
Net income	(14.6)	(19.1)	(5.7)	60.2	40.2	67.3	83.3	143.3
Add: Depreciation and amortization	12.4	12.3	13.3	13.2	13.4	13.6	13.8	14.2
Add: Stock-based compensation	124.9	125.2	133.9	141.0	83.0	77.5	62.5	113.5
Add: Interest expense	1.1	(0.7)	(0.4)	(0.7)	(0.5)	(1.0)	(1.6)	(3.7)
Change in fair value of preferred stock warrant liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add: Provision for (benefit from) income taxes	(2.7)	21.2	(1.5)	16.0	10.7	17.9	22.2	38.1
Add: Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Adjusted EBITDA</b>	<b>121.0</b>	<b>138.9</b>	<b>139.5</b>	<b>229.8</b>	<b>146.7</b>	<b>175.3</b>	<b>180.2</b>	<b>305.4</b>
Y/Y Change	71.6%	17.8%	13.7%	20.0%	21.3%	26.2%	29.1%	32.9%
EBITDA margin	38.4%	36.9%	36.1%	46.1%	38.5%	37.6%	36.8%	46.7%
Incremental EBITDA margin								
<b>Adjusted earnings:</b>								
Net income/(loss) attributable to common shareholders	(14.6)	(19.1)	(5.7)	60.2	40.2	67.3	83.3	143.3
Add: Share-based compensation	124.9	125.2	133.9	141.0	83.0	77.5	62.5	113.5
Add: Acq. and related items, including amort. of acq. intangibles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add: Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Tax effect of adjustments	(5.6)	(7.5)	0.0	0.0	0.0	0.0	0.0	0.0
<b>Adjusted profit</b>	<b>104.7</b>	<b>98.6</b>	<b>128.1</b>	<b>201.3</b>	<b>123.2</b>	<b>144.8</b>	<b>145.8</b>	<b>256.7</b>
Y/Y change	49.5%	11.8%	43.6%	-3.3%	17.7%	46.8%	13.8%	27.5%
Net margin	33.2%	26.2%	33.2%	40.4%	32.3%	31.0%	29.8%	39.3%
<b>Adjusted EPS</b>	<b>\$0.21</b>	<b>\$0.20</b>	<b>\$0.25</b>	<b>\$0.40</b>	<b>\$0.24</b>	<b>\$0.28</b>	<b>\$0.28</b>	<b>\$0.50</b>
Y/Y change	49%	11%	43%	-5%	15%	44%	12%	25%
Adjusted diluted weighted avg shares	499.8	502.3	504.8	507.3	509.9	512.4	515.0	517.6
Y/Y change	0.4%	1.1%	0.6%	1.4%	2.0%	2.0%	2.0%	2.0%
<b>Adjusted free cash flow:</b>								
Adjusted EBITDA	121.0	138.9	139.5	229.8	146.7	175.3	180.2	305.4
Less: Capital expenditures	(10.0)	(5.8)	(5.3)	(6.2)	(5.0)	(6.6)	(7.5)	(10.8)
Other and cash taxes	3.5	(0.4)	1.5	(15.2)	(10.2)	(17.0)	(21.1)	(36.3)
<b>Adjusted free cash flow</b>	<b>114.4</b>	<b>132.7</b>	<b>135.7</b>	<b>208.4</b>	<b>131.5</b>	<b>151.7</b>	<b>151.6</b>	<b>258.3</b>
Y/Y change	109.2%	34.6%	68.6%	13.0%	14.9%	14.2%	11.7%	23.9%

Source: Company filings and Truist Securities Estimates

"Required Disclosures" are on the last tab of the workbook  
 Youssef Squali - (212) 303-4180  
 Naved Khan - (212) 590-0994  
 Robert Zeller - (212) 319-3917



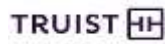
## Truist Securities

### TTD - Income Statement

(data in millions, except per share data)

	FY21A	FY22E	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E	FY29E	FY30E	CAGR 2021-2026
<b>Net revenue</b>	<b>1,196.5</b>	<b>1,577.3</b>	<b>1,990.3</b>	<b>2,509.6</b>	<b>3,130.4</b>	<b>3,864.6</b>	<b>4,723.6</b>	<b>5,804.3</b>	<b>7,098.9</b>	<b>8,642.8</b>	<b>26%</b>
Y/Y change	43.1%	31.8%	26.2%	26.1%	24.7%	23.5%	22.2%	22.9%	22.3%	21.7%	
Quarterly revs as % of annual revs											
<b>Operating expenses</b>											
Platform operations	(205.6)	(264.8)	(325.8)	(400.5)	(474.6)	(556.7)	(646.4)	(754.5)	(876.7)	(1,014.0)	22%
Y/Y change	21.0%	28.8%	23.0%	22.9%	18.5%	17.3%	16.1%	16.7%	16.2%	15.7%	
% of revenue	17.2%	16.8%	16.4%	16.0%	15.2%	14.4%	13.7%	13.0%	12.3%	11.7%	
Sales and marketing	(198.6)	(285.6)	(356.5)	(445.0)	(549.5)	(671.6)	(812.7)	(988.6)	(1,197.1)	(1,442.8)	28%
Y/Y change	37.0%	43.8%	24.8%	24.8%	23.5%	22.2%	21.0%	21.6%	21.1%	20.5%	
% of revenue	16.6%	18.1%	17.9%	17.7%	17.6%	17.4%	17.2%	17.0%	16.9%	16.7%	
Technology and development	(168.3)	(238.1)	(295.1)	(353.5)	(418.9)	(491.3)	(570.4)	(665.9)	(773.7)	(894.9)	24%
Y/Y change	29.5%	41.4%	23.9%	19.8%	18.5%	17.3%	16.1%	16.7%	16.2%	15.7%	
% of revenue	14.1%	15.1%	14.8%	14.1%	13.4%	12.7%	12.1%	11.5%	10.9%	10.4%	
General and administrative	(161.6)	(211.1)	(260.4)	(303.7)	(350.4)	(400.2)	(452.4)	(514.2)	(581.8)	(655.2)	20%
Y/Y change	19.7%	30.6%	23.3%	16.6%	15.4%	14.2%	13.1%	13.7%	13.1%	12.6%	
% of revenue	13.5%	13.4%	13.1%	12.1%	11.2%	10.4%	9.6%	8.9%	8.2%	7.6%	
Stock-based compensation	(337.4)	(525.0)	(336.4)	(376.3)	(432.0)	(463.7)	(519.6)	(580.4)	(638.9)	(777.9)	7%
Y/Y change	201.9%	55.6%	-35.9%	11.9%	14.8%	7.4%	12.0%	11.7%	10.1%	21.7%	
% of revenue	28.2%	33.3%	16.9%	15.0%	13.8%	12.0%	11.0%	10.0%	9.0%	9.0%	
<b>Total operating expenses</b>	<b>(1,071.7)</b>	<b>(1,524.6)</b>	<b>(1,574.1)</b>	<b>(1,879.0)</b>	<b>(2,225.4)</b>	<b>(2,583.4)</b>	<b>(3,001.5)</b>	<b>(3,503.7)</b>	<b>(4,068.1)</b>	<b>(4,784.7)</b>	<b>19%</b>
Y/Y change	54.9%	42.3%	3.2%	19.4%	18.4%	16.1%	16.2%	16.7%	16.1%	17.6%	
% of revenue	89.6%	96.7%	79.1%	74.9%	71.1%	66.8%	63.5%	60.4%	57.3%	55.4%	
<b>Operating income</b>	<b>124.8</b>	<b>52.6</b>	<b>416.1</b>	<b>630.5</b>	<b>905.0</b>	<b>1,281.2</b>	<b>1,722.1</b>	<b>2,300.6</b>	<b>3,030.8</b>	<b>3,858.1</b>	<b>59%</b>
Y/Y change	-13.4%	-57.8%	690.5%	51.5%	43.5%	41.6%	34.4%	33.6%	31.7%	27.3%	
% of revenue	10.4%	3.3%	20.9%	25.1%	28.9%	33.2%	36.5%	39.6%	42.7%	44.6%	
<b>Total other income/(expense)</b>	<b>(2.8)</b>	<b>1.1</b>	<b>6.7</b>	<b>8.1</b>	<b>12.3</b>	<b>16.1</b>	<b>20.9</b>	<b>27.4</b>	<b>35.4</b>	<b>45.8</b>	
<b>Profit/(loss) before tax</b>	<b>122.0</b>	<b>53.7</b>	<b>422.9</b>	<b>638.7</b>	<b>917.3</b>	<b>1,297.2</b>	<b>1,743.0</b>	<b>2,327.9</b>	<b>3,066.3</b>	<b>3,903.9</b>	
<b>Income tax expense</b>	<b>15.7</b>	<b>(32.9)</b>	<b>(88.8)</b>	<b>(134.1)</b>	<b>(192.6)</b>	<b>(272.4)</b>	<b>(366.0)</b>	<b>(488.9)</b>	<b>(643.9)</b>	<b>(819.8)</b>	
Effective tax rate	-13%	61%	21%	21%	21%	21%	21%	21%	21%	21%	
<b>Net income/(loss)</b>	<b>137.8</b>	<b>20.8</b>	<b>334.1</b>	<b>504.6</b>	<b>724.6</b>	<b>1,024.8</b>	<b>1,377.0</b>	<b>1,839.1</b>	<b>2,422.3</b>	<b>3,084.1</b>	<b>49%</b>
% of revenue	11.5%	1.3%	16.8%	20.1%	23.1%	26.5%	29.2%	31.7%	34.1%	35.7%	
<b>Net income/(loss) attributable to common shareholders</b>	<b>137.8</b>	<b>20.8</b>	<b>334.1</b>	<b>504.6</b>	<b>724.6</b>	<b>1,024.8</b>	<b>1,377.0</b>	<b>1,839.1</b>	<b>2,422.3</b>	<b>3,084.1</b>	<b>49%</b>
% of revenue	11.5%	1.3%	16.8%	20.1%	23.1%	26.5%	29.2%	31.7%	34.1%	35.7%	
<b>Diluted EPS</b>	<b>\$0.28</b>	<b>\$0.04</b>	<b>\$0.65</b>	<b>\$0.97</b>	<b>\$1.37</b>	<b>\$1.92</b>	<b>\$2.56</b>	<b>\$3.39</b>	<b>\$4.44</b>	<b>\$5.63</b>	<b>47%</b>
Y/Y change	-44%	-85%	1472%	49%	42%	40%	33%	33%	31%	27%	
<b>Adjusted EBITDA:</b>											
Net income	137.8	20.8	334.1	504.6	724.6	1,024.8	1,377.0	1,839.1	2,422.3	3,084.1	
Add: Depreciation and amortization	42.2	51.1	55.1	56.9	51.2	48.7	48.5	52.3	61.8	75.5	
Add: Stock-based compensation	337.4	525.0	336.4	376.3	432.0	463.7	519.6	580.4	638.9	777.9	
Add: Interest expense	1.0	(0.6)	(6.7)	(8.1)	(12.3)	(16.1)	(20.9)	(27.4)	(35.4)	(45.8)	
Change in fair value of preferred stock warrant liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Add: Provision for (benefit from) income taxes	(15.7)	32.9	88.8	134.1	192.6	272.4	366.0	488.9	643.9	819.8	
Add: Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Adjusted EBITDA</b>	<b>502.7</b>	<b>629.3</b>	<b>807.6</b>	<b>1,063.8</b>	<b>1,388.2</b>	<b>1,793.6</b>	<b>2,290.2</b>	<b>2,933.3</b>	<b>3,731.5</b>	<b>4,711.5</b>	<b>29%</b>
Y/Y Change	77.2%	25.2%	28.3%	31.7%	30.5%	29.2%	27.7%	28.1%	27.2%	26.3%	
EBITDA margin	42.0%	39.9%	40.6%	42.4%	44.3%	46.4%	48.5%	50.5%	52.6%	54.5%	
Incremental EBITDA margin	61%	33%	43%	49%	52%	55%	58%	60%	62%	63%	
<b>Adjusted earnings:</b>											
Net income/(loss) attributable to common shareholders	137.8	20.8	334.1	504.6	724.6	1,024.8	1,377.0	1,839.1	2,422.3	3,084.1	
Add: Share-based compensation	337.4	525.0	336.4	376.3	432.0	463.7	519.6	580.4	638.9	777.9	
Add: Acq. and related items, including amort. of acq. intangibles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Add: Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Tax effect of adjustments	(19.6)	(13.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Adjusted profit</b>	<b>455.6</b>	<b>532.7</b>	<b>670.5</b>	<b>880.9</b>	<b>1,156.6</b>	<b>1,488.6</b>	<b>1,896.6</b>	<b>2,419.5</b>	<b>3,061.3</b>	<b>3,861.9</b>	<b>27%</b>
Y/Y change	35.7%	16.9%	25.9%	31.4%	31.3%	28.7%	27.4%	27.6%	26.5%	26.2%	
Net margin	38.1%	33.8%	33.7%	35.1%	36.9%	38.5%	40.2%	41.7%	43.1%	44.7%	
<b>Adjusted EPS</b>	<b>\$0.91</b>	<b>\$1.06</b>	<b>\$1.31</b>	<b>\$1.69</b>	<b>\$2.19</b>	<b>\$2.79</b>	<b>\$3.52</b>	<b>\$4.46</b>	<b>\$5.62</b>	<b>\$7.06</b>	<b>25%</b>
Y/Y change	33%	16%	23%	29%	30%	27%	26%	27%	26%	26%	
Adjusted diluted weighted avg shares	499.3	503.6	513.7	522.0	528.7	534.2	538.6	542.1	545.0	547.3	1%
Y/Y change	1.9%	0.9%	2.0%	1.6%	1.3%	1.0%	0.8%	0.7%	0.5%	0.4%	
<b>Adjusted free cash flow:</b>											
Adjusted EBITDA	502.7	629.3	807.6	1,063.8	1,388.2	1,793.6	2,290.2	2,933.3	3,731.5	4,711.5	29%
Less: Capital expenditures	(60.0)	(27.2)	(29.9)	(33.0)	(36.0)	(38.9)	0.0	0.0	0.0	0.0	
Other and cash taxes	(24.4)	(10.7)	(84.6)	(127.7)	(183.5)	(259.4)	(348.6)	(465.6)	(613.3)	(780.8)	
<b>Adjusted free cash flow</b>	<b>418.3</b>	<b>591.3</b>	<b>693.1</b>	<b>903.1</b>	<b>1,168.7</b>	<b>1,495.3</b>	<b>1,941.6</b>	<b>2,467.7</b>	<b>3,118.3</b>	<b>3,930.7</b>	<b>29%</b>
Y/Y change	139.4%	41.4%	17.2%	30.3%	29.4%	27.9%	29.9%	27.1%	26.4%	26.1%	

Source: Company filings and Truist Securities Estimates



## Truist Securities

\*Required Disclosures\* are on the last tab of the workbook

Youssef Squali - (212) 303-4180  
Naved Khan - (212) 590-0994  
Robert Zeller - (212) 319-3917

### The Trade Desk, Inc. - DCF

(data in millions, except per share data)

	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E	FY29E	FY30E	CAGR 2021-2026
<b>Free Cash Flow (FCF)</b>									
Revenue	1,990.3	2,509.6	3,130.4	3,864.6	4,723.6	5,804.3	7,098.9	8,642.8	26%
EBITDA	807.6	1,063.8	1,388.2	1,793.6	2,290.2	2,933.3	3,731.5	4,711.5	29%
Less: Depreciation	(55.1)	(56.9)	(51.2)	(48.7)	(48.5)	(52.3)	(61.8)	(75.5)	3%
EBITA	752.5	1,006.9	1,337.0	1,744.9	2,241.7	2,881.0	3,669.7	4,636.0	31%
Less: Taxes at 21%	(158.0)	(211.4)	(280.8)	(366.4)	(470.8)	(605.0)	(770.6)	(973.6)	31%
Add: Depreciation	55.1	56.9	51.2	48.7	48.5	52.3	61.8	75.5	3%
Less: Capital Expenditures	(29.9)	(33.0)	(36.0)	(38.9)	(41.6)	(51.1)	(62.5)	(76.1)	-8%
<b>Unlevered Free Cash Flow</b>	<b>619.7</b>	<b>819.4</b>	<b>1,071.4</b>	<b>1,388.3</b>	<b>1,777.9</b>	<b>2,277.2</b>	<b>2,898.4</b>	<b>3,661.8</b>	<b>32%</b>

### Present Value of Cash Flows

2030 Terminal Value	40,460.6	44,304.4	48,513.3	53,122.0	58,168.6	63,694.6	69,745.6	\$76,371.5
2030 Cash Flow	1,940.0	2,124.3	2,326.1	2,547.1	2,789.0	3,054.0	3,344.1	\$3,661.8
2029 Cash Flow	1,681.4	1,841.1	2,016.0	2,207.6	2,417.3	2,646.9	\$2,898.4	
2028 Cash Flow	1,446.5	1,583.9	1,734.4	1,899.2	2,079.6	\$2,277.2		
2027 Cash Flow	1,236.6	1,354.1	1,482.8	1,623.6	\$1,777.9			
2026 Cash Flow	1,057.4	1,157.8	1,267.8	1,388.3				
2025 Cash Flow	893.6	978.5	1,071.4					
2024 Cash Flow	748.3	819.4						
2023 Cash Flow	619.7							
2022 Cash Flow								

<b>Enterprise Value</b>	<b>\$50,084</b>
Add: Cash and Investments	1,266.8
Less: Debt and Capital Leases	(219.3)
Add: PV of NOLs	
<b>Equity Value</b>	<b>\$51,131</b>
Divide by: Diluted Shares	513.7
<b>Price Target</b>	<b>\$100</b>

### Assumptions

Perpetuity Growth Rate	4%
Assumed Tax Rate	21%
Applied WACC	10%

Source: Company filings and Truist Securities Estimates



\*Required Disclosures\* are on the last tab of the workbook

Youssef Sqalli - (212) 303-4180

Naved Khan - (212) 590-0904

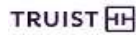
Robert Zeller - (212) 319-3917

## TTD - Balance Sheet

(data in millions, except per share data)

	FY21A	FY22E	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E	FY29E	FY30E
Current assets:										
Cash	754.2	901.8	1,143.9	1,868.4	2,541.2	3,383.1	4,514.3	5,931.7	7,740.7	10,159.0
Short term investments	204.6	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5	280.5
Accounts receivable, net	2,020.7	2,418.5	3,334.9	3,627.4	4,524.7	5,585.9	6,827.5	8,389.5	10,260.8	12,492.3
Prepaid expenses and other current assets	112.2	151.3	212.0	267.3	333.5	411.7	503.2	618.3	756.2	920.7
<b>Total current assets</b>	<b>3,991.6</b>	<b>3,752.1</b>	<b>4,971.3</b>	<b>6,043.6</b>	<b>7,679.9</b>	<b>9,661.1</b>	<b>12,125.5</b>	<b>15,220.0</b>	<b>19,038.1</b>	<b>23,852.4</b>
Non current assets:										
Property and equipment, net	135.9	124.2	99.0	75.1	59.9	50.0	43.1	41.9	42.6	43.3
Goodwill										
Operating lease assets, net	234.1	225.4	225.4	225.4	225.4	225.4	225.4	225.4	225.4	225.4
Deferred taxes, net	68.2	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7
Other assets, non-current	47.5	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
<b>Total non current assets</b>	<b>485.7</b>	<b>461.5</b>	<b>436.4</b>	<b>412.4</b>	<b>397.2</b>	<b>387.4</b>	<b>380.5</b>	<b>379.3</b>	<b>380.0</b>	<b>380.6</b>
<b>Total assets</b>	<b>3,577.3</b>	<b>4,213.6</b>	<b>5,407.7</b>	<b>6,456.0</b>	<b>8,077.1</b>	<b>10,048.5</b>	<b>12,506.0</b>	<b>15,599.3</b>	<b>19,418.1</b>	<b>24,233.0</b>
Current liabilities:										
Accounts payable	1,655.7	1,700.3	2,184.3	2,318.5	2,745.9	3,187.7	3,703.6	4,323.2	5,019.6	5,903.7
Accrued expenses and other current liabilities	101.5	127.9	167.6	200.7	237.8	278.9	323.9	378.1	439.3	508.1
Debt/financing obligation, current portion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating lease liabilities	46.1	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
<b>Total current liabilities</b>	<b>1,803.3</b>	<b>1,876.5</b>	<b>2,400.1</b>	<b>2,567.5</b>	<b>3,032.1</b>	<b>3,514.9</b>	<b>4,075.7</b>	<b>4,749.6</b>	<b>5,507.2</b>	<b>6,460.1</b>
Non current liabilities:										
Debt and capital leases, net of current portion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Financing obligation, non-current	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Operating lease liabilities, non current	238.4	219.3	219.3	219.3	219.3	219.3	219.3	219.3	219.3	219.3
Other liabilities, non-current	8.3	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
<b>Total non current liabilities</b>	<b>246.7</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>	<b>227.8</b>
<b>Total liabilities</b>	<b>2,050.0</b>	<b>2,104.4</b>	<b>2,627.9</b>	<b>2,795.4</b>	<b>3,259.9</b>	<b>3,742.7</b>	<b>4,303.6</b>	<b>4,977.4</b>	<b>5,735.0</b>	<b>6,688.0</b>
Shareholders' equity										
Common and convertible preferred stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Additional paid-in capital	915.2	1,476.3	1,812.7	2,189.0	2,621.0	3,084.7	3,604.3	4,184.8	4,823.7	5,601.5
Retained earnings & OCI	612.1	633.0	967.0	1,471.6	2,196.2	3,221.1	4,598.0	6,437.1	8,859.4	11,943.5
<b>Total shareholders' equity</b>	<b>1,527.3</b>	<b>2,109.2</b>	<b>2,779.7</b>	<b>3,660.6</b>	<b>4,817.2</b>	<b>6,305.8</b>	<b>8,202.4</b>	<b>10,621.9</b>	<b>13,683.1</b>	<b>17,545.0</b>
<b>Total liabilities and shareholders' equity</b>	<b>3,577.3</b>	<b>4,213.6</b>	<b>5,407.7</b>	<b>6,456.0</b>	<b>8,077.1</b>	<b>10,048.5</b>	<b>12,506.0</b>	<b>15,599.3</b>	<b>19,418.1</b>	<b>24,233.0</b>

Source: Company filings and Truist Securities Estimates



## Truist Securities

\*Required Disclosures\* are on the last tab of the workbook  
 Youssef Squalli - (212) 303-4180  
 Naved Khan - (212) 590-0994  
 Robert Zeller - (212) 319-3917

### TTD - Cash Flow Statement

(data in millions, except per share data)

	FY21A	FY22E	FY23E	FY24E	FY25E	FY26E	FY27E	FY28E	FY29E	FY30E
<b>Cash flows from operating activities:</b>										
Profit	137.8	20.8	334.1	504.6	724.6	1,024.8	1,377.0	1,839.1	2,422.3	3,084.1
<i>Adjustments to reconcile profit to net cash from operating activities:</i>										
Depreciation and amortization	42.2	51.1	55.1	56.9	51.2	48.7	48.5	52.3	61.8	75.5
Stock-based compensation	337.4	525.0	336.4	376.3	432.0	463.7	519.6	580.4	638.9	777.9
Other	30.8	31.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Changes in operating assets and liabilities:</i>										
Accounts receivable	(444.3)	(403.7)	(916.4)	(292.4)	(897.4)	(1,061.1)	(1,241.7)	(1,561.9)	(1,871.3)	(2,231.5)
Prepaid expenses and other assets	1.6	(41.7)	(60.8)	(55.3)	(66.1)	(78.2)	(91.5)	(115.1)	(137.9)	(164.5)
Other assets, non-current	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Accounts payable and accrued expenses	309.4	33.0	483.9	134.3	427.4	441.7	515.9	619.6	696.4	884.2
Accrued expenses and other current liabilities	7.6	26.4	39.6	33.2	37.1	41.1	45.0	54.2	61.2	68.8
Other liabilities, non-current	(44.0)	(24.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash provided by (used in) operating activities</b>	<b>378.5</b>	<b>218.6</b>	<b>271.9</b>	<b>757.5</b>	<b>708.9</b>	<b>880.8</b>	<b>1,172.7</b>	<b>1,468.6</b>	<b>1,871.5</b>	<b>2,494.4</b>
<b>Cash flows from investing activities:</b>										
Purchase of property and equipment	(54.8)	(24.0)	(29.9)	(33.0)	(36.0)	(38.9)	(41.6)	(51.1)	(62.5)	(76.1)
Capitalized software development costs	(5.2)	(3.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other	(33.7)	(77.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash provided by (used in) investing activities</b>	<b>(93.6)</b>	<b>(105.0)</b>	<b>(29.9)</b>	<b>(33.0)</b>	<b>(36.0)</b>	<b>(38.9)</b>	<b>(41.6)</b>	<b>(51.1)</b>	<b>(62.5)</b>	<b>(76.1)</b>
<b>Cash flows from financing activities:</b>										
Dividend payments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Share repurchases	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other equity	33.9	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Debt	(1.9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash provided by (used in) financing activities</b>	<b>31.9</b>	<b>34.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
Net increase (decrease) in cash and cash equivalents	316.8	147.7	242.0	724.5	672.8	841.9	1,131.1	1,417.5	1,809.0	2,418.3
Cash and equivalents at the beginning of the period	437.4	754.2	901.8	1,143.9	1,868.4	2,541.2	3,383.1	4,514.3	5,931.7	7,740.7
Exchange losses on cash and cash equivalents	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Cash and cash equivalents at the end of the period</b>	<b>754.2</b>	<b>901.8</b>	<b>1,143.9</b>	<b>1,868.4</b>	<b>2,541.2</b>	<b>3,383.1</b>	<b>4,514.3</b>	<b>5,931.7</b>	<b>7,740.7</b>	<b>10,159.0</b>

Source: Company filings and Truist Securities Estimates



## Company Description

The Trade Desk was founded in 2009 as one of the pioneers in advertising technology company that helps ad buyers create, manage, and optimize its digital advertising campaigns through its self-serve platform across a variety of different ad formats including video, display, native, audio, social on a variety of devices in different geographies. The company works with an assortment of partners to integrate with ad inventories, data providers, and publishers to give its ad buyers reach and decision making capabilities to help them effectively leverage the platform. The company is headquartered in Ventura, California and has offices across North America, Europe and Asia.

## Investment Thesis

We view the long-term growth prospects for TTD favorably, as advertisers embrace data-driven ad spending within digital, with a growing percentage going to programmatic, benefiting The Trade Desk directly, as the largest independent DSP. We believe The Trade Desk has a strong reputation with agencies, registering one of the fastest growth rates in the industry, and has outperformed Street expectations since the IPO. Impressively, the company has been doing so profitably since 2013. The company is also levered to the growing Connected TV, which we believe should provide the next leg of growth for TTD, as the company secures inventory and launches new products to help advertisers reach consumers on this platform using 1P and 3P data. We rate the shares Buy.

## Valuation and Risks

Our \$100 price target uses a 7-year DCF that implies a 25x EV/Revenue multiple on FY23 estimates.

Risks to our rating include competition putting pressure on take rates, loss of major clients, deterioration of macro causing decline in ad spending, lack of traction with newer products, and adverse changes from online cookies going away.

## Companies Mentioned in This Note

**Comcast Corporation** (CMCSA, \$30.99, Hold, Greg Miller)  
**The Walt Disney Company** (DIS, \$101.44, Buy, Matthew Thornton)  
**Netflix, Inc.** (NFLX, \$240.74, Hold, Matthew Thornton)  
**Spotify Technology S.A.** (SPOT, \$94.63, Buy, Matthew Thornton)  
**Target Corporation** (TGT, \$156.96, Hold, Scot Ciccarelli)  
**Uber Technologies, Inc.** (UBER, \$29.19, Buy, Youssef Squali)  
**Walgreens Boots Alliance, Inc.** (WBA, \$33.39, Hold, David MacDonald)  
**Walmart Inc.** (WMT, \$134.25, Hold, Scot Ciccarelli)  
Apple, Inc. (AAPL, NR)  
Warner Bros Discover (WDB, NR)  
Albertsons (ACI, NR)  
Paramount Global (PARA, NR)

## Analyst Certification

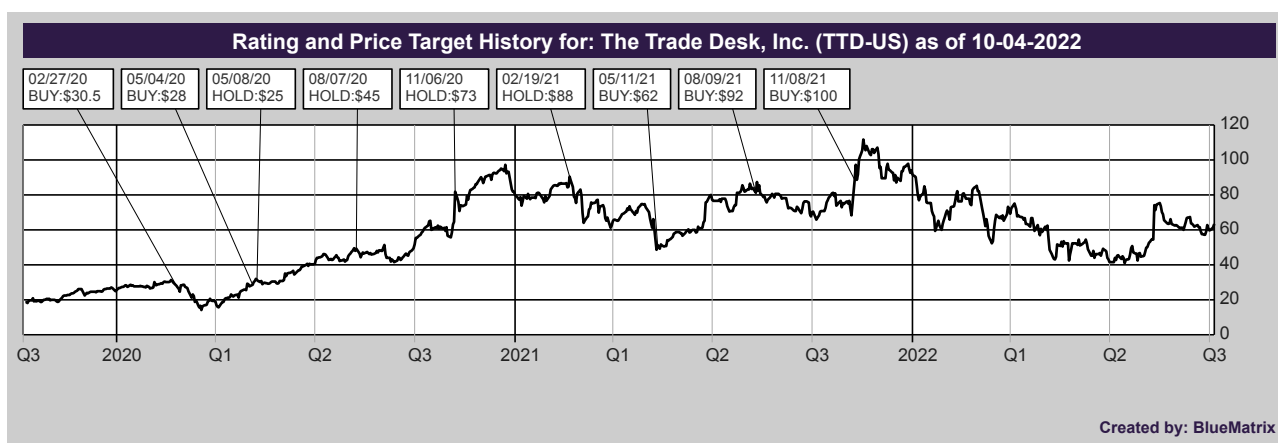
I, Youssef Squali, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject company(ies) and its (their) securities. I also certify that I have not been, am not, and will not be receiving direct or indirect compensation in exchange for expressing the specific recommendation(s) in this report.

## Required Disclosures

Truist Securities, Inc. makes a market in the following company: TTD-US

Analyst compensation is based upon stock price performance, quality of analysis, communication skills, and the overall revenue and profitability of the firm, including investment banking revenue.

As a matter of policy and practice, the firm prohibits the offering of favorable research, a specific research rating or a specific target price as consideration or inducement for the receipt of business or compensation. In addition, associated persons preparing research reports are prohibited from owning securities in the subject companies.



## Truist Securities Ratings System for Equity Securities

### Dissemination of Research

Truist Securities, Inc. ("Truist Securities") seeks to make all reasonable efforts to provide research reports simultaneously to all eligible clients. Reports are available as published in the restricted access area of our website to all eligible clients who have requested a password. Institutional investors, corporates, and members of the Press may also receive our research via third party vendors including: Thomson Reuters, Bloomberg, FactSet, and S&P Capital IQ. Additional distribution may be done by sales personnel via email, fax, or other electronic means, or regular mail.

For access to third party vendors or our Research website: <https://truistresearch.bluematrix.com/client/library.jsp>

Please email the Research Department at [EquityResearchDepartment@truist.com](mailto:EquityResearchDepartment@truist.com) or contact your Truist Securities sales representative.

### Truist Securities Rating System for Equity Securities

Truist Securities, Inc. ("Truist Securities") rates individual equities using a three-tiered system. Each stock is rated relative to the broader market (generally the S&P 500) over the next 12-18 months (unless otherwise indicated).

**Buy (B)** – the stock's total return is expected to outperform the S&P 500 or relevant benchmark over the next 12-18 months (unless otherwise indicated)

**Hold (H)** – the stock's total return is expected to perform in line with the S&P 500 or relevant benchmark over the next 12-18 months (unless otherwise indicated)

**Sell (S)** – the stock's total return is expected to underperform the S&P 500 or relevant benchmark over the next 12-18 months (unless otherwise indicated)

**Not Rated (NR)** – Truist Securities does not have an investment rating or opinion on the stock

**Coverage Suspended (CS)** – indicates that Truist Securities' rating and/or target price have been temporarily suspended due to applicable regulations and/or Truist Securities Management discretion. The previously published rating and target price should not be relied upon.

Truist Securities analysts have a price target on the stocks that they cover, unless otherwise indicated. The price target represents that analyst's expectation of where the stock will trade in the next 12-18 months (unless otherwise indicated). If an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of Truist Securities Research Management not to assign a target price; likewise certain stocks that trade under \$5 may exhibit volatility whereby assigning a price target would be unhelpful to making an investment decision. As such, with Research Management's approval, an analyst may refrain from assigning a target to a sub-\$5 stock.

### Legend for Rating and Price Target History Charts:

B = Buy

H = Hold

S = Sell

D = Drop Coverage

CS = Coverage Suspended

NR = Not Rated

I = Initiate Coverage

T = Transfer Coverage

Truist Securities ratings distribution (as of 10/05/2022):

Coverage Universe			Investment Banking Clients Past 12 Months		
Rating	Count	Percent	Rating	Count	Percent
Buy	529	69.42%	Buy	78	14.74%
Hold	230	30.18%	Hold	40	17.39%
Sell	3	0.39%	Sell	0	0.00%

## Other Disclosures

Information contained herein has been derived from sources believed to be reliable but is not guaranteed as to accuracy and does not purport to be a complete analysis of the security, company or industry involved. This report is not to be construed as an offer to sell or a solicitation of an offer to buy any security. Truist Securities, Inc. and/or its officers or employees may have positions in any securities, options, rights or warrants. The firm and/or associated persons may sell to or buy from customers on a principal basis. Investors may be prohibited in certain states from purchasing some over-the-counter securities mentioned herein. Opinions expressed are subject to change without notice.

Truist Securities, Inc.'s research is provided to and intended for use by Institutional Accounts as defined in FINRA Rule 4512(c). The term "Institutional Account" shall mean the account of: (1) a bank, savings and loan association, insurance company or registered investment company; (2) an investment adviser registered either with the SEC under Section 203 of the Investment Advisers Act or with a state securities commission (or any agency or office performing like functions); or (3) any other person (whether a natural person, corporation, partnership, trust or otherwise) with total assets of at least \$50 million.

Truist Securities, Inc. is a registered broker-dealer and a member of FINRA and SIPC. It is a service mark of Truist Financial Corporation. Truist Securities, Inc. is owned by Truist Financial Corporation and affiliated with Truist Investment Services, Inc. Despite this affiliation, securities recommended, offered, sold by, or held at Truist Securities, Inc. or Truist Investment Services, Inc. (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Truist Bank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Truist Bank may have a lending relationship with companies mentioned herein.

Please see our Disclosure Database to search by ticker or company name for the current required disclosures, including valuation and risks. Link: <https://truist.bluematrix.com/sellside/Disclosures.action>

Please visit the Truist Securities equity research library for current reports and the analyst roster with contact information. Link: <https://truistresearch.bluematrix.com/client/library.jsp>

Truist Securities, Inc., member FINRA and SIPC. Truist, Truist Securities, and Truist Investment Services are service marks of Truist Financial Corporation.

If you no longer wish to receive this type of communication, please request removal by sending an email to [EquityResearchDepartment@truist.com](mailto:EquityResearchDepartment@truist.com)

© Truist Securities, Inc. 2022. All rights reserved. Reproduction or quotation in whole or part without permission is forbidden.

ADDITIONAL INFORMATION IS AVAILABLE at our website, [TruistSecurities.com](https://TruistSecurities.com), or by writing to: Truist Securities, Research Department, 3333 Peachtree Road N.E., Atlanta, GA 30326-1070