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COMPANY UPDATE / ESTIMATE CHANGE / RATING CHANGE

Take-Two Interactive Software, Inc.

TTWO — NASDAQ — Neutral-3

Upgrading to Neutral from Underperform After Recent Pullback

Key Metrics

TTWO - NASDAQ (as of 2/8/18)		$103.51
Price Target		N/A
52-Week Range		$53.84 - $129.25
Shares Outstanding (mil) (basic)		114
Market Cap. ($ mil)		$11,770
3-Mo. Average Daily Volume		2,270,000
Institutional Ownership		95%
Total Debt/Total Capital (12/17)		1%
ROE (TTM ended 12/17)		34%
Book Value/Share (12/17)		$12.32
Price/Book Value		8.4x
Annual Dividend & Yield	Nil	Nil
EBITDA Margin, estim. (TTM ended 12/17)		26%

EPS FY 3/31 (non-GAAP figures)

	FY17	Prior FY18E	Current FY18E		Prior FY19E	Current FY19E
1Q	($0.34)		$0.41	A		
2Q	$0.66		$1.09	A		
3Q	$0.99		$1.12	A		
4Q	$0.68	$0.51	$0.55			
Year	$2.10	$2.92	$3.22		$4.55	$4.95
P/E	49.3x		32.1x			20.9x

Note: Quarterly EPS figures may not add to annual figure due to rounding & differing treatment of convertible securities from quarter to quarter.

Revenue ($mm) (non-GAAP figures)

	FY17	Prior FY18E	Current FY18E		Prior FY19E	Current FY19E
1Q	$273		$348	A		
2Q	$479		$577	A		
3Q	$745		$654	A		
4Q	$407	$430	$441			
Year	$1,904	$1,990	$2,020		$2,800	$2,950

Company Description: *Take-Two Interactive Software, Inc. is a global developer, marketer, distributor, and publisher of interactive entertainment software games for the PC and a variety of game systems. Popular franchises include Grand Theft Auto, Red Dead, BioShock, Borderlands, Civilization, NBA 2K, WWE 2K, and XCOM. The company is headquartered in New York City and its website address is www.take2games.com.*

Investment Highlights

- **We are raising our rating on TTWO to Neutral from Underperform.** This upgrade comes after a significant pullback in the stock price over the past month or so, including a 12% drop yesterday in reaction to fiscal 3Q results. Meanwhile, our expectations for FY19 revenues and earnings have increased based on our bullish sentiment toward the company and industry in general. At the current price, we are neutral on the shares and will monitor business conditions and stock valuations in search of an attractive entry point.

- **Fiscal 3Q results were mixed.** Net bookings (a non-GAAP measure of revenues that excludes nonrecurring items and adjusts for changes in deferred revenues) were $654 million compared to $745 million in the year ago period, down 12%. Although this reflected a light release slate, the decline was a bit greater than the street consensus expectation. Operating expenses were below management's plan due to the timing of marketing campaigns. Non-GAAP EPS of $1.12 exceeded the year ago figure of $0.99 and street consensus of $0.98.

- **The balance sheet is in excellent shape, in our view.** Total cash, cash equivalents, and short-term investments at 12/31/17 were $1.321 billion. Total debt was just $14 million and shareholders' equity was $1.400 billion.

- **We believe fundamentals are strong.** Across the industry, digital revenues are growing at a healthy pace, leading to potential margin gains. E-sports (competitive gaming with online viewership) is a nascent business with much growth potential; this includes TTWO's *NBA 2K* franchise. We believe TTWO has two of the biggest and best franchises in the industry—*Grand Theft Auto* and *Red Dead Redemption*—both of which should play meaningful roles in the company's future earnings.

Note Important Disclosures on Pages 6-7.
Note Analyst Certification on Page 6.

Exhibit 1
Non-GAAP Statements of Income (figures in thousands except per share data and percentages)

	Fiscal 3Q Ended		
	12/31/17	12/31/16	% chg
Non-GAAP Revenue (net bookings)	$653,939	$744,823	(12.2%)
Gross Profit	344,959	321,645	7.2%
Income (Loss) from Operations	167,200	143,904	16.2%
Net Income (Loss)	$133,668	$113,434	17.8%
Diluted Earnings Per Share*	**$1.12**	**$0.99**	13.1%
Avg. Diluted Shares Outst.	119,500	115,300	3.6%
% of Net Revenue:			**bp chg.**
Gross Profit	52.75%	43.18%	957
Income from Operations	25.6%	19.3%	625
Net Income	20.4%	15.2%	521

Note: Non-GAAP presentation excludes items such as the change in deferred net revenue and related cost of goods sold, business reorganization and restructuring expenses, stock-based compensation, amortization of intangibles, professional and legal fees, and the income tax effects of these items.

* Non-GAAP EPS calculations for periods shown use the "if converted" method related to TTWO's convertible securities due to achieving level of profitability that prompts such treatment.

Source: Take-Two Interactive Software, Inc. Note: March fiscal year

Further comments on fiscal 3Q results. We were encouraged with TTWO's fiscal 3Q despite a slight revenue shortfall in relation to street consensus. The non-GAAP figure (also referred to as net bookings) exceeded our estimate and was near the top end of management's guided range. We were particularly impressed with the level of revenue generation without major new product releases. The quarter was led by the *Grand Theft Auto* and *NBA 2K* franchises, with a *WWE*-based game also contributing. Recurrent consumer spending (virtual currency, add-on content, and microtransactions) grew 64% year-over-year and represented about one-third of the quarter's revenue.

Grant Theft Auto V, the industry's best-selling videogame of all time, continues to sell copies as its product extension, *GTA Online*, keeps the franchise fresh with new content and daily revenue generation with in-game purchase opportunities. *NBA 2K18*, released in September 2017, is the best-reviewed and best-selling game in that long-standing series. The game generates significant recurrent spending by gamers.

Operating expenses were well contained and were a bit lower than we expected due in part to a shift in the timing of product-related marketing campaigns. Non-GAAP EPS of $1.12 surpassed our estimate of $0.89 and exceeded management guidance of $0.85-$0.93. Cash flow from operating activities in the quarter was $203 million, allowing the company to make planned capital expenditures and spend $110 million on the repurchase of 1.06 million common shares, for an average price of roughly $103.50.

Financial condition. The balance sheet remained solid, in our view. Cash, cash equivalents, and short-term investments at December 31, 2017, were $1.321 billion. Inventories and accounts receivable were at reasonable levels, in our view. The current ratio was 1.18-to-1. Total debt (primarily a convertible note) booked on the balance sheet stood at roughly $14 million, just 1% of total capitalization. Total debt was much higher in past years, but has declined mainly due to conversions and maturities. One year ago, total debt was $258 billion, or 24% of total capitalization. Two years ago, total debt was $491 billion, or 48% of total capitalization. Shareholders' equity at the recent quarter end was $1.400 billion.

Outlook. We continue to view TTWO's outlook favorably and believe the company has some of the highest quality videogame franchises in the industry. The franchise portfolio has grown dramatically in size, quality, and profitability over the past ten years, in our view. The biggest franchise continues to be *Grand Theft Auto*, and online revenue generation from *GTA V* and *GTA Online* has consistently exceeded our expectations. We believe the high-margin nature of online/digital revenues makes it particularly compelling. We assume a future release pattern that could bring a new full-length *GTA* console game perhaps every six or more years. Meanwhile, *NBA 2K*, *Mafia*, *BioShock*, *Borderlands*, *XCOM*, and *Red Dead* have grown into major franchises for TTWO.

The highly anticipated *Red Dead Redemption 2* is now targeted for an October 2018 release (TTWO's 3Q of FY19). The project was recently shifted to this time frame from the originally planned Spring 2018 date in order to refine the game. Game delays have often produced overreactions from the investment community, in our view. While revenues are postponed to some degree when a game's release is delayed, the ultimate earnings potential is often enhanced due to a higher quality product and sometimes a more potent release window. Interest in *Red Dead Redemption 2* is considerable, and we have confidence in TTWO's highly acclaimed developer/studio, Rockstar Games. We expect *Red Dead Redemption 2* to possibly become the company's second-best selling title, behind *Grand Theft Auto V*. The *Red Dead* franchise last made an appearance in 2010 with the critically acclaimed *Red Dead Redemption*. We believe the combination of pent-up demand, effective marketing, and the high quality reputation of Rockstar Games bode well for this future game.

Exhibit 2
Product Pipeline (selected titles only)

Title	Platform	Release Date
Sid Meier's Civilization VI: Rise and Fall	PC	February 2018
Kerbal Space Program: Making History Expansion	PC	March 2018
Red Dead Redemption 2	PlayStation 4, Xbox One	October 2018 ~

~ represents 3Q FY19

Source: Take-Two Interactive Software, Inc. Note: March fiscal year

E-sports update. An industry trend gaining significant momentum is e-sports. This essentially entails competitive gaming with key roles coming from participants, event organizers, team leaders/owners, viewers, and advertisers. This nascent initiative is beginning to grow rapidly, and the videogame industry's size and demographics could help this turn into a meaningfully positive business model for game publishers, in our view. At this time, it is difficult to quantify the ultimate impact of e-sports, including revenue and expense levels, but we are generally bullish on the long-term potential.

We believe TTWO has videogame franchises that are well-suited to explore e-sports business models, including *NBA 2K*. The company recently created a competitive gaming league with the National Basketball Association, with the debut set for May 2018. The inaugural season will feature 17 teams based on NBA franchises and will feature videogame competitions patterned after the NBA regular and playoff seasons, as well as a championship matchup. Recent qualifying rounds of competition were encouraging to management based on the number of players participating and caliber of gameplay. We will be closely monitoring this initiative and perhaps soon will incorporate it into our financial forecast.

Guidance. Based on 3Q results and an updated 4Q outlook, management raised its annual financial guidance. Non-GAAP revenues (net bookings) for FY18 are projected in the $1.99-$2.04 billion range. Our new estimate is $2.02 billion, above our previous figure of $1.99 billion. We calculate non-GAAP EPS guidance (given some variables provided by the company) to be in a range of $3.19-$3.26. Our new non-GAAP EPS estimate for the year is $3.22 compared to our previous estimate of $2.92.

The blueprint for FY19 (twelve months ending March 31, 2019) has not changed much, in our view, although the year looks to have only an approximate half-year contribution from *Red Dead Redemption 2* rather than the bulk of the year based on its previously expected release date. Also, a major though unannounced title from the company's 2K label is expected to play a key role. We have increased our projected outlook for FY19, which now includes non-GAAP revenues of $2.950 billion (up $150 million from our previous estimate) and non-GAAP EPS of $4.95 (up $0.40 from our previous figure). These increases reflect our growing confidence in the release slate, margin trends, and the industry environment.

Valuation. We have been impressed with the development of TTWO's product portfolio, which now includes roughly a dozen major franchises. While new releases from the *GTA* franchise can lead to "spike" earnings years, we note new releases from other franchises, combined with catalog sales of older *GTA* games and recurring revenues from *GTA Online*, can help smooth earnings. Although the company is now typically profitable in years without a new *GTA* game, we prefer to look at price/earnings ratios over a multi-year period rather than focusing on any single year. Moreover, we believe the multi-year period should include at least one year of a full-game release from either the *GTA* or *Red Dead* franchise since such releases are likely to represent meaningful boosts to earnings and are expected to be a recurring part of TTWO's future.

TTWO shares are currently trading at 32.1x our FY18 EPS estimate (below average product release year) and 20.9x our FY19 EPS estimate (above average product release year that is expected to include *Red Dead Redemption 2*). This translates to a 21.5x multiple on our estimate of forward twelve-month EPS.

Although we are comfortable using this forward EPS figure, we believe a longer time frame adds insight. TTWO shares are trading at 38.3x an average EPS figure of $2.70 for the five-year period of FY14-FY18 (includes *GTA V* release in FY14) and 36.4x an average EPS figure of $2.84 for the five-year period of FY15-FY19 (includes the expected *Red Dead Redemption 2* release in FY19).

Opinion. We are raising our rating on TTWO to Neutral from Underperform. We remain mindful of the company's improving fundamentals related to growing diversification of the product portfolio, as well as the upcoming release slate highlighted by the long-awaited *Red Dead Redemption 2* in October 2018. We are also mindful of an expected full-length follow-up to *Grand Theft Auto V* at some point in the next several years.

With a significant pullback in the share price over the past month or so, including a 12% drop yesterday, we no longer find TTWO shares overvalued. Rather, we find the current valuation reasonable given our favorable outlook for the company and industry. We would consider a further rating upgrade at a lower valuation, given no change in company fundamentals.

Suitability. Our Suitability rating on TTWO is 3 on a 1-to-4 scale (1=most conservative, 4=most aggressive). This reflects the company's earnings history, product portfolio, and financial condition, among other factors. Recent improvements in earnings quality (such as profitability in years without a new, full-length *GTA* game) have led us to consider a more conservative Suitability rating, yet we maintain our 3 rating at this time due largely to market capitalization and balance sheet factors.

Risks. In addition to the importance of the *Grand Theft Auto* franchise, other investment considerations include general risks associated with a hit-driven business; the pace of production on games in development; overall debt levels; legal risks; potential uses for the company's current cash balance and future cash flow; the industry's hardware replacement cycle including supply and demand for consoles; creative and financial abilities to bring popular games to market; healthy relationships with the major hardware manufacturers; and general economic and consumer spending conditions.

Exhibit 3
Non-GAAP Statements of Income (figures in thousands except per share data and percentages)

	FY14	FY15	FY16	FY17	*FY18E*	*FY19E*
Net Revenue	$2,413,720	$1,668,765	$1,560,626	$1,903,946	*$2,020,000*	*$2,950,000*
Total Cost of Sales	1,411,176	861,008	838,947	1,003,267	*882,500*	*1,350,000*
Gross Profit	1,002,544	807,757	721,679	900,679	*1,137,500*	*1,600,000*
Total Oper. Exp.	468,501	498,214	483,467	600,181	*652,000*	*850,000*
Operating Income	534,043	309,543	238,212	300,498	*485,500*	*750,000*
Interest Exp. & Other	10,800	14,417	6,700	(5,564)	*(100)*	*(200)*
Pre-tax Income	523,243	295,126	231,512	306,062	*485,600*	*750,200*
Income Taxes, estim.	12,521	75,882	13,214	67,334	*106,832*	*157,542*
Net Income	$510,722	$219,244	$218,298	$238,728	*$378,768*	*$592,658*
Non-GAAP Diluted EPS	$4.26	$1.98	$1.96	$2.10	*$3.22*	*$4.95*
Avg. Shares Outst.	122,608	106,822	110,424	115,900	*118,000*	*120,000*
% Yr Over Yr Chg.						
Total Revenue	97.5%	(30.9%)	(6.5%)	22.0%	*6.1%*	*46.0%*
Gross Profit	94.5%	(19.4%)	(10.7%)	24.8%	*26.3%*	*40.7%*
Total Operating Exp.	0.4%	6.3%	(3.0%)	24.1%	*8.6%*	*30.4%*
Operating Income	998.9%	(42.0%)	(23.0%)	26.1%	*61.6%*	*54.5%*
Net Income	1443.9%	(57.1%)	(0.4%)	9.4%	*58.7%*	*56.5%*
% of Net Revenue:						
Gross Profit	41.54%	48.40%	46.24%	47.31%	*56.31%*	*54.24%*
Total Oper. Expenses	19.41%	29.86%	30.98%	31.52%	*32.28%*	*28.81%*
Operating Income	22.13%	18.55%	15.26%	15.78%	*24.03%*	*25.42%*
Net Income	21.16%	13.14%	13.99%	12.54%	*18.75%*	*20.09%*

Note: Presentation of earnings per share (EPS) is a function of the potential dilutive/anti-dilutive impact of a convertible note in each period. Our annual EPS figures for the presented years assume conversion of the note due to projected levels of profitability. This has the effect of increasing the fully diluted share count and adding back related annual interest, net of tax. Some periods, such as FY13 (not shown in the exhibit above), may not reach the profitability threshold and therefore would not reflect conversion.

Source: Take-Two Interactive Software, Inc. and Hilliard Lyons estimates Note: March fiscal year

Additional information is available upon request.

Prices of other stocks mentioned: Microsoft Corp. - MSFT - $85.01 - Neutral
Sony Corp. - SNE - $46.96
WWE, Inc. - WWE - $33.84 - Neutral

Analyst Certification

I, Jeffrey S. Thomison, 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.

Important Disclosures

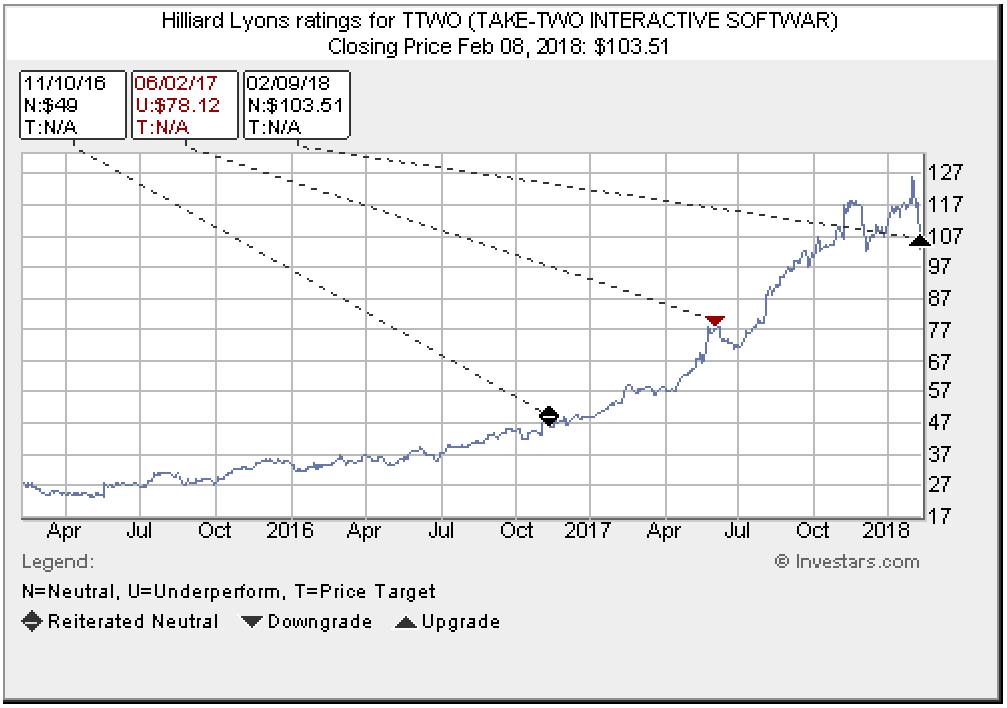
Hilliard Lyons' analysts receive bonus compensation based on Hilliard Lyons' profitability. They do not receive direct payments from investment banking activity.

Investment Ratings
Buy - We believe the stock has significant total return potential in the coming 12 months.
Long-term Buy - We believe the stock is an above average holding in its sector, and expect solid returns to be realized over a longer time frame than our Buy rated issues, typically 2-3 years.
Neutral - We believe the stock is an average holding in its sector, is currently fully valued, and may be used as a source of funds if better opportunities arise.
Underperform - We believe the stock is vulnerable to a price set back in the next 12 months.

Suitability Ratings
1 - A large cap, core holding with a solid history
2 - A historically secure company which could be cyclical, has a shorter history than a "1" or is subject to event driven setbacks
3 - An above average risk/reward ratio could be due to small size, lack of product diversity, sporadic earnings or high leverage
4 - Speculative, due to small size, inconsistent profitability, erratic revenue, volatility, low trading volume or a narrow customer or product base

	Hilliard Lyons Recommended Issues		Investment Banking Provided in Past 12 Mo.	
Rating	# of Stocks Covered	% of Stocks Covered	Banking	No Banking
Buy	31	28%	10%	90%
Hold/Neutral	74	66%	9%	91%
Sell	7	6%	0%	100%

As of 7 February 2018



Note: Price chart is current as of most recent calendar quarter end. Price targets accompanying Buy ratings reflect a one year time period while price targets accompanying Long-term Buy ratings reflect a two to three year time period.

Other Disclosures

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