



Take-Two Interactive Research Report: *The Rockstar Has Tapped Out!*

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Target Price: \$29.00
Current Price: \$34.76



Highlights:

- ❖ **Current Valuation** – Initiating TTWO coverage as a **SELL** with target of **\$29**. TTWO is a good company with potential for strong sales, but it has made some strategic mistakes. All things considered the market is currently overpricing TTWO considering its twelve month outlook.
- ❖ **Financials** – Take-Two shows strong financials looked at from both a current prospective and our forecasted pro-forma prospective.
- ❖ **Valuations** - Several valuation methods were used to predict Take Two's stock price. Our traditional discounted cash flow was the primary driver of our SELL initiation with the multiples valuation used for reference since it is a poor predictor for this company.
- ❖ **Drivers of Take-Two** – Drivers of TTWO's stock price are the ability for Take Two to continue their strong relationships and licensing agreements as well as predict the acceptance rate of new platforms. There are no strong connections between economic drivers / measurements and TTWO stock price movements with the exception of Consumer Confidence.

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TTWO Overview

Company Description¹

“Take-Two Interactive Software, Inc. develops interactive software games designed for personal computers (PCs), video game consoles and handheld platforms, and publishes games developed internally and by third parties. The Company also distributes games for video game consoles and handheld platforms published internally and by third parties, as well as hardware and accessories manufactured by third parties. The Company has consolidated its publishing operations into three labels: Rockstar Games, Gathering and Global Star. Rockstar will continue to focus on the creation of premium-priced entertainment. The Gathering label, which has historically focused on PC titles, will publish all mid-priced and non-Rockstar premium-priced products on the PC, console and handheld platforms. Global Star publishes PC, console and handheld titles. TTWO designs, develops, publishes, markets and distributes interactive software games for use on multimedia personal computer and video game console platforms. For the 6 months ended 4/30/04, revenues decreased 12% to \$528.9M. Net income decreased 74% to \$17.2M. Revenues reflect decreased sales of titles for the Playstation 2 and Xbox. Net income reflects an increase in research and development expenses.”

Company Thesis

Take-Two offers a fair selection of games but we believe its upcoming release from the hit franchise Grand Theft Auto (GTA) will carry a significant portion of the revenue along with Take-Two's distribution revenue. GTA Vice City, the latest release in this franchise, was a tremendous success and we see GTA San Andreas continuing that trend. For a complete listing of recent game titles released and games expected to launch during the holiday season see exhibit 1.

Industry Overview

In 2002, NPD Group estimated the video game hardware, software, and accessories market to be approximately \$10BB, an increase in 2001 sales of 10%. IDC group estimates that the market increased to \$13.9BB in 2003. To compare these numbers, we see that the movie industry collected \$9.2BB on ticket sales during the same year.² We are anticipating this upward trend to continue however it will not be as great because we feel a large portion of this increase was due to online gaming accessory sales which is not covered in this report. Further elaborating on our consensus, we examine the competitors, suppliers, buyers, and barriers to entry to the industry.

¹ Source: OneSource Business Description

² IDC and USA Today http://www.usatoday.com/money/media/2004-08-26-video-games_x.htm



Competitors:

The competitive landscape in the interactive gaming market is broad and contains both publicly traded and privately held companies. The gaming industry has plenty of room for rivals, particularly content providers supplying several platforms. Non-public players in this industry were not financially evaluated, but considered when looking at potential game sales.

Top 10 Publishers in Entertainment Software ³			
	2003 Market Share	2002 Market Share	Share Change
Electronic Arts	21.9%	18.6%	3.3%
Nintendo	11.0%	8.8%	2.2%
THQ	6.6%	6.5%	0.1%
Sony	6.6%	6.6%	0.0%
Activision	6.2%	7.1%	-0.9%
Atari	5.3%	4.4%	0.9%
Take 2	4.9%	8.7%	-3.8%
Konami	4.2%	3.6%	0.6%
Vivendi Universal	3.8%	2.3%	1.5%
Namco	3.8%	2.9%	0.9%

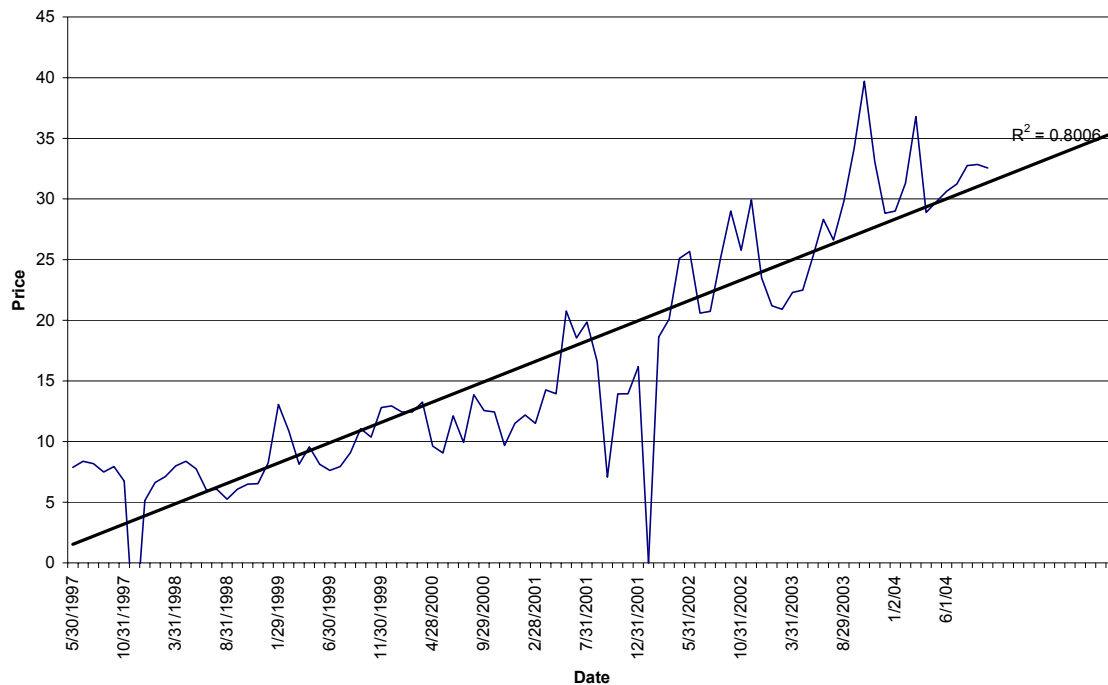
Take-Two Interactive Historical Stock Performance

Take-Two stock has historically been trending upward showing volatility about equal to the industry players they compete with. During the tech bubble burst Take-Two saw huge declines in their stock price as would be expected from a software company doing business during that period. Take-Two did not see the huge ramp up in stock price that many technology companies experienced during the late 90's. The lack of stock price appreciation during this period can be attributed to Take-Two's lack of title presence in the gaming industry as Take-Two's franchise hits came later in the company's history. The graph below shows the tremendous growth Take-Two has gone through. The solid straight line running through the return line on the graph below shows the stock price trend projected out twelve months which would project a stock price of about \$35. The behavioral finance pundits and technical analysts would translate this as a positive quality of the stock. While our fundamental analysis does not concur with this rudimentary projection, it is useful to benchmark our forecasts against what the market is forecasting for Take-Two's value.

³ Source: NPD Group / NPD Funworld / TRSTS video game service and UBS

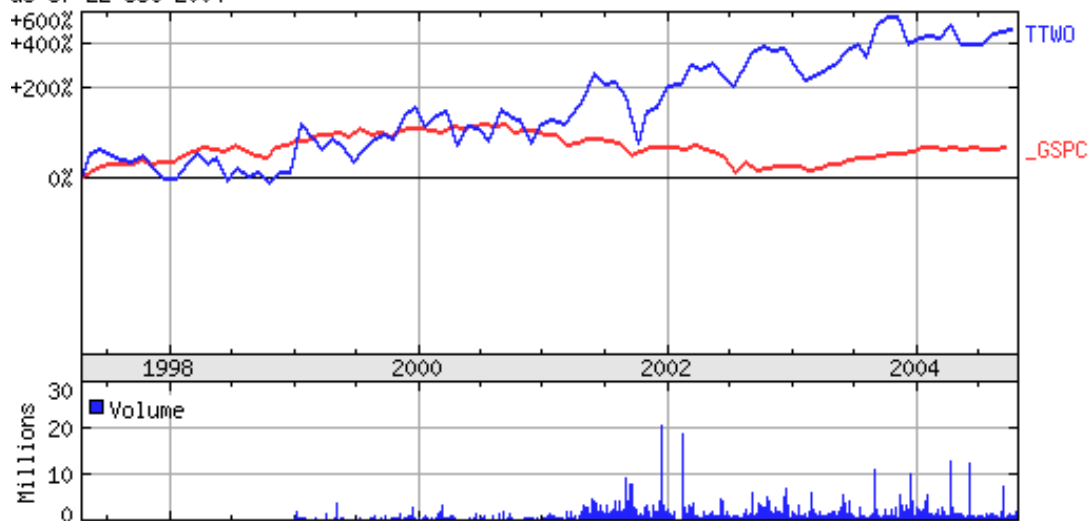


TTWO Historical Stock Price



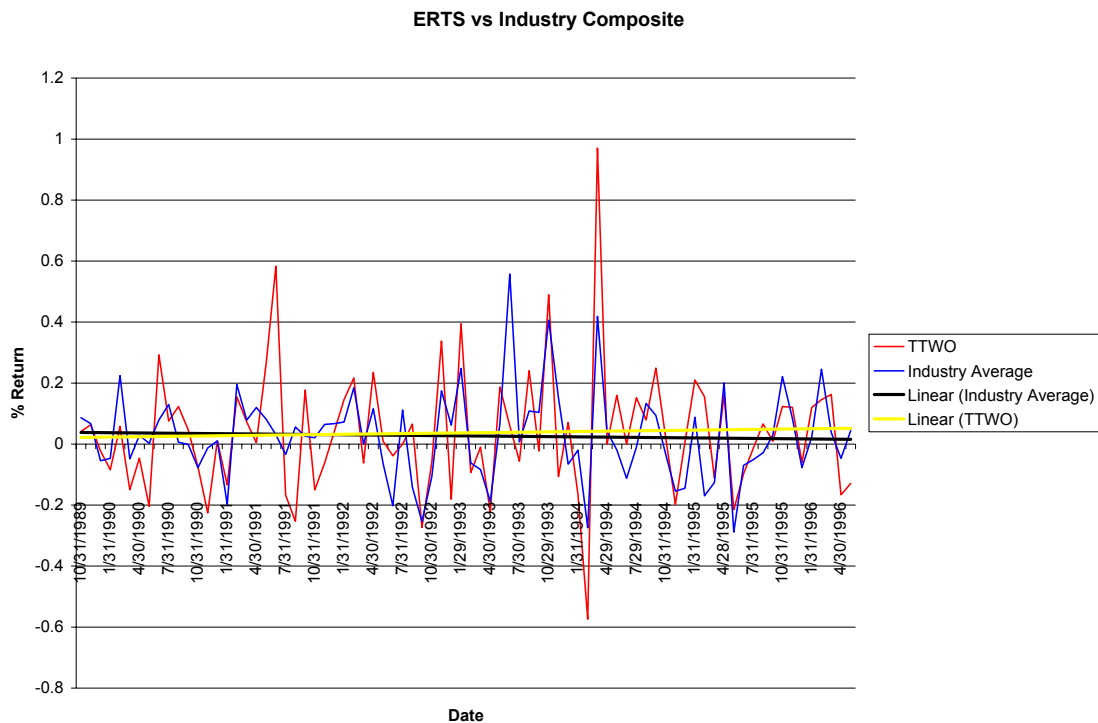
Comparing Take-Two with an S&P 500 Index, we see that during the early part of Take-Two's public life, their returns were not significantly different from a market index. Following the 2001 stock market correction, Take-Two's stock took off, giving its investors large returns relative to what they might have received from a market index portfolio.

S&P 500 INDEX
as of 22-Oct-2004





In analyzing the graph below, we see that Take-Two is showing a trend line that is slightly increasing more than the industry average (as seen by the industry trend line). In our Industry Initiation Report (Interactive Entertainment Industry Analysis: Video Games Have Become Mature, September 19, 2004) we discussed the maturing of the video game industry. The graph below shows Take-Two's holding period return on a monthly basis compared to the average of an industry composite consisting of competing gaming software developers. We can see from the trend line that over time both Take-Two and the entire industry have been smoothing out their returns, showing us that the industry is indeed maturing.



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The table below shows various measures of Take-Two's volatility based on price and returns. The table also shows the correlation between Take-Two and the S&P composite and an Industry composite that represents the returns and stock price of several of their competitors whose primary business is entertainment software. Competitors such as Sony and Vivendi were not included because of their diversified business portfolio. The standard deviations are based on daily returns and should be compared to each other on a relative basis.

⁴ Source: Yahoo! Finance and WRDS.



Stock Price Analysis

	<i>TTWO</i>	<i>Industry</i>	<i>S&P</i>
<i>Standard Deviation of Stock Price</i>	8.3996	10.2435	N/A
<i>Standard Deviation of Stock Return</i>	0.2098	0.197253	0.043017
<i>Sharp Ratio</i>	0.2191	-3.57837	N/A
<i>Maximum Holding Period Return</i>	0.9703	3.27272	0.111588
<i>Minimum Holding Period Return</i>	-0.5741	-0.60714	-0.1458
<i>Average Holding Period Return</i>	0.0373	0.025803	0.007724
<i>Correlation (TTWO v ...)</i>	1	0.6244	0.2651

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⁵ Source: Yahoo! Finance, WRDS, Analyst Calculations.

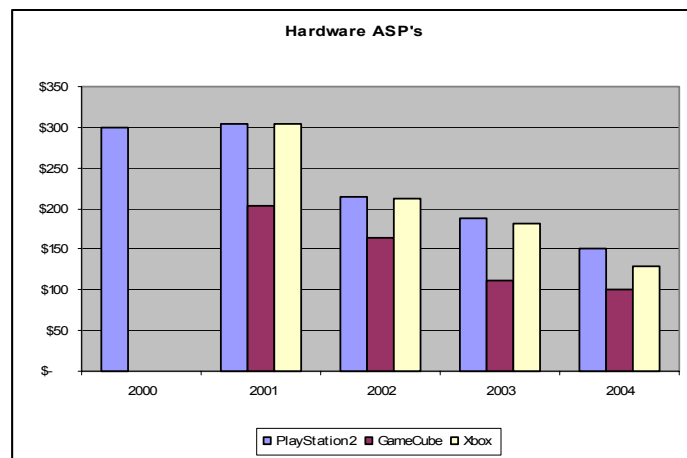


Selected Financial Data

Industry Console Sales:

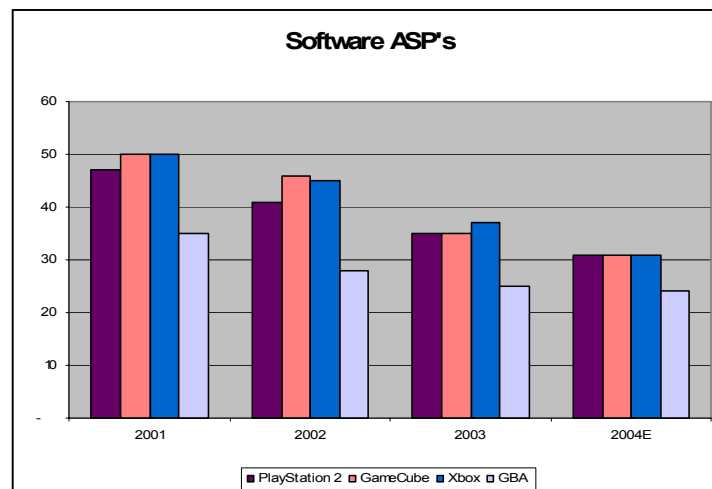
As discussed in the Industry Overview piece, the gaming platform industry is entering its final year of a 6 year cycle before the next generation of products is released. In the past, this has created a domino effect of lowered pre-existing platform retail prices, slower unit sales, lower average selling prices for software released for those consoles, and slower growth in aggregate software sales by platform. The below charts give a clearer picture of what has happened in the industry, and how it relates to our sales forecast.

Chart 1: Hardware Average Selling Prices



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Chart 2: Software Average Selling Prices



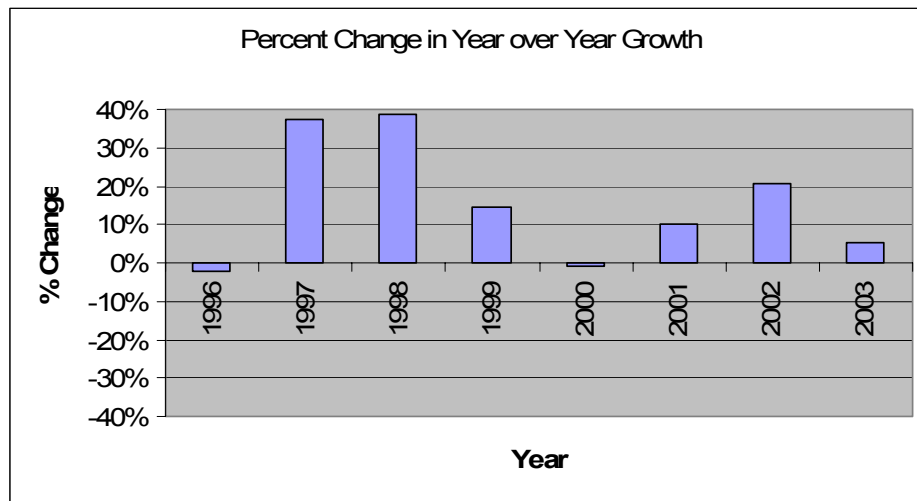
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⁶ Source: NPD Group / NPD Funworld / TRSTS video game service and UBS

⁷ Source: NPD Group / NPD Funworld / TRSTS video game service and UBS

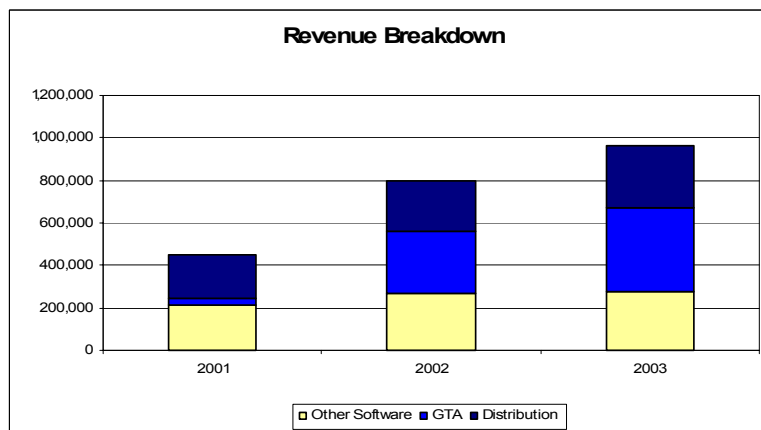


Chart 3: Total Software Sales % Change Year over Year



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Given this backdrop for falling prices in software and hardware, we expect sales for the industry to fall on average. Take-Two Interactive on the other hand, has extremely attractive prospects over the next fiscal year due to its immensely popular GTA product line. In order to forecast Take-Two's revenue, we have broken it down into 3 components: The Grand Theft Auto franchise line, other software sales, and distribution revenue from Take-Two's 'Jack of All Games' subsidiary. As detailed in the graph below, the GTA franchise line has become an increasingly important part of Take-Two's revenue growth.



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In order to forecast the GTA franchise into the future, we have examined the sale cycle of previous releases. For both GTA Vice City and GTA 3, the release essentially had a three year life. The initial release has always been during the holiday season, with a very

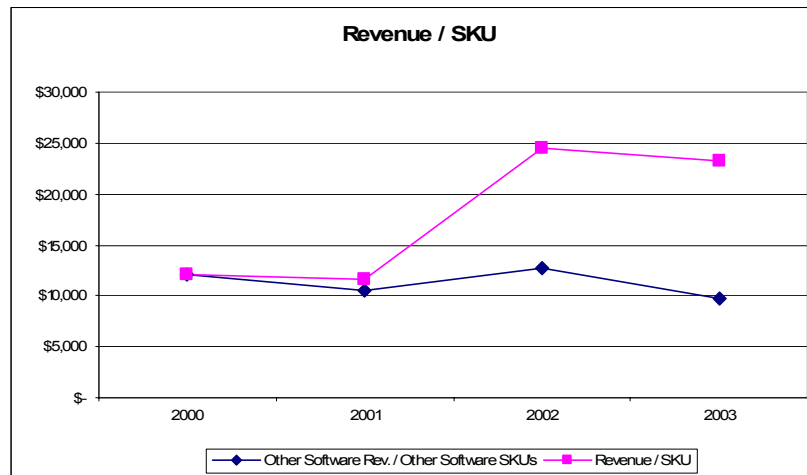
⁸ Source: NPD Group / NPD Funworld / TRSTS video game service and UBS

⁹ Company reports



strong following year, and trailing sales by the third year. We have forecasted similar success for GTA San Andreas, and the inevitable release of a 6th title for the new platforms. We have forecasted this final installment to reach the consumer during fiscal year 2007. Using our valuation models, we can determine that the market appears to be overestimating future sales of this franchise, and is ignoring the historical trend of diminishing returns. While the title certainly remains a blockbuster, we expect the success of the franchise to be exceptional by most standards but will continue to diminish over time.

Take-Two's "Other Gaming Software" sales are produced by the firms 2 publishing labels, Global Star Software and Rockstar Games. Rockstar Games publishes GTA and other high end titles such as Max Payne, Manhunt, and Smugglers Run. Global Star Software is more of a value publisher releasing games such as Tycoon, Army Men, and ESPN sporting titles at significantly lower price points then the industry average. Because of this lower-end market focus, the expected industry drop in software sales has not historically applied to Take-Two and we do not believe it will in the future. In fact, there has been some debate as to whether Take-Two should be increasing its prices along its ESPN game lines. The graph below illustrates the consistency of Take Two's game releases and revenue generation, and further emphasizes how the GTA line has transformed this firm. We can clearly see that when GTA became a significant portion of revenue in 2001, total Revenue/SKU skyrocketed.



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To forecast "Other Gaming Software" sales, we have taken management's guidance for upcoming releases, forecasted those SKU's at a historical growth rate and applied an average ratio to revenue (excluding GTA) going forward to remain consistent with Take-Two's value product practice. Take-Two's value product practice is the company's strategy to use Global Star Software to sell games to the price discriminating customer.

¹⁰ Company reports



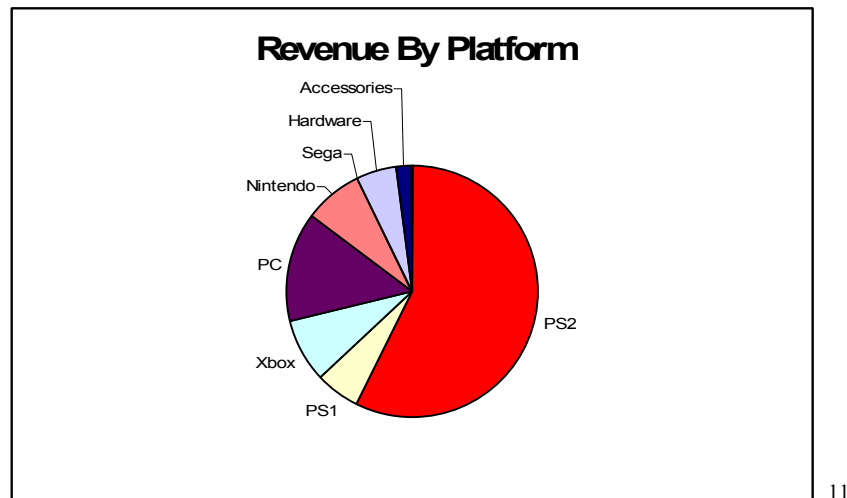
Given these expectations, we have forecasted end of year sales to be \$1.15B, and \$1.4B for 2004 and 2005 respectively. Our forecasts are slightly more aggressive than what management has forecasted because we feel they are being too conservative with their GTA release expectations. However, when calculating TTWO's stock price through our models it is clear that the market is expecting even greater sales than we are predicting. In short, the market is predicting greater sales than management is forecasting.

One source of concern in forecasting "Other Software Sales" is that this pool of sales is where Take-Two can expect to find its next potential franchise title. If TTWO is able to produce a blockbuster from this pool then revenues from this category will drastically shoot up. However, given TTWO's past performance and weak catalog of sales, we are discounting this concern.

The 'Jack of All Games' subsidiary of Take-Two has produced consistent returns, and reflects managements interest in diversifying its sales mix with complimentary business lines through vertical integration. While this seems strategically sound, some of the practices and expansion success raise questions about the group's future existence within Take-Two. In 2001 Take-Two had sold off all 'Jack of All Games' properties overseas, a strong signal from management that the distribution model doesn't fit with their overall strategy. Also, Take-Two has set up 'Jack of All Games' to be the sole distributor of its games published by Global Star Software. We question this distribution arrangement and believe that distribution could be much more efficiently done by outsourcing to existing distributors who have significant economies of scale due to the multiple brands they carry for the end market retailers. Retailers of interactive software have significant buying power that can be most effectively tackled through using a large distributor. Regardless of possible changes to this arrangement, the situation does not appear as if it will change in the next twelve months. Given this information, we have maintained "Distribution Sales" as a constant percentage of forecasted software game sales, which has resulted in a much slower growth rate in the business than its historical average.

Platform Diversification & Sole Franchise Title

While diversified across other platforms, Take-Two's revenue mix has rapidly shifted from a focus on the PC / Microsoft end of the market, to primarily being a Sony's Play Station 2 platform. This phenomenon is directly attributed to the GTA franchise. Take-Two has released the latest installment exclusively on the PS2 platform.



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What raises further concern about the company is that other new releases are also focused on the PS2 platform. The moderately successful Red Dead Revolver, and other releases have all initially launched on the PS2 platform. With the upcoming platform replacement cycle, this may put Take-Two in an awkward negotiating position with Microsoft.

The latest sales data released by UBS gives Take-Two two of the top ten slots, with Grand Theft Auto: San Andreas taking top honors and ESPN NBA 2K5 coming in at the seventh spot. These results further emphasize Take-Two's greatest strength and risk. Without a solid catalog of games, Take-Two is completely dependent on the success of one title in its library. The table below details Take-Two's upcoming release schedule for the holiday season. Most releases are new titles without any existing customer base, and a few potentials that play off old media content. This is further evidence to the fact that we don't expect anything spectacular coming out of "Other Software Sales", and the complete reliance on one franchise.

Take-Two's Fourth Quarter Title Releases ¹²					
Title	PS2	PC	XBOX	GameCube	GBA
GTA: San Andreas	X				
ESPN NHL 2K5	X		X		
Conflict: Vietnam	X	X	X		
Kohan II: King of War		X			
Robotech: Invasion	X		X		
Outlaw Golf 2	X		X		
Codename: Kids Next Door					X
Wings of War		X	X		
The Guy Game	X	X			
Vietcong: Purple Haze	X		X		

¹¹ Company reports

¹² Company reports

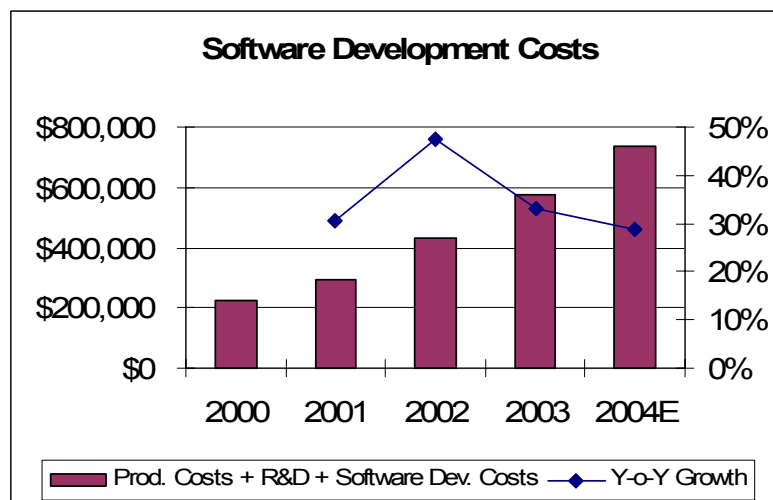


Costs Going forward for Take-Two

Take-Two has historically grown through acquisition. In 2003 they acquired TDK Mediactive, Frog City Inc., Cat Daddy Games LLC, and Angel Studios. Due to those acquisitions, Take-Two represents its software development costs in several forms. It is included in its production costs, research & development expense, and software development expense without any reasonable clarity. Also, the firm capitalizes its internal software development costs. While these real cash expenses are capitalized and realized fairly quickly, it does raise a red flag. Besides being outside of the industry norm, it is our opinion that this accounting practice reflects management's interest in coaxing accounting numbers for short-term performance over long-term conservatism. That said, we combined all the elements of this expense to examine the historical relationship and how to forecast these costs.

We are disappointed with the lack of clarity in Take Two's financial statements, particularly those of acquired companies and how those acquisitions fit into Take-Two as a whole. This lack of clarity prohibits us from truly understanding the amount of capital the company is spending on the development of new games.

While we cannot effectively determine the amount of development costs, we do know that TTWO's catalog of games is limited and that Take-Two is spending on development. This indicates to us that Take-Two's development spending is not leading to new hit games as would be expected.



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In the past, the firm has seen its research and development expense increase roughly 30% on average per year over the last platform replacement cycle, with a hyper cost period the year after a GTA launch. This is most likely due to the initiation of the next title within the series. Given our forecasts for two more blockbusters coming out of the GTA

¹³ Company reports



franchise (including San Andreas), we have forecasted similar software development cost increases in 2005 and 2008, and maintained off years at the historic percentage of sales.

Examining the Profitability of Take-Two vs. its Peers

Take-Two operates in a software industry that is just getting a handle on what defines a successful player in the field. As previously discussed, the software gaming industry is beginning to mature, and the players that have a clear strategy to manage fast pace growth and an efficient cost structure are emerging as leaders. With the rate that the aggregate gaming software market is growing, we thought it appropriate to take a step back and evaluate Take-Two's performance versus its peers. To do so, we will discuss the earnings growth rate, return on assets, and economic value added of Take-Two and a few of its competitors. (See the table below for all calculations).

Take-Two's earnings history helps emphasize its dependence on GTA. Earnings growth has only been impressive in those years that a GTA title was recently released. Most competitors have been riddled with substantially more difficult annual periods, but most of those competitors do not have a huge one hit, or an impressive catalog of games like an Electronic Arts. Interestingly, TTWO's volatility is similar to the industry average, but their earnings volatility is much greater. This is evidence that the market is effectively predicting earning revenue even though those revenues are volatile. This does not mean the market accurately predicts the earnings stream, but rather that the market understand the volatility involved and accounts for it in their analysis.

But earnings growth is only one accounting measure used to evaluate performance, and it certainly has its caveats. Specifically, it does not take into consideration the capital deployed to achieve that earnings growth. To address this, we have also compared Take-Two to its peers on a Return on Assets basis. This way, we can compare how well each firm has performed given the assets they have deployed. Here, Take-Two's core competency shines and proves to be one of the most effective with its use of capital, earning an average return on assets of 11.3% over the past 3 years, significantly higher than its peer group excluding Electronic Arts. We attribute this to management's ability to acquire assets and other smaller complimentary studios at bargain prices or use those assets more effectively.

Finally, we compare each of TTWO's competitor's ability to generate economic profit over time. While it is important to review how well the firms deploy their capital, ROA fails to take in account the cost of raising that capital. By calculating the economic performance spread of Take-Two and its peers we learn that Take-Two has not only successfully grown earnings and deployed capital, but it has done so at a higher spread of return on investment capital to cost of capital. Without a GTA release in three quarters of 2004, the firm performed expectantly poorly in this regard. We expect 2005 to be more consistent with past performance spreads. Ultimately this proves that TTWO is highly reliant on GTA to maintain its financial performance.



	EPS Growth Comparison					Return on Assets Comparison				EVA Analysis		
	2002	2003	2004	Cum.		2002	2003	2004		2002	2003	2004
TTWO	1.81	2.27	0.95		NI	71.60	98.10	41.25	ROIC	19.1%	27.6%	7.8%
		25%	-58%	-47%	Assets	492	707	739	WACC	11.8%	11.1%	11.9%
					ROA	15%	14%	6%	Spread	7.3%	16.5%	-4.1%
ERTS	0.35	1.07	1.87		NI	101.51	317.10	577.29	ROIC	10.2%	14.5%	16.4%
		207%	76%	440%	Assets	1,699	2,360	3,401	WACC	9.7%	8.9%	7.9%
					ROA	6%	13%	17%	Spread	0.5%	5.6%	8.5%
THQI	0.32	(0.20)	0.92		NI	13.00	(7.70)	35.80	ROIC	5.9%	2.9%	4.7%
		-164%	557%	192%	Assets	537.86	472.95	527.15	WACC	11.0%	10.6%	7.0%
					ROA	2%	-2%	7%	Spread	-5.1%	-7.7%	-2.3%
ATVI	0.39	0.43	0.54		NI	52.20	66.20	77.70	ROIC	12.0%	7.8%	10.3%
		9%	26%	37%	Assets	556.89	704.82	968.82	WACC	7.3%	8.9%	9.6%
					ROA	9%	9%	8%	Spread	4.7%	-1.1%	0.7%
ATAR	(0.16)	0.26	(0.40)		NI	(10.90)	18.10	(38.60)	ROIC	-6.3%	7.0%	2.0%
		-264%	-254%	-154%	Assets	241.86	232.08	193.96	WACC	8.0%	10.4%	14.0%
					ROA	-5%	8%	-20%	Spread	-14.3%	-3.4%	-12.0%
AKLMQ	(0.04)	(0.73)	(0.53)		NI	(3.30)	(67.80)	(56.40)	ROIC	N/A	N/A	N/A
				-	Assets	125.63	182.90	47.34	WACC	N/A	N/A	N/A
		-1777%	27%	1262%	ROA	-3%	-37%	-119%	Spread	N/A	N/A	N/A

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¹⁴ Source: Rochdale Research, Yahoo! Finance, Reuters, TTWO 2004 Forecasts



Take-Two Insider Ownership

Insider ownership appears to be normal and would not indicate any reason to use this data to value the stock. The below few charts show the stock ownership data.

Overview¹⁵	
% of Shares Held by All Insider and 5% Owners:	1%
% of Shares Held by Institutional & Mutual Fund Owners:	95%
% of Float Held by Institutional & Mutual Fund Owners:	96%
Number of Institutions Holding Shares:	10

TOP INSIDER & RULE 144 HOLDERS¹⁶			
Holder	Shares	% of Insider Shares	% of Shares Outstanding
GRACE, OLIVER R. JR	767,760	67.82%	1.70%
BRANT, RYAN A.	301,670	26.65%	0.67%
LEWIS, GARY	24,000	2.12%	0.05%
FLUG, ROBERT	23,600	2.08%	0.05%
JUDD, SAMUEL A .	15,000	1.33%	0.03%

Stock Analysis Conclusion

While TTWO has its issues, we believe Take-Two Interactive is a strong company that deserves to be traded at higher multiples than the industry due to its GTA franchise, use of acquired capital, and steady “Other Game Sales”. The blockbuster franchise GTA that Take-Two has in its arsenal is its greatest strength and weakness. GTA has proven to be one of the most highly demanded software lines, but all good things must come to an end and Take-Two’s revenue is too highly dependent on this title. Looking at Take-Two from an industry perspective, they are poorly positioned (against their more successful peers) because of their overall limited catalog of games, strong focus on the Sony Playstation platform (at the cost of PC (Microsoft) and XBOX (Microsoft) alternatives), and questionable distribution ownership strategy. The firms focus on value games seems ill-advised since we have proven with regression analysis that improving / declining economic variables have little explanatory power of gaming software sales. Moreover the regressions prove that there is no link between disposable income and TTWO stock. If disposable income does not impact sales or stock price then there is little reason to believe that Take-Two customers are price sensitive. Management seems concerned over a price conscious consumer that doesn’t seem to exist or at very best this consumer is a small fraction of the market. By focusing on this limited segment TTWO is seeking to expand their market share at the cost of loosing revenue.

¹⁵ Source: Yahoo! Finance

¹⁶ Source: Yahoo! Finance



Finally, the industry itself is strong and there is reason to believe expanding at a rational rate. Take-Two has been a volatile company when compared to market index portfolios, but shows the average volatility for its industry. Overall, Take-Two has a blockbuster franchise, few other games in its pipeline, and in our opinion a mis-targeted strategy.

Currently, we feel that the market has overestimated future game sales, particularly GTA and therefore has overpriced Take-Two. We initiate the company with a **SELL**, targeting the price at **\$29.00** considering the next twelve month outlook.



Valuation of Take-Two

DCF Valuation¹⁷

	0	1	2	3	4	5	
	2004	2005	2006	2007	2008	2009	
Revenue	\$ 1,145,000	\$ 1,394,590	\$ 795,512	\$ 937,885	\$ 1,555,602	\$ 1,144,487	
- COGS	789,278	1,014,807	530,782	625,776	1,131,971	763,626	
- SG&A	247,887	282,624	161,216	190,069	315,254	231,939	
- Depreciation	38,130	28,074	30,717	34,341	39,312	46,131	
EBIT	\$ 69,705	\$ 69,085	\$ 72,797	\$ 87,698	\$ 69,065	\$ 102,792	
- Corporate Taxes	28,252	29,846	36,573	43,118	33,292	52,617	
Deferred taxes	8,333	8,333	8,333	8,333	8,333	8,333	
+ Delta Deferred Taxes	-	-	-	-	-	-	
NOPLAT	\$ 41,452	\$ 39,239	\$ 36,224	\$ 44,580	\$ 35,773	\$ 50,176	
+ Depreciation	\$ 38,130	\$ 28,074	\$ 30,717	\$ 34,341	\$ 39,312	\$ 46,131	
- Delta Working Capital Requirements	117,889	144,643	(108,402)	27,138	112,811	(73,519)	
- Capital Expenditures							
FCF	\$ (38,307)	\$ (77,330)	\$ 175,343	\$ 51,783	\$ (37,726)	\$ 169,825	
Continuation Value							\$ 1,956,599
Discounted CF	\$ (38,307)	\$ (69,081)	\$ 139,932	\$ 36,917	\$ (24,027)	\$ 96,622	\$ 1,113,206
PV (FCF)	\$ 1,255,262						
Value of Firm	\$ 1,255,262						
Value of Long-term Debt	\$ -						
Value of Equity	\$ 1,255,262						
Shares outstanding	43,297						
Price per Share Common Stock	\$28.99						

¹⁷ Source of Financial Data: Company Reports, Yahoo! Finance.



Multiples Valuation Mode¹⁸

The below model was used to synthetically calculate TTWO's stock price on a multiples basis. The column "industry average" is a weighted average of each competitors multiple, weighted by the "Market Value – Equity". The yellow highlighted area on the left shows the synthetic stock prices using various multiples and their average. The "Error off Market Price" shows how far off TTWO current stock price is based on the multiple valuation (with negative numbers representing the market is overvaluing TTWO). The yellow highlighted area on the right calculates the multiples difference from the industry average. Various multiples used price Take-Two differently than the market and from our preferred discounted cash flow analysis. The average price derived from this model was \$36.11. The average price using the more relevant multiples was \$47.79. However, in looking closely we see that Price to Sales greatly skews the results. As we mentioned TTWO's sales are very volatile and this measure does not take this into consideration nor does P/E. Overall, we feel multiples are a poor way to value this stock and weigh our analysis more heavily on our DCF.

	Take Two (TTWO)	Industry Average	Electronic Arts (ERTS)	Activision (ATVI)	THQ (THQI)	Acclaim (AKLMQ.PK)	Midway (MWY)	Atari (ATAR)
Stock Price	33.67		44.30	14.07	18.83	0.02	11.83	1.58
Number of Shares	44,900,000		303,890,000	138,260,000	39,150,000	129,570,000	84,190,000	121,280,000
Market Value - Equity	\$1,511,783,000		\$13,462,327,000	\$1,945,318,200	\$737,194,500	\$2,302,459	\$995,967,700	\$191,622,400
Debt (mil)	\$141,000		\$0	\$0	\$0	\$41,360,000	\$15,000,000	\$9,560,000
Sales (mil)	\$1,033,693,000		\$2,957,141,000	\$1,000,000,000	\$630,940,000	\$142,680,000	\$109,130,000	\$427,880,000
Book Value (mil)	\$568,658,500		\$2,749,596,720	\$853,755,500	\$453,944,250	-\$115,965,150	\$152,299,710	\$126,252,480
Price-to-Sales	1.46	3.59	4.55	1.95	1.17	0.02	9.13	0.45
Market-to-Book	2.66	4.11	4.90	2.28	1.62	-0.02	6.54	1.52
Asset Value to EBIT	6.28	3.35	3.52	3.68	3.62	-4.09	7.03	1.49
Asset Value to Revenues	0.550	0.81	0.930	0.854	0.719	-0.813	1.396	0.295
Firm Value	\$1,511,924,000		\$13,462,327,000	\$1,945,318,200	\$737,194,500	\$43,662,459	\$1,010,967,700	\$201,182,400
EBITDA	\$90,570,000		\$781,460,000	\$232,130,000	\$125,304,684	\$28,336,248	\$21,673,218	\$84,976,968
Net Earnings	\$98,118,000		\$577,292,000	\$85,510,000	\$35,500,000	-\$56,410,000	-\$78,850,000	-\$50,320,000
Value / EBIT	16.69	11.44	17.23	8.38	5.88	1.54	46.65	2.37
PE Ratio	15.41	15.27	23.32	22.75	20.77	-0.04	-12.63	-3.81
Electronic Arts vs. Industry Avg.								

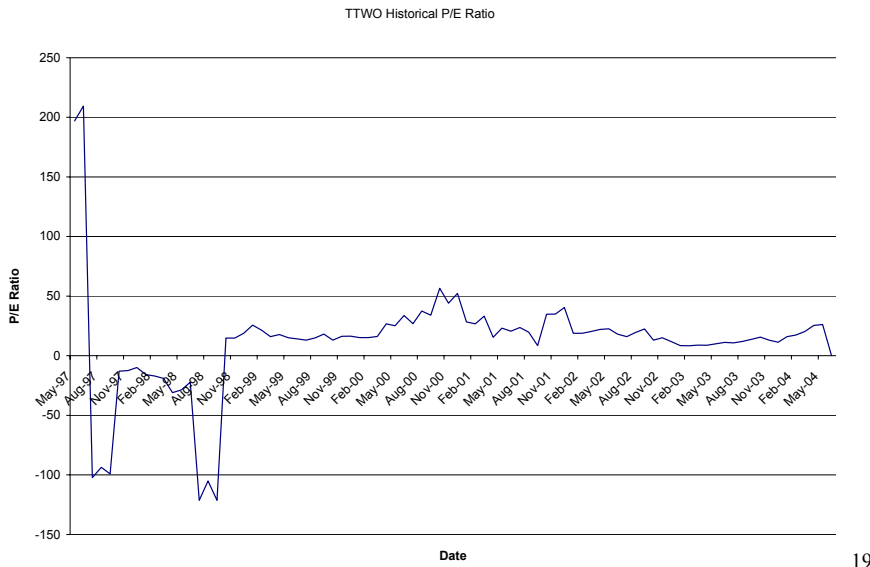
	Stock Price	Error off Market Price	Percent Deviation In
Stock Price (V/EBIT method)	\$23.08	-31.47%	45.93%
Stock Price (PE Ratio method)	\$33.36	-0.92%	0.93%
Stock Price (Price-to-Sales)	\$82.66	145.49%	-59.27%
Stock Price (Market-to-Book)	\$52.08	54.68%	-35.35%
Stock Price (Asset Value to EBIT)	\$6.77	-79.90%	87.17%
Stock Price (Asset Value to Revenues)	\$18.74	-44.35%	-32.41%
Average of All Methods	\$36.11	7.25%	
Average of Relevant Measures	\$47.79	41.94%	

¹⁸ Source of Financial Data: Company Reports, Yahoo! Finance.



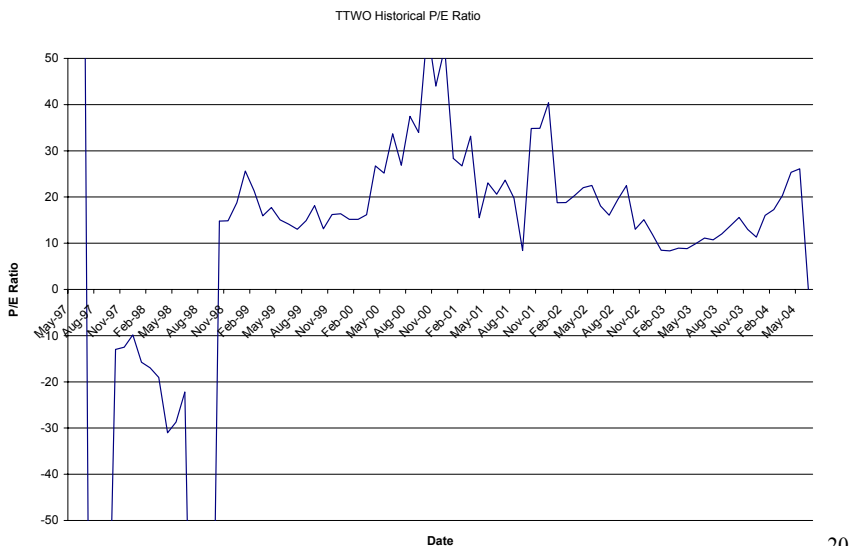
Historical P/E Multiples:

Early in Take-Two's public life the company went through period where the market priced the stock fairly inconsistently compared to earnings. From 1999 forward it appears that Take-Two's historic P/E has been fairly consistent.



This graph shows a larger scale and allows us to see the peak and trough from the tech bubble

However when looking at Take-Two's historical P/E on a smaller scale we can see that there is a great deal of fluctuation in ratio between the ranges of 10 and 50, which is a significant range. The current P/E ratio is at the lower end of the historical range. However we feel that valuing TTWO on a P/E basis is ill advised considering its volatility in sales and earnings.



This graph shows the P/E ratio on a smaller scale and shows the smaller movements in the ratio.

¹⁹ Source of Data: WRDS, Yahoo! Finance, Analyst Calculations.

²⁰ Source of Data: WRDS, Yahoo! Finance, Analyst Calculations.



Correlation and Regression Analysis

In an effort to determine the economic drivers of the industry, we regressed the return on Take-Two's stock against the quarter to quarter changes in several economic variables which we felt could have the most impact on Take-Two's return. These variables were GDP in Current and Chained dollars, Disposable income in current and chained dollars, Consumer Confidence Index, and Consumer expectations index. There would be some reason to believe these economic measures would have some correlation to movements in stock price.

In our industry coverage we discussed the assumption that video game sales were not tied to disposable income. This regression is further evidence that there is no direct connection between the two. However, we were surprised to see that there is a mild correlation between Take-Two returns and changes in the consumer confidence indices and GDP. Exhibit 2 shows the results of our correlation analysis. Corresponding to these correlations we see similar results in the regression output, with consumer confidence showing a mild connection and GDP a somewhat mild connection. Exhibit 3 is a more detailed listing of the regression outputs. Even though there is corollary power with these economic factors, we do not feel that it is strong enough to warrant a trading strategy.



Appendix and Exhibits

Exhibit 1: Take-Two Recent and New Releases:²¹

Game Title	Release	Price	Platform
Army Men: Sarge's War	September	14.99	PS2, XBX, GC
ESPN NFL 2005	September	19.99	PS2, XBX
ESPN NHL 2005	September	19.99	PS2, XBX
First to Fight	September	39.99	XBX, PC
Fisherman Freshwater Trophy	September	19.99	PC
Funkmaster Flex Digital Hitz	September	29.99	PS2, XBX
Kohan 2	September	39.99	PC
Maximum Underworld	September	19.99	PC
Medieval Conquest	September	19.99	PC
The Guy Game	September	39.99	PS2
Ultimate Sportsman Challenge	September	19.99	PC
Vietcong: Purple Haze	September	39.99	PS2, XBX
Wings of War	September	39.99	XBX, PC
Classified: Sentinel Crisis	December	19.99	PS2
Conflict: Vietnam	December	39.99	PS2, XBX, PC
ESPN College Hoops 2005	December	19.99	PS2, XBX
ESPN NBA 2005	December	19.99	PS2, XBX
Ford Mustang 40th Anniv.	December	19.99	PS2, XBX
Grand Theft Auto: San Andreas	December	49.99	PS2
Midnight Club 3: DUB Edition	December	49.99	PS2, XBX
Outlaw Golf 2	December	19.99	PS2, XBX
Robotech: Invasion	December	39.99	PS2, XBX
Scaler	December	19.99	PS2, XBX
Spy vs. Spy	December	19.99	XBX
Virtual Pool Tournament	December	14.99	PS2

²¹ Source: Company Documents, ebgames.com, gamestop.com, and Harris Nesbitt.



Exhibit 2: Correlation of Take-Two and the U.S. Economy
Correlation Analysis²²

	Correlation
Disposable Income Chained	-0.198445103
Disposable Income Current Dollars	-0.189267073
Gross domestic product at market prices	-0.178301451
Gross value added at basic prices	-0.174758804
Domestic expenditure at market prices	-0.100830202
Gross value added at basic prices	-0.075757816
Gross national disposable income at market prices	-0.050985395
Gross domestic product at market prices	-0.017960721
Gross domestic product at market prices	0.001291867
Gross domestic product at market prices	0.003086324
Gross domestic product at market prices	0.042556254
Gross value added at basic prices	0.210662356
GDP percent change based on chained 2000 dollars	0.332971322
GDP percent change based on current dollars	0.404449785
Present Situation Index	0.423129188
Expectations Index	0.460642947
Consumer Confidence Index	0.506830446

Exhibit 3: Regressions of Take-Two.²³

Description[1]	Variables / P-Value	R²	Significance F
Disposable income chained.	0.3020	0.0394	0.3020
Disposable income in current dollars.	0.3254	0.0358	0.3254
GDP % Change in Current	0.0295	0.1635	0.0295
GDP % Change Chained	0.0775	0.1108	0.0775
Disposable income and GDP variables.	Dis Income Chained 0.3004 GDP % Δ chained 2000 \$ 0.2081 Dis Income Current \$ 0.2279 GDP % Δ chained current \$ 0.0918	0.2642	0.1075
Consumer confidence index.	0.0050	0.2568	0.0050
Consumer Expectations index.	0.0119	0.2122	0.0119
Consumer Confidence and Consumer Expectations	Consumer Confidence 0.2223 Consumer Expectations 0.9887	0.2569	0.0211
Multiple variables collected.	Disposable Income Chained 0.6084 GDP percent change based on chained 2000 dollars 0.4777 Disposable Income Current Dollars 0.5366 GDP percent change based on current dollars 0.3515 Consumer Confidence Index 0.5313 Expectations Index 0.9716	0.3261	0.1512

²² Source: WRDS and The Bureau of Economic Analysis and Yahoo! Finance, and <http://www.pollingreport.com/consumer.htm>

²³ Source: WRDS and The Bureau of Economic Analysis and Yahoo! Finance, and <http://www.pollingreport.com/consumer.htm>





Yale SCHOOL of MANAGEMENT

	2001	2002	2003	2004E	2005E	2006E	2007E	2008E	2009E
Income Statement									
Net sales	\$ 451,396	\$ 794,676	\$ 1,033,693	\$ 1,145,000	\$ 1,394,590	\$ 795,512	\$ 937,885	\$ 1,555,602	\$ 1,144,487
Cost of sales									
Product costs	282,279	411,518	537,257	687,282	872,102	449,380	529,805	972,790	646,513
Royalties	19,875	80,442	89,294	90,320	130,819	74,623	87,978	145,923	107,358
Software development cost	4,169	8,124	11,003	11,677	11,885	6,780	7,993	13,257	9,754
Total cost of sales	\$306,323	\$500,084	\$637,554	\$789,278	\$1,014,807	\$530,782	\$625,776	\$1,131,971	\$763,626
Gross profit	145,073	294,592	396,139	355,722	379,783	264,730	312,109	423,631	380,862
Operating expenses									
Selling and Marketing	52,998	77,990	103,015	132,125	150,943	86,102	101,511	168,370	123,873
General and administrative	44,867	71,544	88,083	115,762	131,681	75,115	88,558	146,885	108,066
Research and development	6,190	11,524	25,107	39,934	23,734	13,539	15,962	26,474	19,478
Depreciation and Amortization	12,641	10,829	16,923	38,130	28,074	30,717	34,341	39,312	46,131
Total operating expenses	116,696	171,887	233,128	287,821	306,358	174,755	206,031	341,728	251,416
Income (loss) from operations	28,377	122,705	163,011	67,901	73,425	89,975	106,078	81,903	129,445
Interest income, net	8,510	480	(2,265)	1,604	-	-	-	-	-
Gain on Internet investments	23,991	1,287	(39)	-	-	-	-	-	-
Total non-operating income	32,501	1,767	(2,304)	1,604	-	-	-	-	-
Income (loss) before income taxes	(4,124)	120,938	165,315	69,505	73,425	89,975	106,078	81,903	129,445
Provision (benefit) for income taxes	(2,450)	49,375	67,197	28,252	29,846	36,573	43,118	33,292	52,617
Net income (loss)	\$ (6,918)	\$ 71,563	\$ 98,118	\$ 41,252	\$ 43,580	\$ 53,402	\$ 62,960	\$ 48,611	\$ 76,829



Yale SCHOOL of MANAGEMENT

	2001	2002	2003	2004E	2005E	2006E	2007E	2008E	2009E
Balance Sheet									
ASSETS									
Current assets									
Cash and cash equivalents	\$ 6,056	\$ 108,369	\$ 183,477	\$ 239,818	\$ 145,129	\$ 252,717	\$ 275,614	\$ 223,687	\$ 304,383
Accounts receivable	61,937	107,188	166,536	79,486	280,223	159,847	188,455	312,576	229,968
Inventories, net	21,892	74,391	101,748	96,882	144,731	75,700	89,248	161,441	108,908
Prepaid royalties	14,008	13,723	12,196	40,602	40,602	40,602	40,602	40,602	40,602
Prepaid expenses and other current assets	6,241	19,569	41,112	56,909	56,909	56,909	56,909	56,909	56,909
Deferred tax asset	22,251	5,392	8,333	8,333	8,333	8,333	8,333	8,333	8,333
Total current assets	227,335	328,632	513,402	522,030	675,927	594,108	659,160	803,548	749,103
Fixed assets, net	11,033	15,319	22,260	30,589	41,956	57,548	78,934	108,267	148,500
Prepaid royalties	11,097	12,203	8,439	3,333	3,333	3,333	3,333	3,333	3,333
Capitalized software development costs, net	9,814	10,385	16,336	25,792	25,792	25,792	25,792	25,792	25,792
Goodwill	56,033	61,529	101,498	123,703	123,703	123,703	123,703	123,703	123,703
Intangibles, net	34,337	55,293	44,836	33,586	33,586	33,586	33,586	33,586	33,586
Other assets, net	1,917	363	527	413	413	413	413	413	413
Deferred tax asset	7,946	7,983	-	-	-	-	-	-	-
Total assets	\$ 359,512	\$ 491,707	\$ 707,298	\$ 739,446	\$ 904,711	\$ 838,483	\$ 924,921	\$ 1,098,641	\$ 1,084,431
LIABILITIES and STOCKHOLDERS EQUITY									
Current liabilities									
Accounts payable	\$ 60,223	\$ 79,660	\$ 106,172	63,275	165,324	86,471	101,946	184,411	124,404
Accrued expenses and other current liabilities	20,250	49,821	56,883	65,857	85,493	44,716	52,719	95,363	64,332
Income taxes payable	-	1,603	2,265	167	167	167	167	167	167
Line of Credit	54,073	-	-	-	-	-	-	-	-
Current portion of capital lease obligation	99	95	-	-	-	-	-	-	-
Total current liabilities	134,645	131,179	165,320	129,299	250,984	131,354	154,832	279,942	188,902
Loan payable net of discount	-	-	-	-	-	-	-	-	-
Capital lease obligation, net of current portion	291	201	-	-	-	-	-	-	-
Deferred tax liability	4,515	3,885	8,486	8,486	8,486	8,486	8,486	8,486	8,486
Total liabilities	\$ 139,451	\$ 135,265	\$ 173,806	\$ 137,785	\$ 259,470	\$ 139,840	\$ 163,318	\$ 288,428	\$ 197,388
Stockholders equity									
Common stock	366	404	442	450	450	450	450	450	450
Additional paid-in capital	213,908	273,502	350,852	372,034	372,034	372,034	372,034	372,034	372,034
Deferred compensation	-	(227)	(1,890)	(2,644)	(2,644)	(2,644)	(2,644)	(2,644)	(2,644)
Retained earnings	16,239	87,804	185,024	226,276	269,856	323,258	386,218	434,829	511,657
Accumulated other comprehensive income (loss)	(10,452)	(5,041)	(936)	6,238	-	-	-	-	-
Total Stockholders Equity	\$ 220,061	\$ 356,442	\$ 533,492	\$ 602,354	\$ 639,696	\$ 693,098	\$ 756,058	\$ 804,669	\$ 881,497
Total Liabilities and Stockholders' Equity	\$ 359,512	\$ 491,707	\$ 707,298	\$ 740,139	\$ 899,166	\$ 832,938	\$ 919,376	\$ 1,093,096	\$ 1,078,886



Yale SCHOOL of MANAGEMENT

	2001	2002	2003	2004E	2005E	2006E	2007E	2008E	2009E
Cash Flow Statement									
Cash flows from operating activities									
Net income	\$ (6,918)	\$ 71,563	\$ 98,118	41,252	43,580	53,402	62,960	48,611	76,829
Adjustment to reconcile net income to net cash provided by operating activities									
Depreciation and amortization	12,641	10,829	12,516	38,130	28,074	30,717	34,341	39,312	46,131
Gain on disposal of fixed assets and sale of	219	126	(31)						
Internet investments	20,796	(181)	(39)						
Amortization of intangible assets and other	1,168	6,262	9,301						
Impairment of intellectual property and technology	-	-	7,892						
Non-cash charges for consolidation of distribution facilities	-	-	5,474						
Provision for doubtful accounts, returns and sales allowance	8,693	16,638	31,390						
Provision for deferred taxes	(9,422)	6,726	8,203	-	-	-	-	-	-
Write off of prepaid royalties and capitalized software	1,585	15,616	9,588						
Provision for returns	40,543	28,350	47,342						
Provisions for Price Concessions	25,757	29,513	45,919						
Tax benefit from exercise of stock options	-	10,700	20,858						
Compensatory stock and stock options	5	3,052	3,445						
Foreign currency transaction loss (gain)									
Other	108	(840)	(2,190)	59,394	0	0	0	0	0
Changes in operating assets and liabilities, net of effects of acquisitions									
Decrease (increase) in accounts receivable	(51,505)	(87,100)	(185,611)	87,050	(200,737)	120,376	(28,608)	(124,121)	82,608
Decrease in inventories	(2,821)	(12,852)	(25,146)	4,866	(47,849)	69,031	(13,548)	(72,193)	52,533
Increase in prepaid royalties	(8,174)	(8,157)	(10,764)						
(D/I) in prepaid expenses and other current assets	(4,509)	(3,034)	(15,597)						
(D/I) in capitalized software development costs	(3,099)	(895)	(5,152)						
(D/I) in accounts payable	1,511	23,019	20,148	(42,897)	102,049	(78,853)	15,476	82,465	(60,008)
(Decrease) increase in accrued expenses and other current	(3,021)	33,835	4,445	8,974	19,636	(40,777)	8,003	42,645	(31,031)
(Decrease) increase in income taxes payable	-	1,571	519	(2,098)	0	0	0	0	0
Decrease (increase) in other non-current assets	(455)	257	-						
Net cash provided by operating activities	\$ 27,319	\$ 144,998	\$ 80,628	\$ 194,672	\$ (55,247)	\$ 153,896	\$ 78,623	\$ 16,718	\$ 167,061
Cash flows from investing activities:									
Purchase of fixed assets	(8,568)	(10,466)	(15,464)	(46,459)	(39,442)	(46,308)	(55,727)	(68,645)	(86,364)
Sale of investments	-	6,170	114						
Proceeds from sale of fixed assets and investments									
Payments for intangible assets	(3,105)	(10,000)	(2,075)						
Acquisitions, net of cash acquired	(1,769)	(3,788)	(27,973)						
Other	(37)	-	(483)						
Net cash used in investing activities	\$ (13,479)	\$ (18,084)	\$ (45,881)	\$ (46,459)	\$ (39,442)	\$ (46,308)	\$ (55,727)	\$ (68,645)	\$ (86,364)
Cash flows from financing activities:									
Proceeds from private placements	20,892	-	-						
Net repayments under lines of credit	(40,545)	(54,284)	-						
Repayment of loan payable	(15,000)	-	-						
Proceeds from exercise of stock options and warrants	22,931	23,308	44,865						
Other financing	(68)	(1,012)	(303)						
Net cash provided by financing activities	\$ (11,790)	\$ (31,988)	\$ 44,562	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Effect of foreign exchange rates	(1,239)	7,387	(4,201)						
Net increase in cash for the period	811	102,313	75,108	148,212	(94,689)	107,588	22,896	(51,927)	80,697
Cash and cash equivalents, beginning of the period	5,245	6,056	108,369	183,477	239,818	145,129	252,717	275,614	223,687
Cash and cash equivalents, end of the period	\$ 6,056	\$ 108,369	\$ 183,477	\$ 331,689	\$ 145,129	\$ 252,717	\$ 275,614	\$ 223,687	\$ 304,383



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