Nintendo (7974.JP)

Long: 75% Upside

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Investment Thesis

Misunderstood Company In a Growing Industry In The Early Stages of a Value-Creating Business Transformation

1

Underappreciated Transition to a Less Cyclical Business Model

- Nintendo is in the early stages of a transformation from a cyclical business that's driven by hardware hits to a far more resilient business model increasingly based on recurring revenue streams and which lacks its historical reliance on the volatile "console cycle"
- Despite clear evidence that this transition is underway, Nintendo continues to trade at a ~2x-7x EBITDA multiple discount to the third-party video game publishers due to investors anchoring to its past cyclicality

2

Significant Margin Expansion Driven by Shift to Digital Downloads

- Digital downloads of games carry ~2x higher profit-per-unit to Nintendo than the sale of the same game in physical format and are increasing as a proportion of total games sold at the rate of ~500bps per year with a long runway to continue given only ~1/3 mix today
- Sell-side models fail to account for the vastly disparate unit economics of these different types of game sales, generally hardcoding a single, blended (and often flat) software revenue-per-unit assumption and contemplating no increase in software margins

3

Secular Tailwinds at The Company's Back

- The video game market is growing at a HSD rate as video games capture an increasing share of entertainment mindshare and spending

4

Expansion Into The Mobile Game Market

- Nintendo has recently entered the mobile game market, bringing its iconic intellectual property to a user base orders of magnitude larger than the console installed base

Business and Industry Overview

Leading Video Game Publisher and Console Maker With Iconic Intellectual Property

Business Overview

- Nintendo is a video game publisher and console maker
- How does Nintendo make money?
  - Sales of consoles
  - Sales of console accessories (e.g., extra controllers)
  - First-party video game sales (games published by Nintendo based on its intellectual property)
  - Royalties paid by third-party game publishers that sell games on Nintendo's consoles
  - Subscription revenue from Nintendo Switch Online
  - Mobile game revenue
- Razor/razorblade model where consoles (the hardware devices used to play video games) are sold at low margins, and the games played on consoles are sold at high margins to the installed base
- ~80%+ of Nintendo's software revenue derives from first-party games
- Of note, Nintendo games are sold exclusively for its own consoles (with the exception of mobile games)
- Current console is the Nintendo Switch, a hybrid home console / handheld

Intellectual Property

- Nintendo possesses the most valuable, broadest, and most enduring collection of intellectual property in the video game industry

"The importance of original IP in all categories of entertainment has never been greater, and gaming is no different." – Jim Ryan, CEO & President of Sony Interactive Entertainment, Sony Corporate IR Day

An Industry Leader

Publisher of 19 of the 25 Top-Selling Games Of All Time

Top-Selling Non-Multiplatform Video Games of All-Time

Title	Units Shipped (mm)	Publisher
Wii Sports	**82.88**	**Nintendo**
Super Mario Bros.	**40.24**	**Nintendo**
Mario Kart Wii	**37.24**	**Nintendo**
PlayerUnknown's Battlegrounds (PUBG)	36.60	PUBG Corporation
Wii Sports Resort	**33.11**	**Nintendo**
Minecraft (PC)	32.11	Mojang
Pokémon Red / Green / Blue Version	**31.38**	**Nintendo**
New Super Mario Bros.	**30.80**	**Nintendo**
New Super Mario Bros. Wii	**30.28**	**Nintendo**
Tetris (Game Boy)	**30.26**	**Nintendo**
Duck Hunt	**28.31**	**Nintendo**
Wii Play	**28.02**	**Nintendo**
Kinect Adventures!	24.00	Microsoft Game Studios
Nintendogs	**23.96**	**Nintendo**
Mario Kart DS	**23.60**	**Nintendo**
Pokémon Gold / Silver Version	**23.10**	**Nintendo**
Wii Fit	**22.67**	**Nintendo**
Wii Fit Plus	**21.13**	**Nintendo**
Super Mario World	**20.61**	**Nintendo**
Grand Theft Auto V (PS3)	20.32	Rockstar Games
Grand Theft Auto V (PS4)	19.39	Rockstar Games
Brain Age: Train Your Brain in Minutes a Day	**19.01**	**Nintendo**
Mario Kart 8 Deluxe	**19.01**	**Nintendo**
Garry's Mod	18.58	Valve
Mario Kart 7	**18.47**	**Nintendo**

Published **19** of **25** of the top-selling games of all-time

Source: Company filings, VGChartz

Summary Financials

Cheap Multiple For An Industry Leader In a Secularly-Growing Industry

Capitalization (¥mm)	
Share Price	¥42,390
Shares Out. (mm) - Ex. Treasury Shares	119.1
Market Cap	**5,049,686**
Cash and Investments	1,155,137
Debt	0
Enterprise Value	**3,894,549**
Trading Statistics	
3 Month ADVT (¥mm)	54,045
52 Week High	¥43,070
52 Week Low	¥27,055

Summary Financials and Valuation (My Estimates)						
Fiscal Year Ending:	*3/31/2018*	*3/31/2019*	*3/31/2020*	*3/31/2021*	*3/31/2022*	*3/31/2023*
¥mm	**2017**	**2018**	**2019E**	**2020E**	**2021E**	**2022E**
Revenue	**1,055,682**	**1,200,560**	**1,282,749**	**1,366,159**	**1,435,496**	**1,439,131**
% Chg Y/Y		*13.7%*	*6.8%*	*6.5%*	*5.1%*	*0.3%*
EBITDA	**186,622**	**259,266**	**333,682**	**390,559**	**452,442**	**499,161**
% Chg Y/Y		*38.9%*	*28.7%*	*17.0%*	*15.8%*	*10.3%*
% Margin	*17.7%*	*21.6%*	*26.0%*	*28.6%*	*31.5%*	*34.7%*
EPS	**¥1,162**	**¥1,616**	**¥1,925**	**¥2,346**	**¥2,712**	**¥2,993**
% Chg Y/Y		*39.0%*	*19.1%*	*21.9%*	*15.6%*	*10.4%*
FCF	**142,599**	**159,793**	**217,149**	**266,474**	**309,374**	**342,845**
% Margin	*13.5%*	*13.3%*	*16.9%*	*19.5%*	*21.6%*	*23.8%*
Valuation (My Estimates)						
EV / EBITDA			11.7x	10.0x	8.6x	7.8x
P / E			22.0x	18.1x	15.6x	14.2x
P / E (Ex-Cash)			17.0x	13.9x	12.1x	10.9x
FCF Yield			4.3%	5.3%	6.1%	6.8%

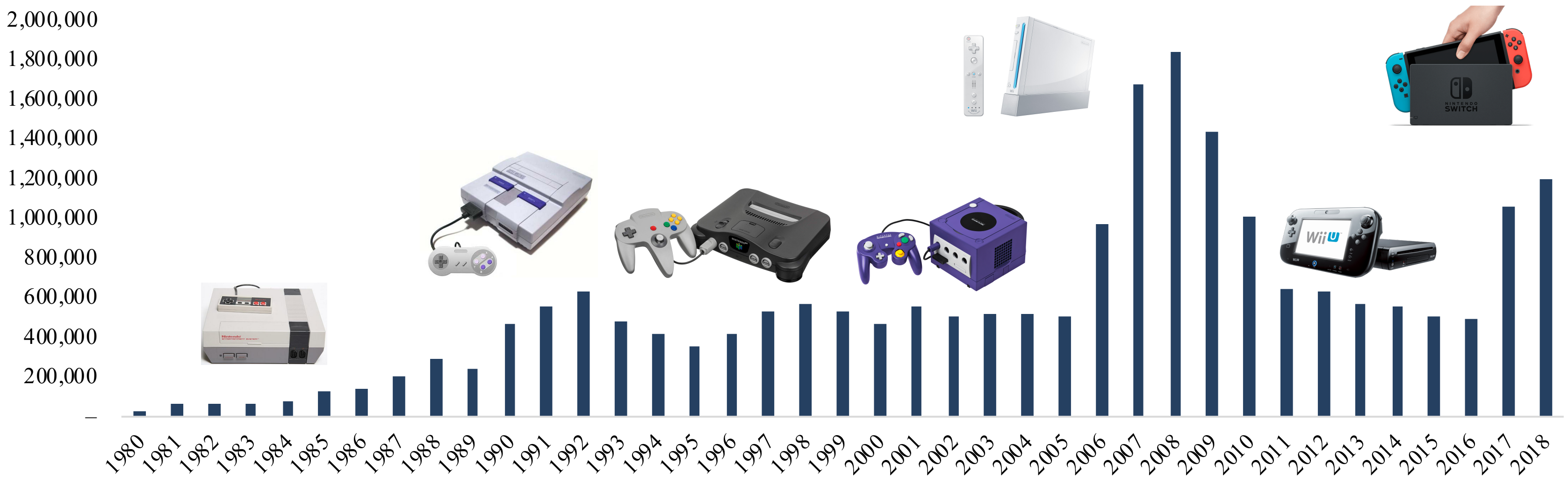
Source: Company filings, proprietary estimates

Underappreciated Transition to a Less Cyclical Business Model

Nintendo Has Historically Been a Boom/Bust Company

- Historically, the console makers have released a new console every 5-6 years in order to take advantage of advancements in technology
- With the release of each new generation of consoles, these console makers would essentially reset their entire installed base, often with volatile results
- Nintendo's average annual revenue during the lifetime of its least successful home console (the Wii U; 2012-2016) was 56% lower than Nintendo's average annual revenue during the life of its most successful home console (the Wii; 2006-2011)
- **However, the console cycles that have plagued Nintendo in the past are becoming increasingly irrelevant and less disruptive due to several key developments**

Nintendo Historical Net Sales (¥mm)



Underappreciated Transition to a Less Cyclical Business Model

Management Has Made Mitigating Cyclicality a Key Priority

"There will be times when business is good and times when business is bad. But I want to manage the company in a way that keeps us from shifting between joy and despair." – Shuntaro Furukawa, Nintendo CEO, 4Q18 Earnings Call (1st Earnings Call following announcement of appointment as CEO)

Underappreciated Transition to a Less Cyclical Business Model

Shift to an Incremental Upgrade Model With Common Architecture

- In the past, each new generation of consoles was designed with radically different underlying architecture than the preceding generation. As a result, new game development would shift entirely to the new console upon its release, effectively abandoning the previous installed base and creating significant risk around new console releases.
- Nintendo and other console makers are beginning to take an "incremental upgrade" approach in which new consoles are made with fundamentally similar underlying architecture to the preceding generation with only iterative improvements to processors, graphics chips, etc. This makes it feasible for game developers to simultaneously develop the same games for both the current and previous generation of consoles.
- This is identical to Apple's approach to the iPhone; all iPhone models run on the same operating system (iOS) and can utilize the same set of applications, allowing for a gradual build-up in the installed base over time without the need to ever fully reset
- For Nintendo, the effect of this is to mitigate the risk that occurred in the Wii U era where the entirety of Nintendo's game development efforts were concentrated on hardware that ultimately never garnered a substantial installed base

Nintendo Switch

Nintendo Switch 2

"Also, as technological advances took place at such a dramatic rate, and we were forced to choose the best technologies for video games under cost restrictions, each time we developed a new platform, we always ended up developing a system that was completely different from its predecessor. However, I think that we no longer need this kind of effort under the current circumstances. [...] Apple is able to release smart devices with various form factors one after another because there is one way of programming adopted by all platforms. Another example is Android. [...] The point is, Nintendo platforms should be like those two examples." – Satoru Iwata, Former Nintendo CEO, 3Q14 Earnings Call

"Up until now, the hardware lifecycle has trended at around five or six years, but it would be very interesting if we could prolong that life cycle, and I think you should be looking forward to that." - Shigeru Miyamoto, 3Q18 Earnings Call

"It is very likely that Nintendo will follow the evolutionary hardware development model pioneered by Sony and Microsoft in the future. We will see multiple Switch models that will share the same hardware base and that allows developers to develop for only one system. The company already took a first step by launching the Switch Lite, which shares all the specs with the original device. That will definitely make Nintendo a fundamentally less cyclical business." – GLG Expert, Independent Video Game Consultant

Source: Primary research

Underappreciated Transition to a Less Cyclical Business Model

Greater Mix of Recurring Revenue

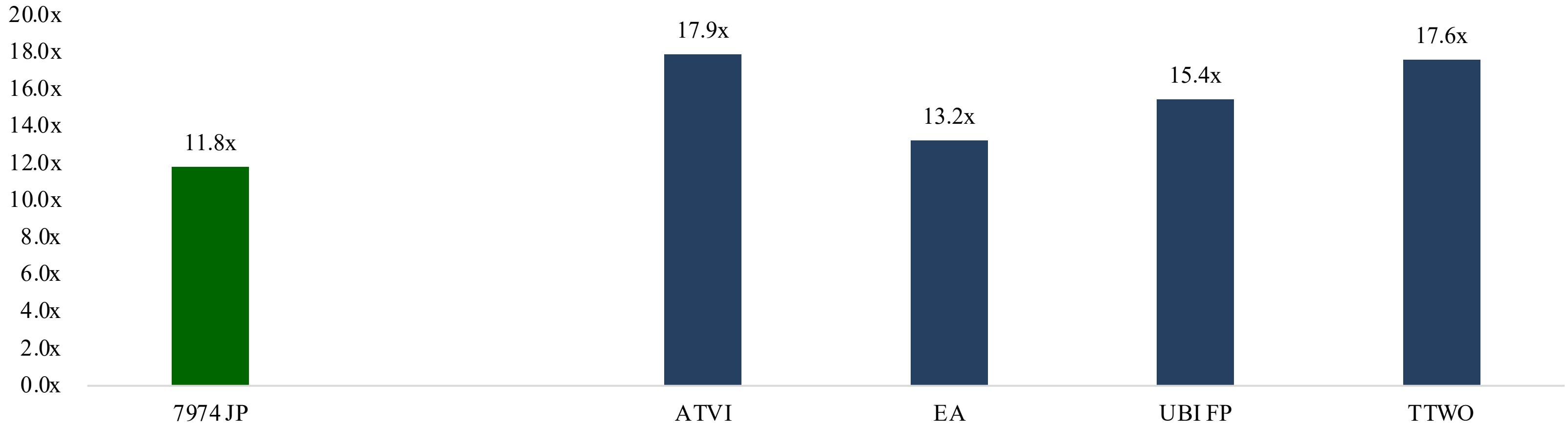
- Nintendo's earnings are being increasingly driven by recurring sources of high-margin revenue
  - **Nintendo Switch Online**: $20/year online subscription service that enables Switch owners to utilize online multiplayer functionality, save their games to the cloud, and access a select portion of Nintendo's extensive back library of classic games. Despite being available for only ~6 months, 28.2% of the console's installed base were subscribers as of the end of March 31, 2019.
  - **Downloadable Content ("DLC")**: The advent of sales of add-on content (new levels, game characters, etc. on top of the initial purchase of the base game) add a high-margin revenue source that's independent of the console cycle. In their most recent fiscal years, EA and TTWO earned 44.8% and 40.1%, respectively, of their revenue from add-on content vs. a small (but increasing) share for Nintendo.

Underappreciated Transition to a Less Cyclical Business Model

Nintendo Receives No Valuation Credit For This Shift

- Nintendo currently trades at a considerable discount to the publicly-traded major third-party video game publishers. This is despite:
  - Being exposed to the same long-term growth trends
  - Having a more established and expansive portfolio of intellectual property
  - Being in a much earlier stage of realizing the low-hanging fruit from the shift to digital downloads
  - Higher quality earnings with no adjustments for items such as stock-based compensation
- This discounted valuation exists because Nintendo is still perceived as a cyclical business (because third-party publishers generally sell their games on all or most console platforms, they are naturally insulated from console cycle risk)
- **As Nintendo increasingly sheds the cyclicality that has historically characterized its business, it follows that its valuation multiple should increasingly resemble those of the publishers**

Nintendo EV/EBITDA Multiple vs. Peers



Significant Margin Expansion Driven By Shift to Digital Downloads

Digital Distribution Will Result In a Profound Step-Change In Nintendo's Profitability

- The proportion of games purchased digitally is increasing at the rate of ~500bps per year with a long runway to continue given only ~1/3 mix today
- Digital distribution is significantly margin/profit accretive because 1) Nintendo doesn't have to share economics with retail middlemen and 2) it obviates the need for packaging/manufacturing expenses
- Third-party video game publishers have already seen massive margin expansion from the shift to digital
- Digital distribution also allows for the sale of "DLC," allowing Nintendo to more fully exploit its users' propensity to spend
- Sell-side models nonsensically assume flat software revenue-per-unit and contemplate no increase in software margins. FY2023 consensus estimates for Nintendo call for EBITDA margins of 29.9% compared to the 30.6% peak margin during the Wii era, despite the fact that virtually none of Nintendo's game sales at that time were digital.
- By explicitly modeling the mix of digital vs. physical games sold and accounting for the differing unit economics, I comfortably underwrite above-consensus margins and profitability even with:
    - Conservative assumptions around digital mix
    - No assumed revenue uplift from DLC
    - Game *unit* sales assumptions in-line with consensus

Digital Downloads Generate ~2x Profit-per-Unit

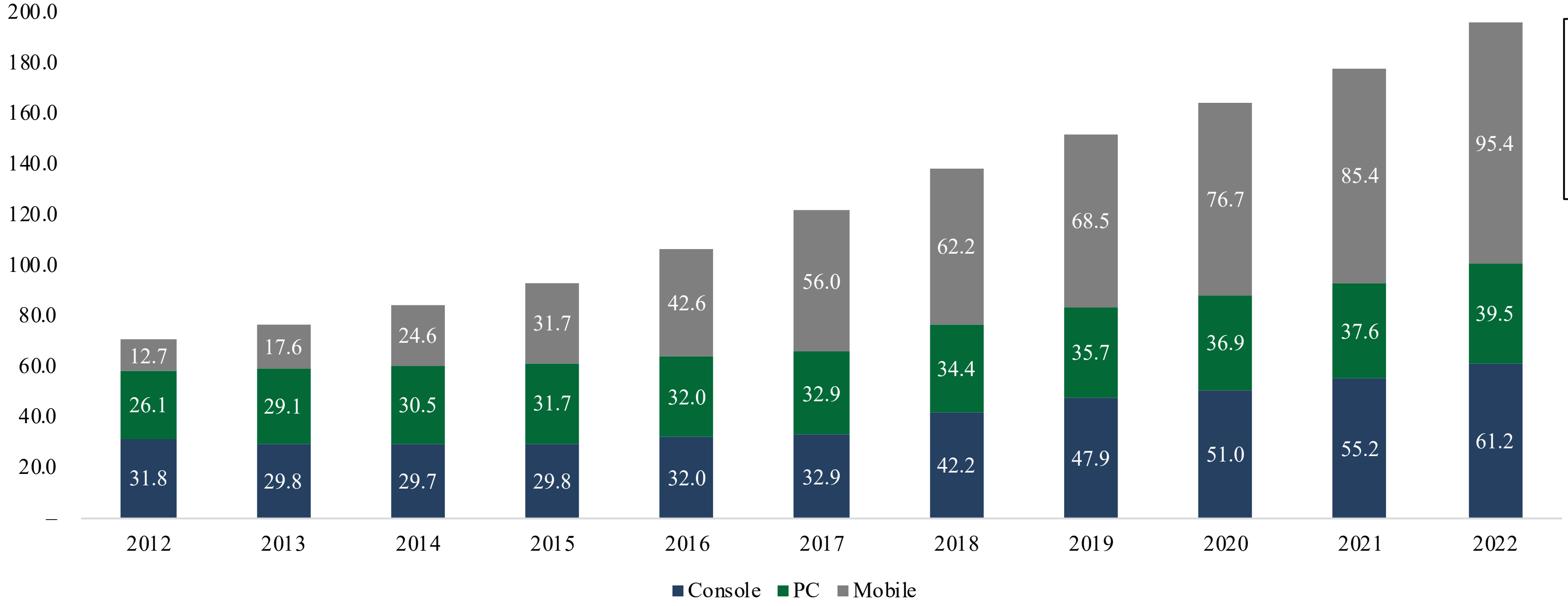
	First-Party		Third-Party	
	Digital	Physical	Digital	Physical
Retail ASP of New Game	$60.00	$60.00	$60.00	$60.00
(-) Gross Margin To Retailer	$0.00	($12.00)	$0.00	($12.00)
Retailer % Gross Margin on New Game		*20.0%*		*20.0%*
ASP of New Game To Publisher	**$60.00**	**$48.00**	**$60.00**	**$48.00**
(x) % Royalty Rate To Console Maker			30.0%	20.0%
Revenue To Nintendo	**$60.00**	**$48.00**	**$18.00**	**$9.60**
(-) Packaging, Production, Etc.		($3.00)		
Variable Profit To Nintendo	**$60.00**	**$45.00**	**$18.00**	**$9.60**
(-) Cost of Development, Marketing, Etc.	($30.60)	($30.60)		
All-In Profit To Nintendo	**$29.40**	**$14.40**	**$18.00**	**$9.60**
% Margin	*49.0%*	*30.0%*	*100.0%*	*100.0%*

Secular Tailwinds at The Company's Back

Video Game Market Is Growing at a HSD CAGR

- Video games are capturing an increasing share of entertainment mindshare and spending
- Nintendo's growth will be further aided by its expansion into China (the world's second largest gaming market and one in which Nintendo previously didn't have a meaningful presence) through a partnership with Tencent under which the latter will distribute the Switch in the country

Global Video Game Market ($bn)



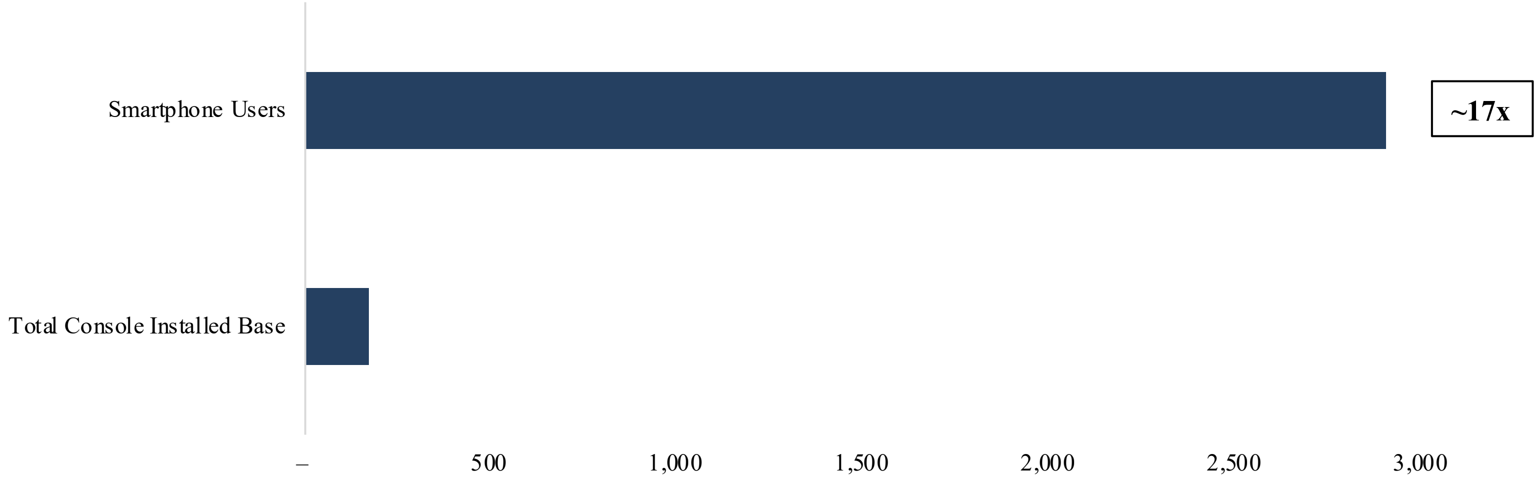
2018-2022 CAGR
Mobile: +11.3%
PC: +3.5%
Console: +9.7%
Total: +9.0%

Source: Newzoo

Expansion Into The Mobile Game Market

Introduction of Iconic Intellectual Property To The Mobile Game Market Significantly Expands Nintendo's TAM

- The mobile game market represents an opportunity for Nintendo to introduce its iconic IP to a user base orders of magnitude larger than the console market
- After a period of initial resistance, Nintendo has begun to enter the mobile game market in meaningful fashion. In a February 2019 investor presentation, Nintendo CEO Shuntaro Furukawa highlighted the mobile business as one of the "three pillars" of the company's strategy
- In their most recent fiscal year, EA derived 16.4% of its revenue from mobile games. In FY2019, only 8.8% of Nintendo's ex-hardware revenue came from mobile, despite the fact that Nintendo's IP is far better suited for mobile games given its experience developing for its handheld platforms (e.g., Game Boy)
- Despite its measured foray into the mobile business to date, the success of the company's earliest set of mobile games demonstrates the enormous potential of Nintendo's IP in the mobile realm
  - *Pokémon Go*: $3bn+ in revenue to-date (note that because Nintendo's ownership of The Pokémon Company is joint, it doesn't recognize the full amount of this in its P&L)
  - *Fire Emblem Heroes*: $400mm+ in revenue to-date



Source: Company filings, Newzoo, Sensor Tower

Valuation

Top-Line Growth, Margin Expansion, and Multiple Re-Rating Drive 75%-110% Upside

- **Switch Hardware Sales**: Installed base reaches 96mm vs. 42mm today
  - Less than the Wii's 102mm lifetime units and DS' 154mm units. As a hybrid home console / handheld, the Switch has the ability to tap into *both* installed bases.
  - Expansion into China adds a significant number of potential users that previous Nintendo consoles weren't able to reach
- **Software Tie Ratio**: 9.1 cumulative games sold for each Switch in the installed base by 2022 vs. cumulative tie ratios of 9.1 for the Wii and 9.6 for the GameCube
- **Digital Mix**: Mix of game units sold digitally increases by 500bps per year. First-party vs. third-party mix remains roughly constant.
- **Margins**: Margins and unit economics modeled consistent with the unit economics presented previously. Further assume a 7.5% one-time decrease in hardware ASP and a 200bps in hardware margins.
- **Nintendo Switch Online Penetration**: 35% attach rate at current ASP. Give no credit to a potential ASP increase despite NSO being currently priced at ~1/3 of Sony and Microsoft's comparable offerings.
- **Mobile**: Mobile business revenue roughly doubles from ¥46bn in 2018 to ¥94bn by 2022 (37.7% CAGR over last 2 years)
- **Multiple**: 13.0x, representing a premium to today's multiple (given the shift to a less cyclical business model) but still a discount to the average of publicly-traded third-party video game publishers.
- Conservatively value Nintendo's hidden balance sheet assets (Niantic, Seattle Mariners) at carrying value

Risk/Reward	Base	Bull	Bear
2022 EBITDA	499,161	585,319	309,454
Multiple	13.0x	14.0x	7.0x
Enterprise Value	**6,489,087**	**8,194,460**	**2,166,176**
Net Cash and Investments (2021 YE)	1,626,288	1,682,630	1,558,776
Equity Method Earnings @ 20x	200,000	200,000	200,000
Equity Value	**8,315,375**	**10,077,089**	**3,924,953**
Diluted Shares (2021 YE)	119.1	119.1	119.1
Equity Value Per Share	**¥69,804**	**¥84,593**	**¥32,948**
Cumulative Dividends Per Share	¥3,499	¥4,006	¥2,870
Total Shareholder Return	**¥73,303**	**¥88,599**	**¥35,819**
% Upside (Downside)	*72.9%*	*109.0%*	*(15.5%)*
% IRR (3 Years)	*20.0%*	*27.9%*	*(5.5%)*

Source: Company filings, proprietary estimates

Long: Nintendo (7974.JP) | 75% Upside

Shinzo Abe, Prime Minister of Japan, dressed as Super Mario at the closing ceremony of the 2016 Summer Olympic Games