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Δ DEFENDANT Δ
United States District Court
Northern District of California
Case No. 4:20-cv-05640-YGR
Case Title *Epic Games, Inc. v. Apple, Inc.*
Exhibit No. DX-5523
Date Entered
Susan Y. Soong, Clerk
By: , Deputy Clerk

Microsoft

CY2019 Game Industry Profit

Gaming Business Planning & Strategy Team
May 2020

Microsoft Confidential

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Select Lexicon

Term	Definition(s)
Revenue	**Reported Gaming Software & Services Revenue** • Reported (GAAP or equivalent) calendar-year revenue directly attributable to video game software & services for public companies • Estimated gross revenue (i.e. consumer spend before platform fees and other deductions) for private companies • Includes game video & in-game advertising where applicable (e.g. Zynga serves ads on both Mobile & Browser games, YouTube ads for gaming content) • Excludes non-gaming revenue (e.g. merchandising, theme parks), dedicated Hardware (unless otherwise noted) and all other advertising (e.g. app stores) **Adjusted Gaming Software & Services Net Revenue** • Reported revenue adjusted for platform fees & YoY change in deferred revenue (to avoid double-counting & approximate actual consumer spend) • For platform companies (e.g. Apple, Valve), adjusted revenue includes only the retained share of 3P transactions, not gross consumer spend
Profit	**Reported Gaming Software & Services Operating Profit (a.k.a. Earnings Before Interest & Taxes, "EBIT")** • Pre-tax operating profit taken by publishers, developers, & platform-holders; excludes used games & retail margin • Reported (GAAP or equivalent) calendar-year EBIT directly attributable to video game software & services for public companies • Estimated operating profit (based on comparable public companies with appropriate adjustments) for private companies **Adjusted Gaming Software & Services Operating Profit** • Adjusted EBIT for any change in deferred revenue/costs as well as a proportional share of any unallocated operating expenses (based on adjusted revenue)
Segments	• **Console**: Games & services on home consoles (e.g. Xbox & PlayStation) and handheld/hybrid consoles (e.g. Nintendo Switch) • **PC Client**: Games & associated services executing locally on a PC form factor (e.g. League of Legends); primarily Windows • **Mobile**: Games executing locally on a phone/tablet form factor (e.g., Clash of Clans); primarily iOS and Android • **Browser**: Games operating entirely in the browser (e.g., Zynga); though technically device agnostic, most consumption happens on a PC form factor • **Cloud Streaming:** Games & associated services delivered through cloud compute from a data center to the end device (e.g. Project xCloud, Google Stadia) • **Game Video**: Game-related internet video including streaming (e.g., Twitch) and video-on-demand (e.g., YouTube); includes both browser & application
Business Model	• **Pay-to-Play (P2P)**: Games with an up-front pay gate that provides perpetual access; includes spend on base game and subsequent add-ons (e.g., Halo) • **Free-to-Play (F2P)**: Games with no pay gate; includes all transactions and advertising associated with those titles (e.g., Fortnite) • **Subscriptions (Subs)**: Games and services with a time-based access gate or content portfolio (e.g., Xbox Live Gold, World of Warcraft, EA Access)
Sources	Public filings (e.g. 10-K), Wall Street equity research, S&P Capital IQ, Alpha Sense, internal Microsoft estimates

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Executive Summary

- [redacted]
- Publishers captured the majority of total industry profit (66%); platforms in closed ecosystems/networks (e.g., Console, Mobile, Browser) generated 39-46% of segment profits while platforms in open ecosystems (i.e. PC Client) generated only 5% of segment profit
- Platforms' relatively low share of PC Client segment profit (5%) reflects revenue flowing directly from consumers to publishers—83% of worldwide PC Client revenue
- Free-to-Play remains the industry's primary business model (70% of total revenue), is the largest driver of profit (74% of total), and sees the healthiest profit margins (32%), a function of publishers' ability to invest with demonstrated market success
- Tencent[1] is the largest company in the industry, generating an estimated $19.4B in revenue and $6.3B in profit
- In addition to Tencent, 9 other companies generated more than $1B in profit[1] from software & services including Apple ($5.2B), Sony ($4.1B), Google ($3.2B), Netease ($2.4B), Nintendo ($2.3B), Microsoft [redacted], Activision Blizzard ($1.6B), EA ($1.2B), and Epic ($1.0B)[2]
- Dedicated hardware [redacted] remains a key enabler of software & services participation for Sony, Nintendo, and Microsoft

[1] Tencent revenue & profit figures above are adjusted to reflect intra-value chain revenue & profit shares (e.g. platform fees for digital app stores), exclude non-gaming revenue, and adjust for YoY change in deferred revenue. As such, they will not tie to Tencent's reported revenue & profit. See slide 40 for more detail on Tencent's gaming P&L. [2] Reflects Fortnite, Rocket League, and Epic Games Store only; excludes Unreal Engine, etc. [3] Consumer spend in CY2019; hardware manufacturers recognized [redacted] of this as reported revenue.

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Revenue & Profit by Segment

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CY2013-CY2019: Software & Services Revenue Growth

Software & Services (SW&S) has grown at 16% CAGR since CY2013

USD Billions; Software & Services ("SW&S") only, excludes dedicated Hardware

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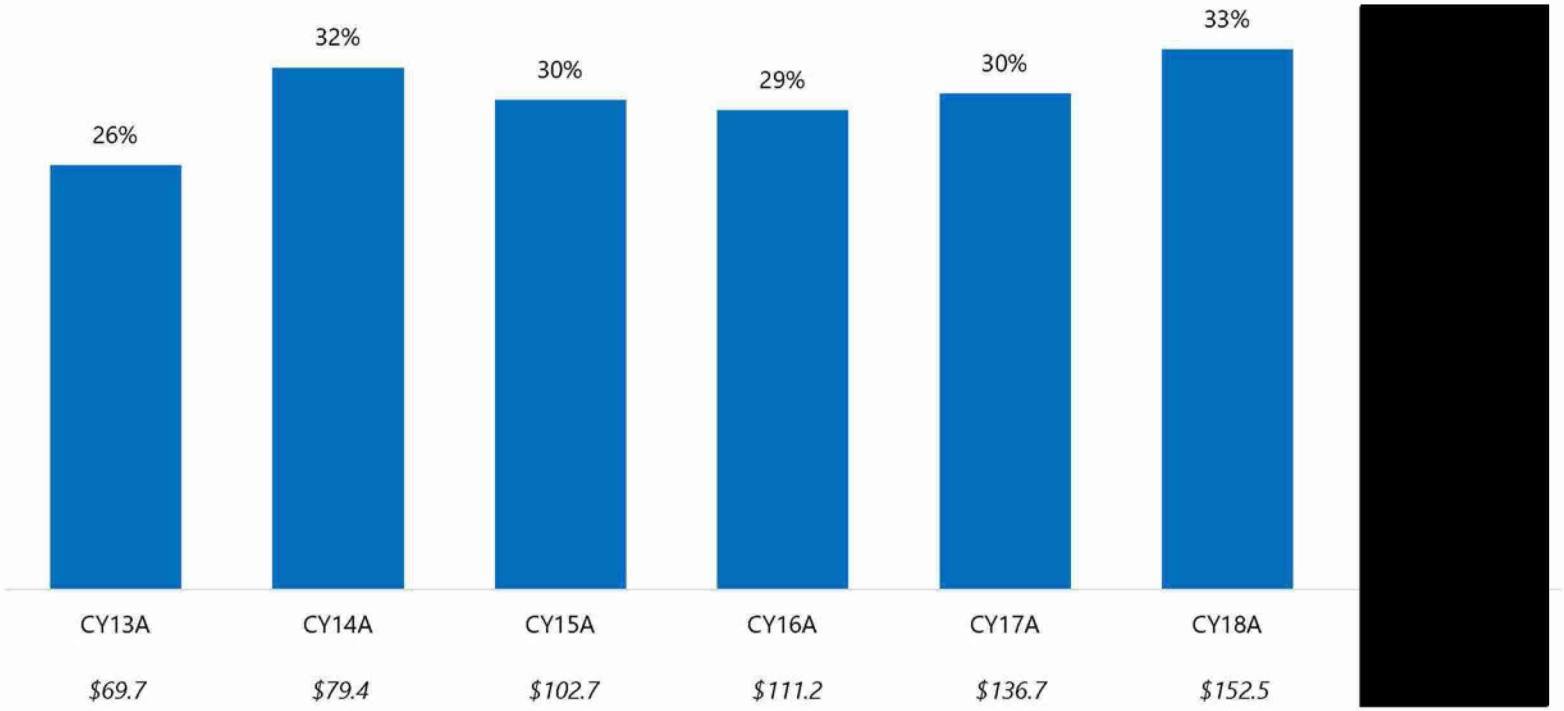
CY2013-CY2019 Game Industry Profit Margins

[redacted]

USD Billions; Software & Services ("SW&S") profit only, excludes Cloud Streaming and dedicated Hardware profit



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CY2013-CY2019 Game Industry Operating Profit

Operating profit has grown steadily as revenues have increased

USD Billions; Software & Services ("SW&S") profit only, excludes Cloud Streaming and dedicated Hardware profit

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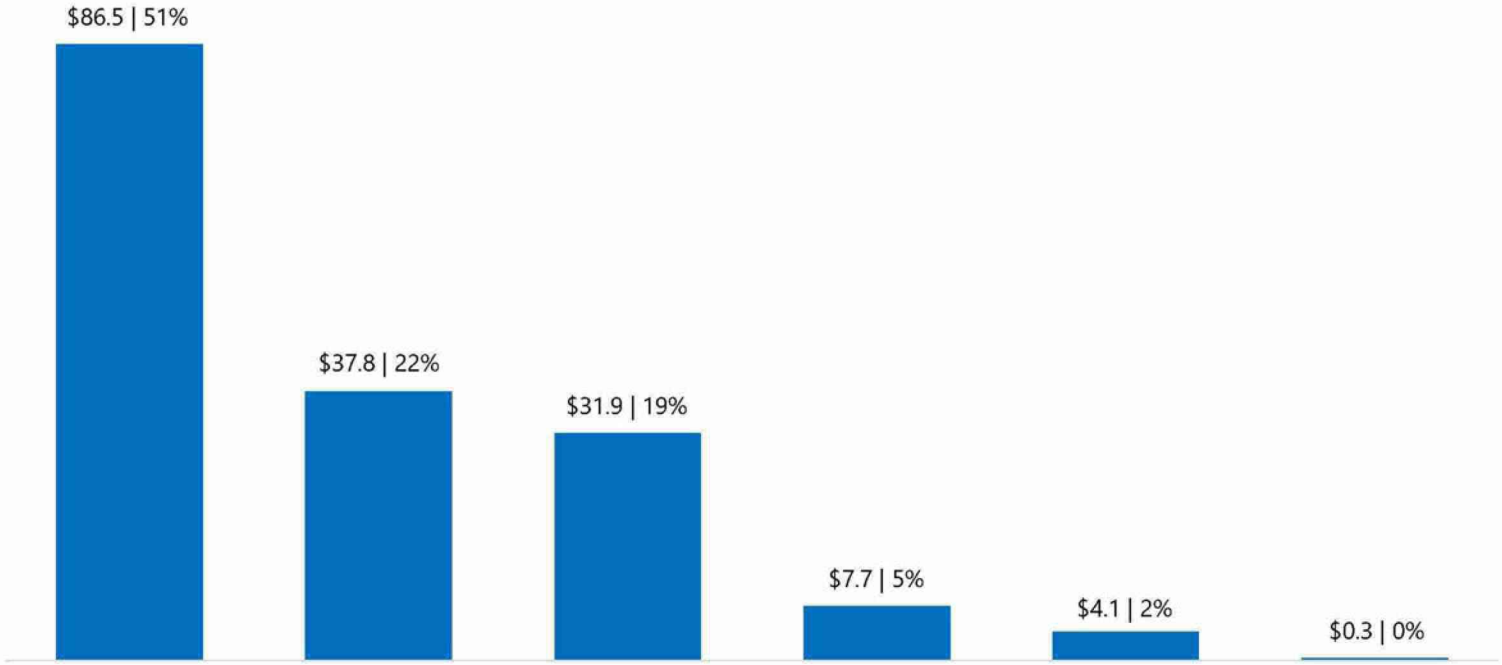
CY2019 Game Industry Revenue by Segment

Mobile saw surge in growth, generating more than half of the industry revenue in CY2019, while Console declined as expected from drop in Fortnite

USD Billions | Share of Total; $168.4B Software & Services ("SW&S") only, [redacted]



	Mobile	Console	PC Client	Game Video	Browser	Cloud Streaming
YoY Growth %	*19%*	*(5%)*	*4%*	*56%*	*(8%)*	*167%*

Source: CY2019 Game Industry Sizing

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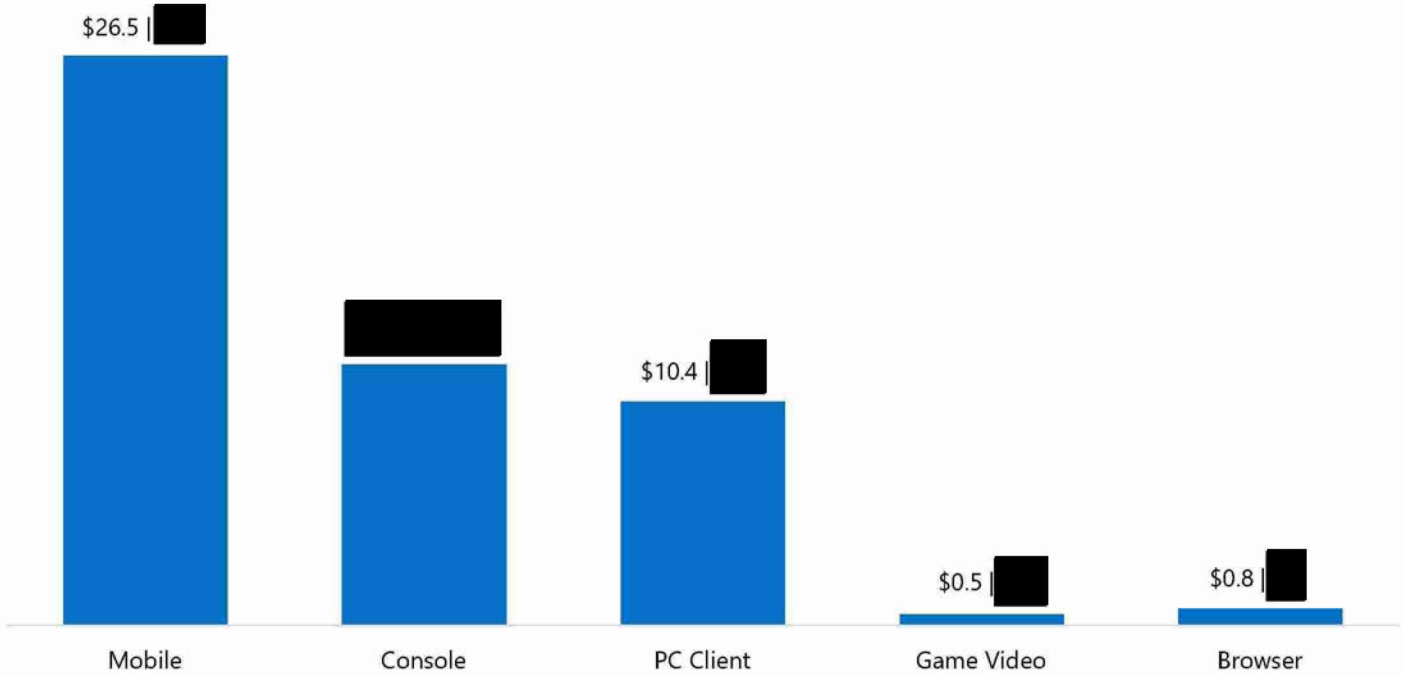
CY2019 Game Industry Profit by Segment

Mobile continues to lead in industry profit by segment, while overall industry profit margin is [redacted]



	Mobile	Console	PC Client	Game Video	Browser
Profit Margin	*31%*	*32%*	*33%*	*7%*	*19%*

[1] [redacted]
[redacted] 2] Assumes cloud streaming had no meaningful profit in CY2019

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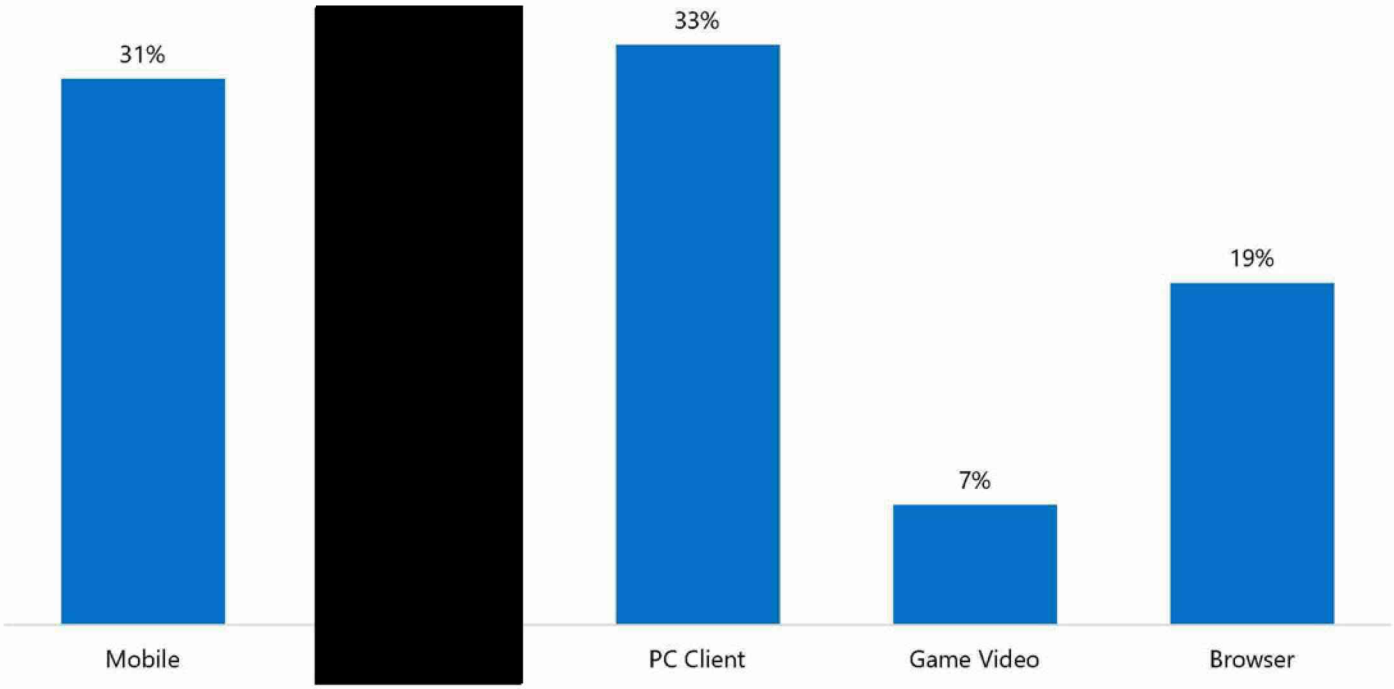
CY2019 Profit Margin by Segment

PC exhibited the highest segment profit margin in CY2019, margins remained stable YoY across all segments except Console

[redacted]



	Mobile	[redacted]	PC Client	Game Video	Browser
YoY Δ	*(1 ppt)*	*(6 ppt)*	*(2 ppt)*	*0 ppt*	*0 ppt*

[1] YoY figures based on restated CY2018 figures.

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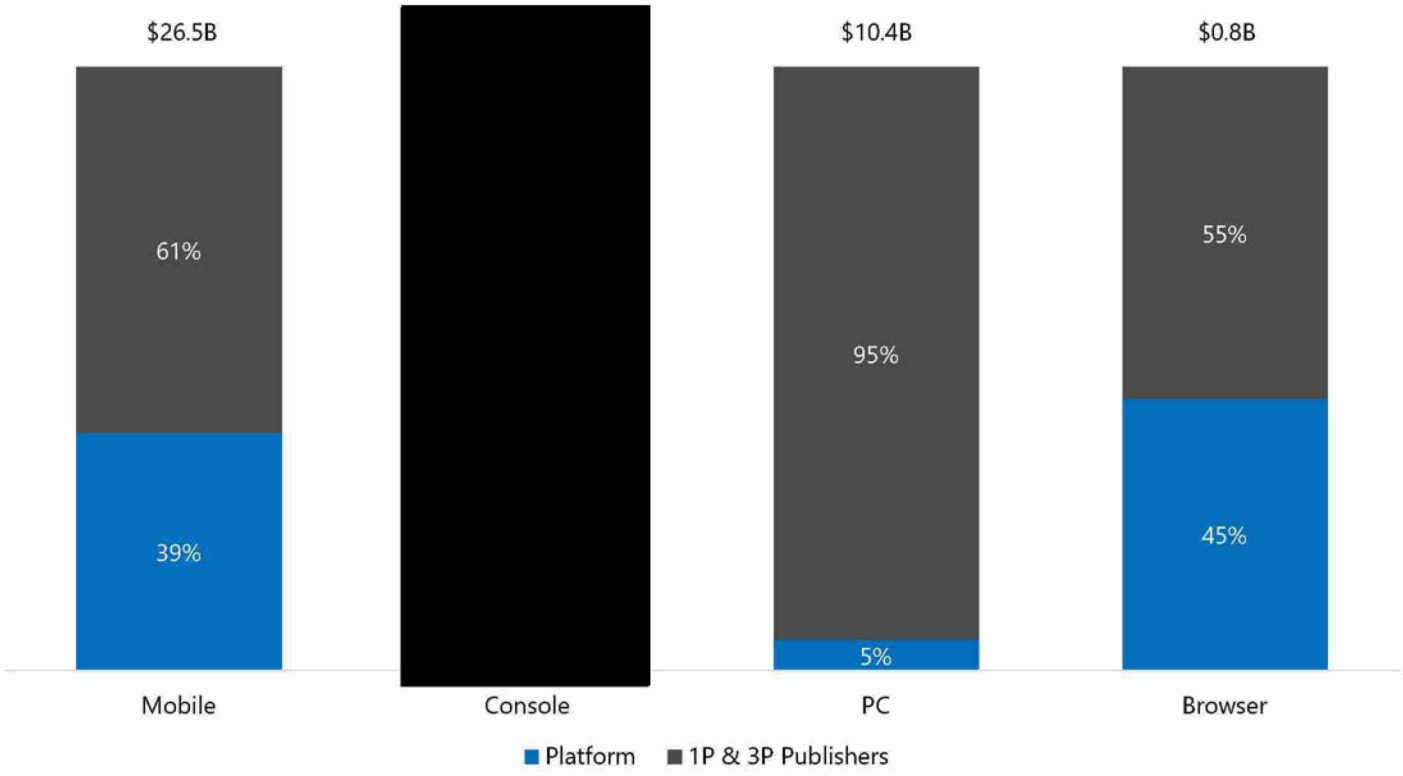
Publisher vs Platform Share of Profit by Segment

Platform-holders in closed device ecosystems & networks capture meaningful profit share (39%-46%), while open ecosystems favor publishers

USD Billions; [redacted] Software & Services ("SW&S") profit only, excludes $0.5B in game video profit and dedicated Hardware profit



Note: Platform revenue and profit includes subscriptions, platform share from digital store, and manufacturing royalties on physical discs but excludes first-party publishing (e.g. Xbox Game Studios).

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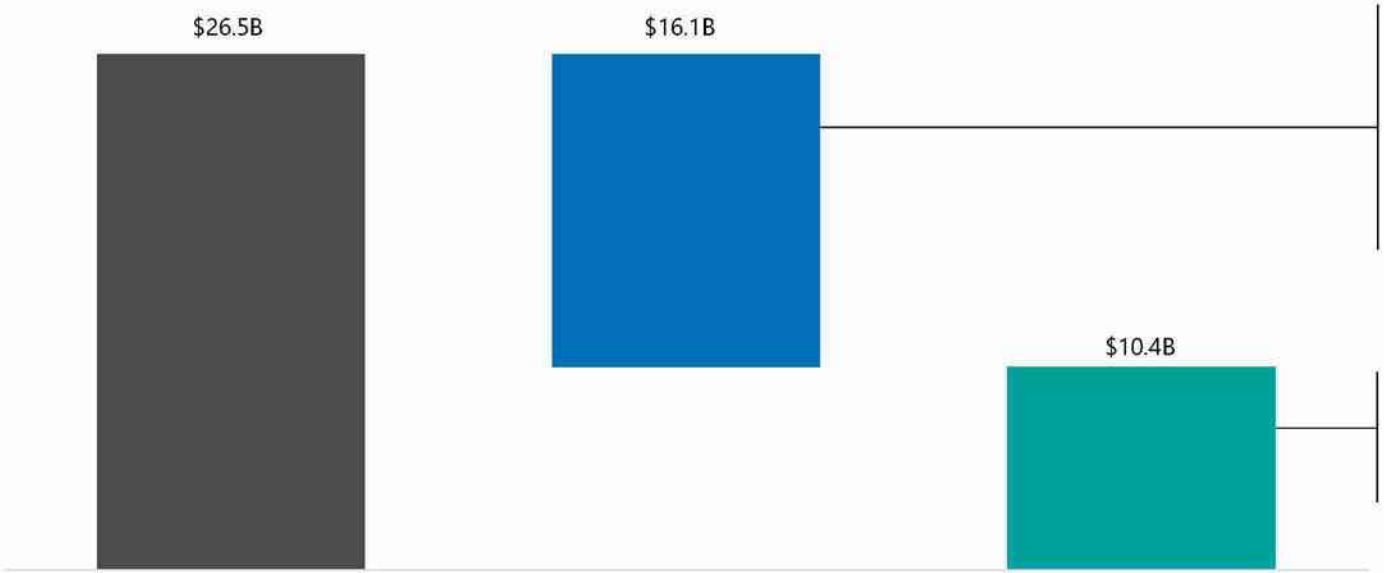
Mobile: Flow of Profit by Platform and Publisher

Mobile platforms remained profit leaders despite declined share of profit YoY

USD Billions; $26.5B Mobile Software & Services ("SW&S") profit



Publishers

Tencent	$1.5B
Netease	$1.4B
Supercell	$0.6B
Activision Blizzard	$0.5B
15 Others w/ >$0.1B	$3.1B
Others[1]	$9.1B

Platforms

Apple	$5.2B
Google	$2.7B
Tencent	$2.5B

	Total Mobile Profit	1P & 3P Publisher Profit	Platform Profit
Share of Segment Profit:	100%	61%	39%
Segment Margin:	31%	30%	38%

Note: Platform revenue and profit includes subscriptions, platform share from digital store but excludes first-party publishing (e.g. Tencent 1P). [1] Includes $8.8B of estimated unobserved profit. For more details on the methodology used to calculate this unobserved profit, see slide 30.

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Console: Flow of Profit by Platform and Publisher

On Console, publishers take a larger share of profit on an aggregate level, but platforms (e.g. Sony, Microsoft) continue to yield higher margins

[redacted]

Publishers

Nintendo	$1.9B
Sony	$1.3B
EA	$0.9B
Epic Games	$0.6B
Activision Blizzard	$0.6B
Others[1]	$1.3B

Platforms

Sony	$2.8B
Microsoft	[redacted]
Nintendo	$0.4B

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PC Client: Flow of Profit by Platform and Publisher

[redacted]

Publishers

Tencent	$2.3B
Netease	$1.0B
Nexon	$0.7B
Activision Blizzard	$0.5B
Valve 1P	$0.4B
EA	$0.2B
NCSoft	$0.2B
Epic 1P	$0.1B
Others[1]	$4.3B

Platforms

Valve 3P	$0.5B
Microsoft 3P	[redacted]
Epic 3P	$0.0B
CD Projekt 3P	$0.0B

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Revenue by Sales Channel

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Console: Revenue by Sales Channel

In Console, Platform Digital captured the majority of segment revenue as used and retail sales declined

[redacted]

Platform Digital

Sony	$11.2B
Microsoft	[redacted]
Nintendo	$1.5B

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PC Client: Revenue by Sales Channel

In PC Client, direct to consumer captured more than 83% of spend, while platforms generated ~15% of sales

[redacted]

Platform Digital

Valve 3P	$4.5B
Microsoft 3P	[redacted]
Epic 3P	$0.3B
GOG.com 3P	$0.0B

Direct to Consumer

Tencent	$7.2B
Netease	$1.9B
Nexon	$1.7B
ATVI	$1.7B
Valve 1P	$1.3B
EA	$1.0B
Ubisoft	$0.5B
Epic 1P	$0.4B
NCSoft	$0.3B
Other[1]	$10.2B

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Revenue and Profit by Business Model

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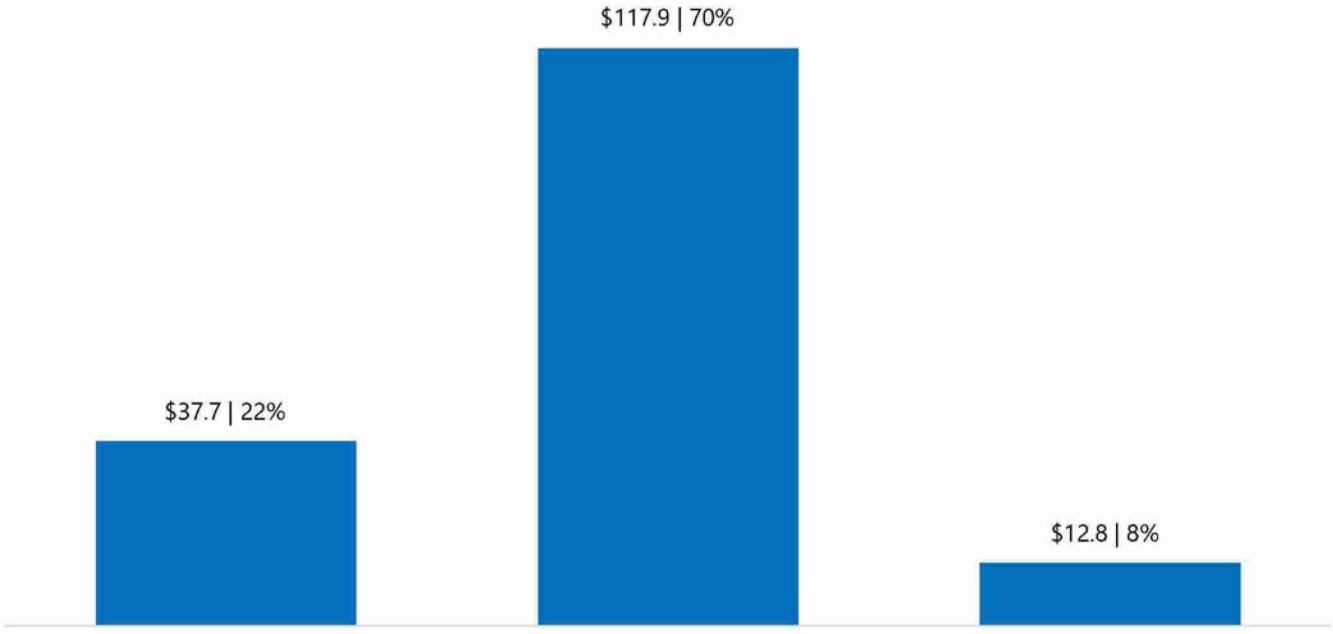
CY2019 Game Industry Revenue by Business Model

F2P continues to be the industry's primary business model, generating 70% of total SW&S revenue

USD Billions; $168.4B Software & Services ("SW&S") only, [redacted]



	P2P	F2P	Subscriptions
YoY Growth %	*(2%)*	*13%*	*37%*

[1] YoY figures based on restated CY2018 figures.

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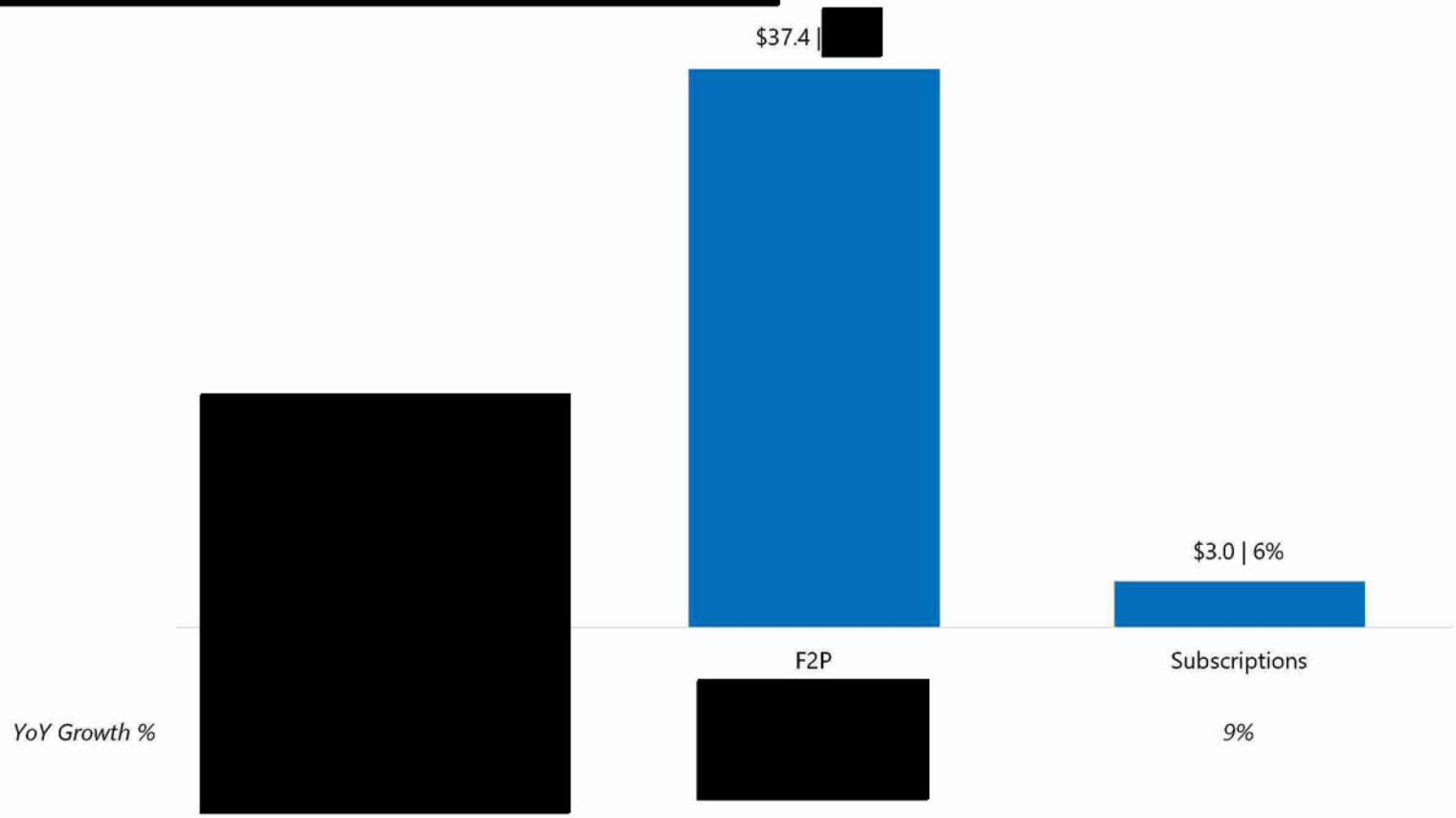
CY2019 Game Industry Profit by Business Model

In CY2019, F2P profit drove [redacted] of total industry profit

[redacted]



[1] YoY figures based on restated CY2018 figures.

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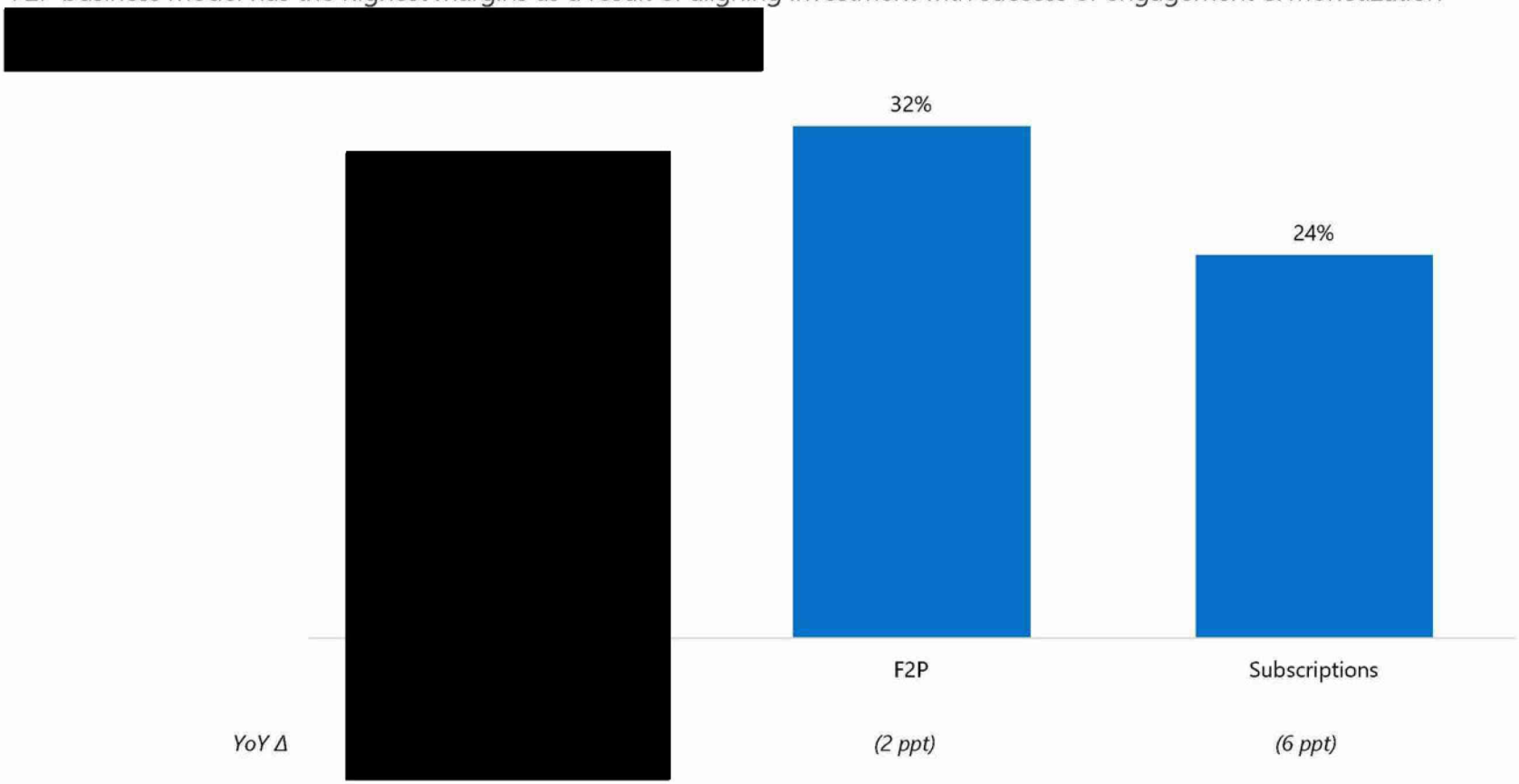
CY2019 Margin by Business Model

F2P business model has the highest margins as a result of aligning investment with success of engagement & monetization



[1] YoY figures based on restated CY2018 figures.

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Company-Specific Analyses

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CY2019 Reported SW&S Revenue vs. Profit Margin by Company (1 of 2)

Ten largest companies (ranked by reported revenue) reported an average profit margin of [redacted][1]

Reported Revenue and Profit Margins exclude dedicated Hardware

[1] CY2019 Reported Revenue and Profit; may "double-count" due to various revenue recognition policies (e.g. platform fees for digital app stores) and will not tie to adjusted revenue & adjusted profit.

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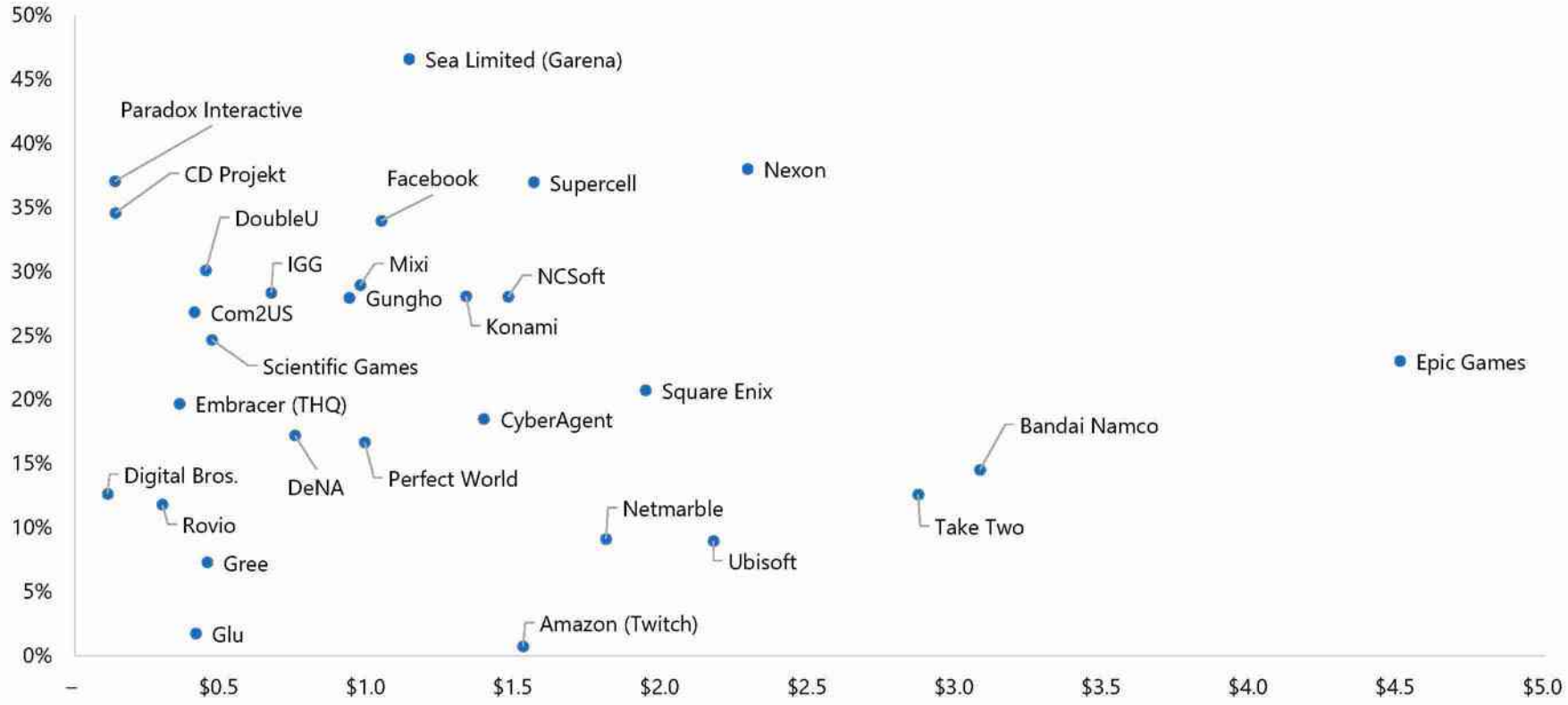
CY2019 Reported SW&S Revenue vs. Profit Margin by Company (2 of 2)

When evaluating profit margin, smaller publishers stand out despite lower reported revenue[1]

Reported Revenue and Profit Margins exclude dedicated Hardware



[1] CY2019 Reported Revenue and Profit; may "double-count" due to various revenue recognition policies (e.g. platform fees for digital app stores) and will not tie to adjusted revenue & adjusted profit.

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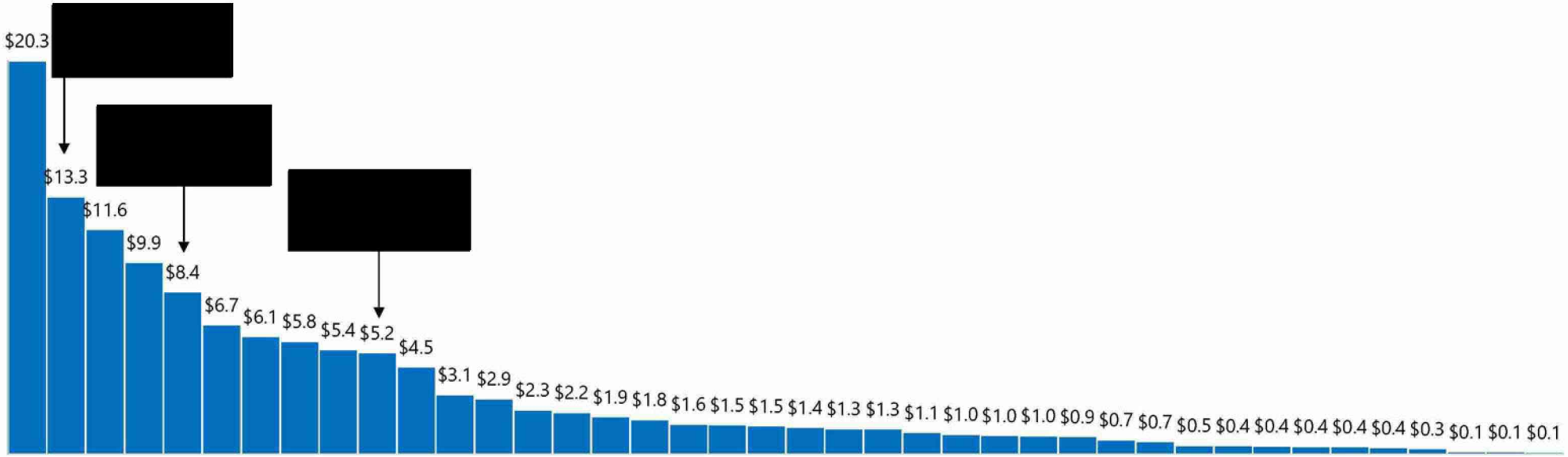
CY2019 Reported Revenue Rank by Company

The top 10 companies [redacted] considered in this sample set accounted for over 55% of total game industry revenue

USD Billions; $106.2B Software & Services ("SW&S") revenue only, excludes $56.8B unobserved revenue[1]



[redacted]

[1] Analysis observes ~66% of SW&S revenue. Estimated unobserved revenue is calculated on a per-segment basis. Revenue figures above are may "double-count" due to various revenue recognition policies (e.g. platform fees for digital app stores) and will not tie to adjusted revenue & adjusted profit.

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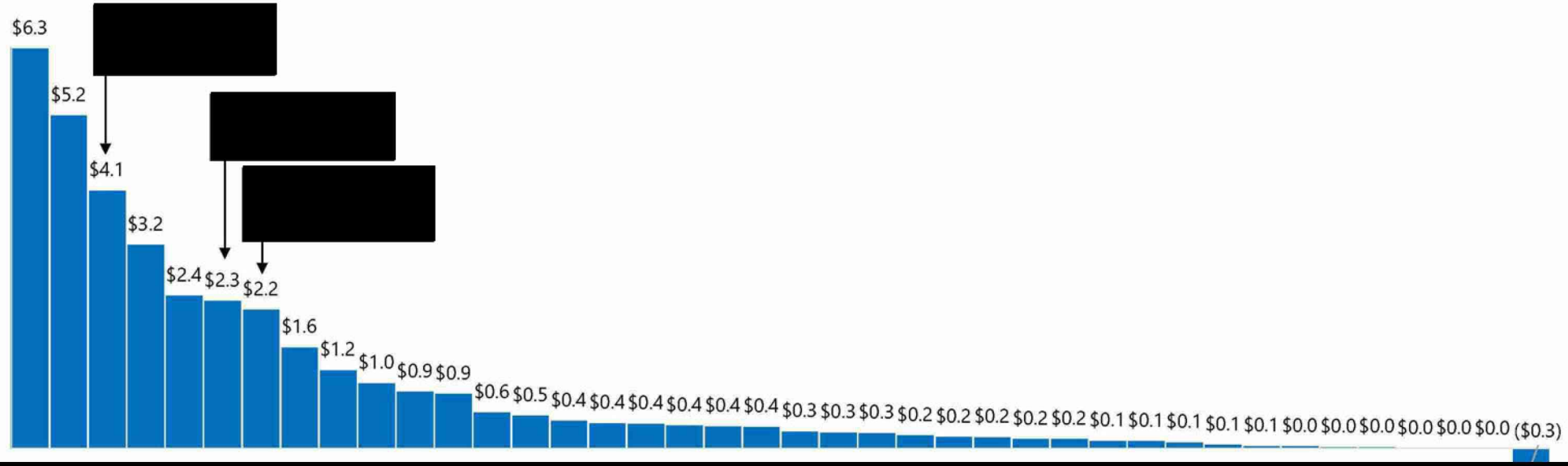
CY2019 Reported Profit Rank by Company

The top 7 companies [redacted] considered in this sample set account for over half of total profit in the game industry

USD Billions; $36.6B Software & Services ("SW&S") profit only, excludes $13.7B unobserved profit[1]



[redacted]

[1] Analysis observes >70% of SW&S profit. Estimated unobserved profit is calculated on a per-segment basis. Profit figures above may "double-count" due to various revenue recognition policies (e.g. platform fees for digital app stores) and will not tie to adjusted revenue & adjusted profit.

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Health of Key Console Players

Robust SW&S profit margins for all key Console players except Ubisoft; Activision Blizzard is the least dependent on Console

USD Billions; excludes dedicated Hardware

	Player	Total Reported CY19 SW&S Revenue	% of Revenue from Console[1]	Total Reported CY19 SW&S EBIT	EBIT Margin (%)
Platform Holders	Sony	$13.3	97%	$4.1	31%
	Microsoft	[redacted]			
	Nintendo	$5.2	93%	$2.3	45%
Pure-Play Publishers	Activision Blizzard	$6.1	33%	$1.6	26%
	EA	$5.4	71%	$1.2	23%
	Epic Games	$4.5	68%	$1.0	23%
	Take Two	$2.9	75%	$0.4	13%
	Ubisoft	$2.2	56%	$0.2	9%

Note: Reported revenue & profit above will not tie to adjusted revenue & adjusted profit margins presented elsewhere in these materials. [1] For platform-holders, defined as the ratio of reported revenue from Console to total reported gaming revenue. For all publishers except Epic Games, defined as the ratio of publicly disclosed Console-attributable "net bookings" (i.e. including impact of change in deferred revenue) to total reported CY19 software & services revenue. Epic Games reported revenue, console share, and profit margin based on internal estimates and comparable public companies.

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Appendices

Appendix 1 | Revenue & Profit by Segment
Appendix 2 | Adjusted Revenue Reconciliation
Appendix 3 | Company Profiles
Appendix 4 | Additional Analysis
Appendix 5 | App Store Profit
Appendix 6 | Console Generation 8 Retrospective

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Appendix 1 | Revenue & Profit by Segment

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Profit Breakdown: Mobile

Analysis observes 60% of Mobile revenue & 67% of Mobile profit

USD Billions

	Net Revenue	Operating Profit	Margin %
1 Consumer Spend + Ads	$86.5		
- Retail Margin			
- Secondary Market			
Adjusted Net Revenue	**$86.5**	**$26.5**	**31%**
% Observed	*60%*	*67%*	
Apple	$11.6	$5.2	45%
Google	$8.0	$2.7	34%
Tencent	$7.7	$2.5	32%
2 **Total Platform**	**$27.3**	**$10.4**	38%
3 Tencent	$4.5	$1.5	32%
Total 1P Publishing	**$4.5**	**$1.5**	**32%**
Netease	$3.3	$1.4	41%
ATVI	$1.5	$0.5	32%
Netmarble	$1.2	$0.2	13%
Bandai Namco	$1.2	$0.2	21%
Supercell	$1.1	$0.6	53%
Zynga	$1.0	($0.0)	-3%
Sea Limited (Garena)	$0.9	$0.4	46%
CyberAgent	$0.9	$0.2	27%
Epic	$0.8	$0.3	32%
Square Enix	$0.8	$0.1	17%
NCSoft	$0.7	$0.3	35%
Mixi	$0.7	$0.2	25%
Gungho	$0.6	$0.3	40%
Konami	$0.6	$0.2	33%
EA	$0.5	$0.1	23%
IGG	$0.5	$0.2	40%
Perfect World Entertainment	$0.4	$0.1	23%
Nexon	$0.4	$0.2	41%
Glu Mobile	$0.3	$0.0	2%
DoubleU Games	$0.3	$0.1	43%
DeNA	$0.3	$0.1	22%
Com2US	$0.3	$0.1	38%
Scientific Games	$0.3	$0.1	35%
Nintendo	$0.2	$0.1	24%
Gree	$0.2	$0.0	10%
Rovio	$0.2	$0.0	8%
Take Two	$0.1	$0.0	12%
Ubisoft	$0.1	$0.0	11%
Microsoft	$0.1	($0.0)	-23%
Paradox Interactive	$0.0	$0.0	4%
4 Unobserved Publishers	$35.0	$6.8	25%
Total Publisher	**$54.7**	**$14.6**	**27%**

[1] Selection included all mobile publishers with <$500M of adjusted revenue in our coverage universe.

Commentary

1. Source: IDG, NewZoo, AppAnnie
2. Platform revenue & margins are net of publisher share payout for digital transactions and may differ from reported margins
3. Tencent 1P Mobile revenue includes global iOS revenue per AppAnnie and estimated Tencent revenue from all Chinese Android app stores
4. Applied selected observed publisher margins (P2P: -13%, F2P: 27%) to $35B in unobserved revenue[1]

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Profit Breakdown: Console

Analysis observes 90% of Console revenue & 95% of Console profit

USD Billions

	Net Revenue	Operating Profit	*Margin %*
1 Consumer Spend + Ads	$37.8		
2 - Retail Margin	($4.5)		
3 - Secondary Market	($2.1)		
Adjusted Net Revenue	**$31.1**	[redacted]	
4 *% Observed*	*90%*		
Sony	$5.3	$2.8	*53%*
Microsoft	[redacted]		
Nintendo	$0.9	$0.4	*45%*
5 **Total Platform**	[redacted]		
Nintendo	$3.8	$1.9	*49%*
Sony	$1.9	$1.3	*66%*
Microsoft	[redacted]		
Total 1P Publishing			
EA	$3.8	$0.9	*23%*
Take Two	$2.1	$0.2	*12%*
Epic	$2.0	$0.6	*32%*
ATVI	$1.9	$0.6	*32%*
Ubisoft	$1.1	$0.1	*11%*
Bandai Namco	$1.0	$0.1	*14%*
Square Enix	$0.6	$0.1	*17%*
Konami	$0.3	$0.1	*33%*
Embracer Group (THQ)	$0.2	$0.0	*20%*
Perfect World Entertainment	$0.1	$0.0	*16%*
CD Projekt	$0.1	$0.0	*39%*
Paradox Interactive	$0.0	$0.0	*26%*
Digital Bros (505 Games)	$0.0	$0.0	*8%*
Unobserved Publishers	$3.0	$0.6	*20%*
6 **Total Publisher**	**$16.2**	**$3.5**	***22%***
Nintendo	$5.9	$0.3	*6%*
Sony	$5.1	($1.7)	*-34%*
Microsoft	[redacted]		
7 **Total Hardware**			

Note: Operating Profit Margin % calculated as a percentage of Adjusted Net Revenue. Overall Console segment Operating Profit Margin [redacted]

Commentary

1. Source: IDG, NewZoo, PwC, SuperData
2. 25% retail margin for software and 20% retail margin for subscriptions sold through retailers (60% of P2P & 22% of Subscriptions).
3. Source: GameStop financials and analyst commentary
4. Observed revenue calculation deducts $1.5B of retail disc royalties from Platform revenues (to avoid double-counting)
5. Platform margins are net of publisher share payout for digital transactions and may differ from reported margins
6. Applied observed publisher margins (P2P: 20%, F2P: 22%, Subs: 23%) to $3B in unobserved revenue
7. Hardware sales and profit noted below the line

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Profit Breakdown: PC Client

Analysis observes 63% of PC Client revenue & 62% of PC Client profit

USD Billions

		Net Revenue	Operating Profit	*Margin %*
1	Consumer Spend + Ads	$31.9		
2	- Retail Margin	($0.2)		
	- Secondary Market			
	Adjusted Net Revenue	**$31.7**	**$10.4**	***33%***
	% Observed	*63%*	*62%*	
	Valve	$1.2	$0.5	*41%*
	Microsoft	[redacted]		
3	CD Projekt	$0.1	$0.0	*2%*
	Epic	$0.0	$0.0	*41%*
4	**Total Platform**	[redacted]		
5	Tencent	$7.2	$2.3	*32%*
	Valve	$1.3	$0.4	*32%*
	Epic	$0.4	$0.1	*32%*
	Microsoft	[redacted]		
	CD Projekt	$0.1	$0.0	*39%*
	Total 1P Publishing	[redacted]		
	Netease	$1.9	$1.0	*54%*
	Nexon	$1.7	$0.7	*41%*
	ATVI	$1.7	$0.5	*32%*
	EA	$1.0	$0.2	*23%*
	Ubisoft	$0.5	$0.1	*11%*
	Take Two	$0.5	$0.1	*12%*
	NCSoft	$0.4	$0.2	*35%*
	Perfect World Entertainment	$0.4	$0.1	*16%*
	Square Enix	$0.4	$0.1	*17%*
	Bandai Namco	$0.3	$0.0	*15%*
	Embracer Group (THQ)	$0.2	$0.0	*20%*
	Paradox Interactive	$0.1	$0.0	*31%*
	Sea Limited (Garena)	$0.1	$0.1	*46%*
	Netmarble	$0.1	$0.0	*12%*
	Digital Bros (505 Games)	$0.0	$0.0	*8%*
	Gungho	$0.0	$0.0	*40%*
6	Unobserved Publishers	$11.8	$4.0	*34%*
	Total Publisher	**$21.1**	**$7.0**	***33%***

Note: Operating Profit Margin % calculated as a percentage of Adjusted Net Revenue. Overall PC Client segment Operating Profit Margin is 33%. [1] Selected publishers include ATVI, Nexon, EA, Ubisoft, NCSoft, Square Enix, Take Two, Changyou, Bandai Namco, Netmarble, Perfect World Entertainment, Embracer Group, Paradox Interactive, Sea Limited, Digital Bros, & Gungho

Commentary

1. Source: IDG, NewZoo, PwC, SuperData
2. 25% retail margin for software sold through retailers (12% of P2P)
3. Included Epic's PC store under platforms captured starting in 2019
4. Platform margins are net of publisher share payout for digital transactions and may differ from reported margins
5. Tencent PC Client revenue is considered 1P given their ownership of WeGame and publisher-of-record status for licensed IP (e.g. Tencent operates the PRC version of *PlayerUnknown's Battlegrounds*)
6. Applied selected observed publisher margins (P2P: 21%, F2P: 36%, Subs: 27%) to $11.8B in unobserved revenue[1]

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Profit Breakdown: Browser

Analysis observes 43% of Browser revenue & 58% of Browser profit

USD Billions

		Net Revenue	Operating Profit	*Margin %*
1	Consumer Spend + Ads	$4.1		
	- Retail Margin			
	- Secondary Market			
	Adjusted Net Revenue	**$4.1**	**$0.8**	*19%*
	% Observed	*43%*	*58%*	
2	Facebook	$1.0	$0.4	*34%*
	Total Platform	**$1.0**	**$0.4**	***34%***
	DeNA	$0.3	$0.0	*15%*
	Square Enix	$0.2	$0.0	*17%*
	Gree	$0.1	$0.0	*7%*
	Zynga	$0.1	($0.0)	*-3%*
	Scientific Games	$0.1	$0.0	*35%*
3	Unobserved Publishers	$2.4	$0.3	*14%*
	Total Publisher	**$3.1**	**$0.4**	***14%***

Commentary

1. Source: IDG, NewZoo, PwC, SuperData
2. Platform margins are net of publisher share payout for digital transactions and may differ from reported margins
3. Applied observed publisher margins (F2P: 14%) to $2.4B in unobserved revenue

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Profit Breakdown: Game Video

Analysis observes 49% of Game Video revenue and 100% of Game Video profit

	Gross Revenue	TAC	Net Rev ex-TAC	Operating Profit	*Margin %*
1 Google	$2.0	($0.4)	$1.5	$0.5	*26%*
Amazon	$1.8	($0.2)	$1.5	$0.0	*1%*
2 Unobserved Players	$3.9	–	$0.7 [1]	–	*0%*
Total Players	**$7.7**	**($0.7)**	**$3.8**	**$0.5**	***7%***

Commentary

1. Estimated YouTube & Twitch net revenue per public filings and Wall Street research
2. Assumes no meaningful profit for other players in the segment; preliminary research indicates most Chinese players are running at close to breakeven

[1] For Unobserved Players, Net Revenue ex-TAC represents estimated gross profit per equity research. Given that ~80% of this category is based in China, the monetization & flow of funds mechanics may be different for these game video players.

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Browser: Flow of Profit by Platform and Publisher

Browser continues to be a declining segment and exhibits the lowest segment margin overall (19%)

USD Billions; $0.8B Browser Software & Services ("SW&S") profit

	Total Browser Profit	1P & 3P Publisher Profit	Platform Profit
Share of Segment Profit:	100%	55%	45%
Segment Margin:	19%	14%	34%

Note: Platform revenue and profit includes subscriptions, platform share from digital store, and manufacturing royalties on physical discs but excludes first-party publishing (e.g. Xbox Game Studios).
[1] Includes $0.3B of estimated unobserved profit. For more details on the methodology used to calculate this unobserved profit, see slide 32.

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Appendix 2 | Adjusted Revenue Reconciliation

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Platform Holder Adjusted SW&S Net Rev Reconciliation (USD Billions)

Analysis adjusts for various revenue recognition methodologies and hardware revenue across platform holders

Platform Holder	Reporting Segment(s)	CY19 Reported Revenue	Total Segment Adjustments	Description of Adjustments	CY19 Adj. Software & Services Net Revenue
Tencent	Value-Added Services	$20.3	($0.8)	Excludes mobile platform fees (e.g. iOS) and income from associates (which co-mingles gaming & non-gaming income). Adds back YoY change in deferred revenue to better align reported revenue with CY18 consumer spend.	$19.4
Apple	Services	$11.6	-	Apple does not report iOS App Store as a separate segment. Gaming revenue estimated per AppAnnie. Reported revenue includes only platform share (30%) and excludes publisher share (70%) as confirmed via public filings. Excludes Apple Arcade given small size.	$11.6
Sony	Gaming & Network Services	$18.8	($11.3)	Excludes hardware (e.g. PlayStation 4, PS Vita) and accessories (controllers, PSVR). Also excludes advertising from digital store, retail disc royalties and third-party publisher share of publicly disclosed digital transactions (i.e. 70%) to avoid double-counting.	$7.5
Alphabet	Google	$9.9	($0.4)	Google Play gaming revenue estimated per AppAnnie and includes only platform share (30%). YouTube revenue based on public filings and allocated to Gaming via Newzoo survey data, adjusted for total acquisition cost (TAC). Stadia revenue estimated per IDG research.	$9.5
Microsoft	[redacted]				
Nintendo	All, excluding "Playing Cards"	$11.2	($6.2)	Excludes hardware (e.g. Switch) and accessories. Also excludes mobile platform fees, advertising from digital store, retail disc royalties and third-party publisher share of estimated (per equity research) digital transactions (i.e. 70%) to avoid double-counting.	$5.0

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Appendix 3 | Company Profiles

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Profile: Microsoft

[redacted]

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Profile: Sony

Segment	1 Reported Revenue[1]	2 Adjusted Revenue	Gross Profit	3 Operating Profit	Operating Margin % (Net)
1P Console Software	$1,921	$1,921	$1,591	$1,269	66%
3P Console Software	$8,589	$3,001	$2,117	$1,614	54%
Console Subscriptions	$2,402	$2,295	$1,560	$1,176	51%
Cloud Streaming[2]	$359	$273	N/A[3]	N/A[3]	N/A[3]
Console Hardware	$5,071	$5,071	($827)	($1,702)	(34%)
Total	**$18,341**	**$12,561**	**$4,442**	**$2,357**	**19%**
SW&S Only	**$13,270**	**$7,490**	**$5,269**	**$4,059**	**54%**

Methodology:

1. Obtain revenue & profit for the Game & Network segment from public financials
2. [redacted]
3. Allocate publicly disclosed R&D and implied S&M by Segment Adjusted Revenue

Note: Dollars in Millions. Totals are rounded to the nearest million and may not tie. JPY converted to USD at 12/31/19 spot rate. Excludes $0.4B of ads and non-gaming revenue (see slide 39 for more detail); total G&NS segment reported review is $18.8B. [1] Net of retailer margins. Reflects 100% of consumer spend in Sony digital store; adjusted revenue calculation adjusts for YoY change in deferred revenue and intra-value-chain payments (e.g. app store economics). [2] Includes PSNow subscriptions as well as 1P/3P transactions on games transacted through Sony's streaming service. Given the nascency of the segment, we have captured streaming revenue in our analysis but do not believe Sony drives material profit through streaming at this time. Source: Company filings, IDG Research, Xbox Finance, WWMP. [3] N/A: Not Applicable per footnote 2.

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Profile: Sony Breakdown

CY 2019 Financials Breakdown ($B)

Games & Network Services[1]
$18.8B

Hardware: $3.8B	Game Software: $10.5B	Network: $3.2B[1]	Other: $1.3B
Console Hardware (no accessories)	1P & 3P Physical and Digital Transactions	PS+, PSNow, Advertising, Digital Non-gaming Services	Console Accessories (controllers, PSVR)

Revenue

[redacted]

GM

- *R&D expense publicly disclosed and allocated by segment Adjusted Revenue*
- *S&M calculated by backing out R&D from GM and allocated by segment Adjusted Revenue*

Opex

Games & Network Services Total: $2.4B

Software & Services: $4.1B
Hardware & Accessories[3]: ($1.7B)

AM

Publicly disclosed

Note: Dollars in Billions; reported revenue & profit above includes non-gaming items and will not tie to net revenue & adjusted profit elsewhere in these materials. JPY converted to USD at 12/31/19 spot rate. [1] Includes $0.4B revenue from ads and digital non-gaming services (i.e. PS Vue, PS Video, PS Music). [2] Disclosed PS+ average subscriber count for Q4 CY19. Per public disclosure PSNow has at least 2.2M subscribers. [3] Includes PSVR. Source: Company filings, publicly available information, Xbox Finance, WWMP.

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Profile: Nintendo

Segment	1 Recognized Revenue[1]	Adjusted Revenue	2 Gross Profit	3 Operating Profit	Adj. Profit Margin %
1P Software	$3,821	$3,821	$3,559	$1,865	49%
3P Software	$826	$665	$619	$324	49%
Subscriptions	$227	$227	$150	$79	35%
Mobile	$354	$248	$115	$60	17%
Console/HH Hardware[1]	$5,926	$5,926	$634	$332	6%
SW&S Only	**$5,228**	**$4,960**	**$4,444**	**$2,329**	**47%**
Total	**$11,155**	**$10,886**	**$5,078**	**$2,661**	**24%**

Methodology:

1. Obtained revenue broken out annually by Platform and used Goldman Sachs Research mix to breakout HW/SW, 1P/3P, digital/physical sales. Blended GS and Morgan Stanley Research figures for Nintendo Switch Online
2. Obtained gross margin % for mobile, hardware, subscriptions from Goldman Sachs Research. Split remaining reported Gross Margin across segments proportionally by adjusted revenue
3. Split implied Opex proportionally by Gross Margin.

Note: USD Millions, JPY converted to USD at 12/31/19 spot rate. [1] Net of retailer margins; also excludes revenue & profit from playing cards and IP licensing business ($0.1B). Net revenue reflects YoY change in deferred revenue and intra-value-chain payments. Source: Company filings, publicly available information, Xbox Finance, WW Megapivot, Wall Street research.

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Profile: Google

Key Information

- US-based search company that owns and operates the Google Play store, YouTube, and Stadia
- Google Play continues to be the primary driver of gaming revenue for the company with near-ubiquitous global presence
- Google recently released Stadia, a cloud streaming service, in 2019 with 2 price tiers (Basic and Pro) and a selection of 3P games, along with a 1P controller. The company is working on forming internal studios to develop and publish 1P games

USD Millions	Reported Revenue[1]	Adjusted Revenue	Operating Profit	Operating Profit Margin %
Google Play (1)	$7,954	$7,954	$2,704	34%
YouTube (2)	$1,934	$1,527	$502	33%
Stadia (3)	$11	$11	N/A	N/A
Google Total	**$9,899**	**$9,492**	**$3,206**	**34%**

Methodology:

1. **Play Store**: Obtained gaming-related mobile store adjusted revenues from App Annie and estimated operating profit based on equity research
2. **YouTube**: Built bottoms up model leveraging Google financial disclosures and equity research, estimated % attributable to gaming
3. **Stadia**: Estimated using syndicated research on cloud streaming providers. Assumes no meaningful profit due to relative size and OpEx heavy consumption by segment

Source: Google financial disclosures, App Annie, Wall Street equity research, syndicated research. [1] Reported revenue for the Play Store is considered net revenue, i.e. the 30% platform fee paid by publishers who sell through the Play Store. YouTube reported revenue includes CAC.

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Profile: Tencent

Key Information

- Chinese holding company whose subsidiaries provide social networking, messaging, gaming, multimedia, mobile & PC value-added services, and advertising
- In addition to 1P gaming titles (e.g. *Honor of Kings*, *League of Legends*), owns substantial stakes in many international gaming companies including Supercell (~85%), Epic (48%), Hi-Rez (30%), Ubisoft (5%), and others
- As of 12/31/19, Enterprise Value of ~$475B with ~40% of company revenues coming from gaming

Revenues

1 Reported Revenue

Gaming (Value-Added Services[1]) $20,264	Other VAS $8,461

Fintech and Business Services $14,556

Online Advertising & Other $10,907

	Business Model	2 Adjusted Revenue	3 Gross Profit	4 Operating Profit
PC	1P Software	$7,181	$3,808	$2,323
PC	3P Software	-	-	-
Mobile	1P Software	$4,534	$2,404	$1,467
Mobile	3P Software	$7,719	$4,093	$2,497
	Total	**$19,434**	**$10,305**	**$6,287**

1. Reported revenue per segment from public filings
2. Adjust reported revenue for deferred revenue & platform fees where applicable
3. Calculate Gaming gross margin based on public disclosure of VAS profit
4. Allocate opex based on Gaming's share of Tencent's total reported revenue to calculate operating profit

Source: Tencent financials & investor presentations, Wall Street Equity Research. Converted at spot rate of 12/31/19, 6.96 RMB / USD. [1] Value-Added Services includes gaming revenue from both "Online Gaming" and "Social Networks" sub-segments. Our estimated adjusted revenue excludes non-gaming revenue in "Social Networks," iOS & Google Play platform fees ($1.8B), income from associates or minority interest stakes (e.g. Epic, Hi-Rez), and adds back YoY changes in deferred revenue (+$0.3B).

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Profile: Valve

Key Information

- US game developer and digital distribution company founded in Bellevue in 1996 by two ex-Microsoft employees. About 700 employees to date, including CEO and founder Gabe Newell.
- Owns and operates PC software distribution platform Steam, also makes consumer hardware (Steam Controller, VR)
- Adjusted net revenues remained flat YoY, as an increase of 1P revenue (+10% YoY) was offset by a decrease in Steam store revenue (-10%)

Key Franchises

- DOTA 2
- Counter-Strike: Global Offensive
- Team Fortress 2
- Garry's Mod
- Left 4 Dead
- Portal
- Half-Life

USD Millions	Reported Revenue	Adjusted Revenue	Operating Profit	Operating Profit Margin %[1]
1P Publishing	$1,279	$1,279	$403	32%
3P Platform	$4,541	$1,226	$498	41%
Valve Total[2]	$5,820 (1)	$2,505 (2)	$901 (3)	36%

Methodology:

1. Reported revenue estimated using Superdata research for key 1P titles (e.g. DOTA 2, Counter-Strike: Global Offensive, Team Fortress 2) and for all Steam business
2. Adjusted net revenue on 1P games and Steam store after platform fees
3. Estimated operating margin for 1P business based on Activision PC EBIT %, for Steam store based on iOS / GP platform EBIT %

Note: Reported revenue reflects total consumer spend; adjusted revenue deducts the estimated 73% share paid to publishers from Valve's 3P digital store. Sources: Superdata, Steamspy. [1] Calculated off adjusted revenue; assumes 1P business is similar to Activision's PC business and Steam store is similar to mobile app stores. [2] Total does not include their Peer-to-peer sales business, which is assumed to be immaterial

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Profile: Activision Blizzard

Key Information

- Holding company for subsidiaries Activision, Blizzard Entertainment, and King Digital
- Key franchises include Call of Duty (Activision), Candy Crush (King), Starcraft, Warcraft, Diablo, and Overwatch (Blizzard)
- 409M monthly active users in Q4 CY2019, led by King (249M), Activision (128M), and Blizzard (32M)

USD Millions	Reported Revenue[1]	Adjusted Revenue[2]	Operating Profit
Console	$1,920	$1,867	$588
PC	$1,717	$1,662	$524
Mobile	$2,204	$1,548	$488
Gaming Total	**$5,641**	**$5,077**	**$1,600**

Methodology:

1) Obtain reported revenue and operating income by segment from Form 10-K and ATVI investor disclosures
2) Adjust reported revenue to account for publicly disclosed YoY change in deferred revenue as well as estimated mobile platform fees
3) Allocate reported operating income to each segment proportional to adjusted revenue

Source: Activision Blizzard 10-K. [1] Excluding Others, which includes media networks, studios, distribution businesses, and licensing/merchandising. Total reported revenue (including Others) for CY2019 was $6.5 billion. [2] Adjusted revenue reflects YoY change in deferred revenue and mobile platform fees.

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Profile: EA

Key Information

- US developer, marketer, publisher and distributor among top 3 gaming companies. Owns other major gaming studios, including BioWare, Criterion Games, Tiburon, Maxis, Respawn and DICE
- Significant contributors to revenue in CY19 included FIFA 20, Star Wars Jedi: Fallen Order & Madden NFL 20
- EA Access at 5M+ subscribers; adopted quicker on PS4 than Xbox One

Key Franchises

Console: FIFA, Madden NFL, NBA Live, NHL, UFC, Battlefield, Star Wars Battlefront, Need for Speed, Titanfall

PC: Battlefield, Mass Effect, Sim City, The Sims, FIFA

Mobile: Star Wars Mobile, EA Sports Mobile, Sim City

Reported Revenues

1 Reported Revenue
EA Reported Revenue $5,388

Mapping to Verticals

2 Vertical	3 Adjusted Revenue	Profit
Console & Handheld	$3,830	$886
PC Client	$987	$228
Mobile / Tablet	$545	$126
Total	$5,362[1]	$1,240

Methodology:

1. Obtain revenue & changes in deferred revenue from 10-K
2. Revenue breakdown by Console, PC, and Mobile supplied in earnings releases. YoY change in deferred revenue added to the top and bottom lines.
3. Allocate reported operating income to each segment proportional to adjusted revenue

Source: EA Financials. [1] Similar to EA's reported "Net Bookings," but excludes $165M of mobile platform fees (e.g. iOS, Google Play). Adjustment is intended to better align reported revenue with actual CY18 consumer spend.

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Profile: Epic Games

- Following a standout year in CY2018, Fortnite revenue declined by one-third; the title remained a standout performer across multiple segments
- Epic acquired Psyonix and its *Rocket League* (RL) IP in May 2019 to diversify its 1P content portfolio
- In January 2019, Epic launched the Epic Games Store on PC; given the company's public commitment to a 12% platform fee, we believe the store makes a minimal financial contribution to Epic's overall business

1P Publishing (Fortnite, RL)	CY2018 Reported Revenue	CY2019 Reported Revenue	YoY %
Console	$4,678	$2,885	(38%)
PC Client	$997	$429	(57%)
iOS	$510	$450	(12%)
Android	$181	$490	171%
Total	**$6,365**	**$4,254**	**(33%)**

Epic Games Store	CY2019 Reported Revenue	CY2019 Adjusted Revenue
Console	-	-
PC Client	$251	$30
iOS	-	-
Android	-	-
Total	**$251**	**$30**

Sources: AppAnnie, Epic Games press release, Superdata Research, Xbox Finance. Analysis assumes that Epic recognizes 100% of consumer spend as revenue and deducts relevant platform fees as COGS, in line with other major U.S. game publishers. Epic Games Store "Adjusted Revenue" reflects Epic's 12% platform fee as opposed to the industry-standard 30%.

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Profile: Netease

Key Information

- Chinese technology company whose portfolio primarily consists of gaming, ecommerce, media, and education services
- In addition to mobile and PC 1P gaming titles (e.g. *Fantasy Westward Journey, Rules of Survival*), Netease licenses games from Activision Blizzard for distribution in China (e.g. *World of Warcraft, Hearthstone, Overwatch*)
- Approximately 60% of the company's revenues are associated with gaming. *Fantasy Westward Journey,* its most popular title, generated nearly $800M in reported revenue on mobile platforms in CY2019

USD Millions	Reported Revenue	Adjusted Revenue	Operating Profit	Operating Profit Margin %
Mobile	$4,762	$3,302	$1,366	41%
PC	$1,905	$1,923	$1,041	54%
Netease Total	**$6,667**	**$5,226**	**$2,408**	**46%**

Methodology:

1. Reported revenue from Netease financial filings
2. Adjusted net revenue excludes mobile platform fees and accounts for changes in deferred revenue
3. Allocate reported operating income to each segment

Source: Netease financials & investor presentations, Wall Street Equity Research, App Annie. Converted at spot rate of 12/31/19, 6.96 RMB / USD.

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Top CY2019 Companies Ranked by Reported SW&S Revenue

CY2019 Reported Revenue and Profit[1]; may "double-count" due to various revenue recognition policies (e.g. platform fees for digital app stores)

USD Billions; excludes dedicated Hardware

Rank	Company	CY19 Reported SW&S Revenue	CY19 Reported SW&S Profit	CY19 Reported SW&S Margin
1	[redacted]			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
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28				
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30				
31				
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33				
34				
35				
36				
37				
38				
39				
40				

[1] FX rates as of 12/31/2019.

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Top CY2019 Companies Ranked by Adjusted Net SW&S Revenue

Adjusted Revenue figures reflect intra-value chain revenue & profit shares (e.g. platform fees for digital app stores, Console disc royalties)

USD Billions; excludes dedicated Hardware

		ADJUSTED SOFTWARE & SERVICES NET REVENUE							SOFTWARE & SERVICES OPERATING PROFIT							
	Company	Console	PC Client	Mobile	Browser	Video	Streaming	Total	Console	PC Client	Mobile	Browser	Video	Streaming	Total	Margin
1	[redacted]															
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
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FX rates as of 12/31/2019

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Appendix 4 | Additional Analysis

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CY2019 Game Industry Revenue by Segment by Business Model

USD Billions; $168.4B Software & Services ("SW&S") only, [redacted]

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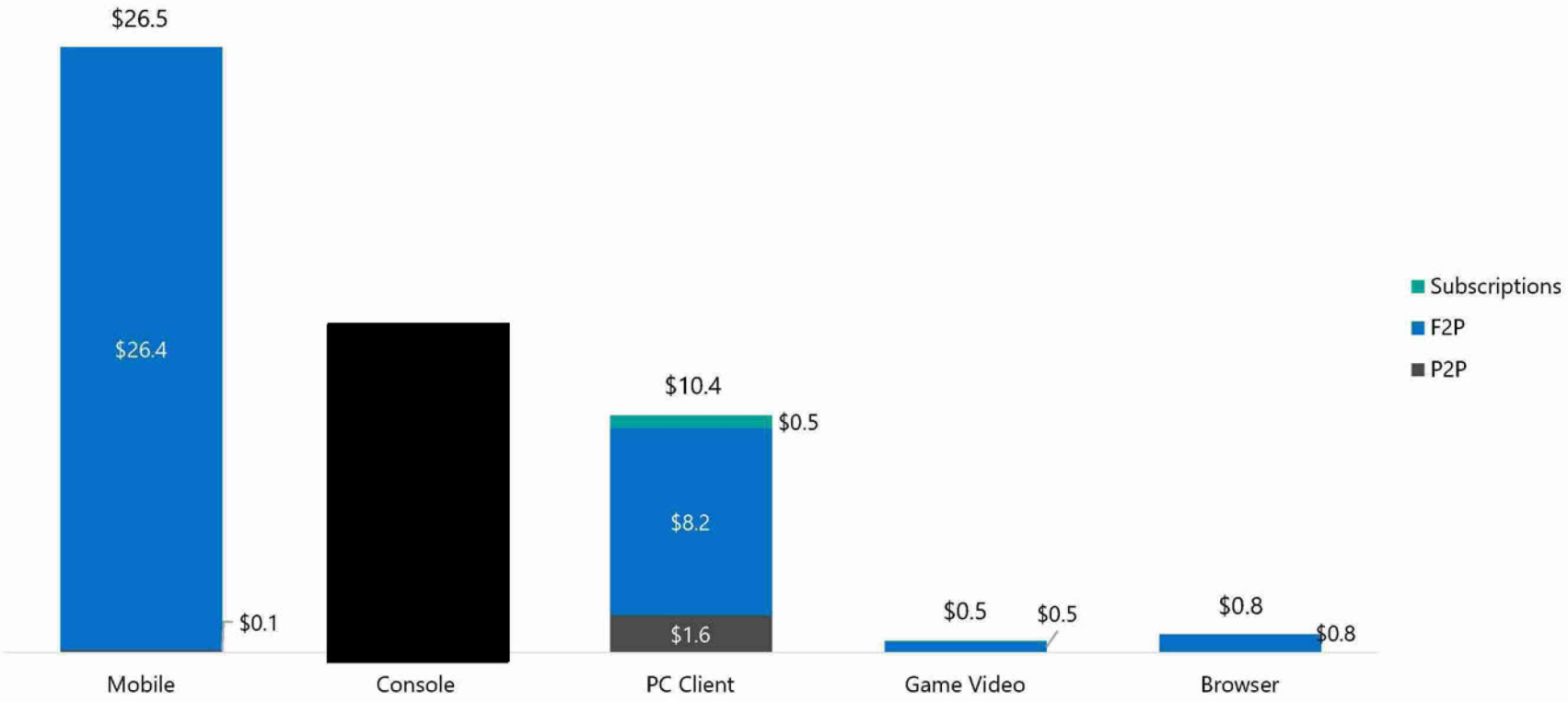
CY2019 Game Industry Profit by Segment by Business Model

[redacted]



[1] Assumes cloud streaming had no meaningful profit in CY2019

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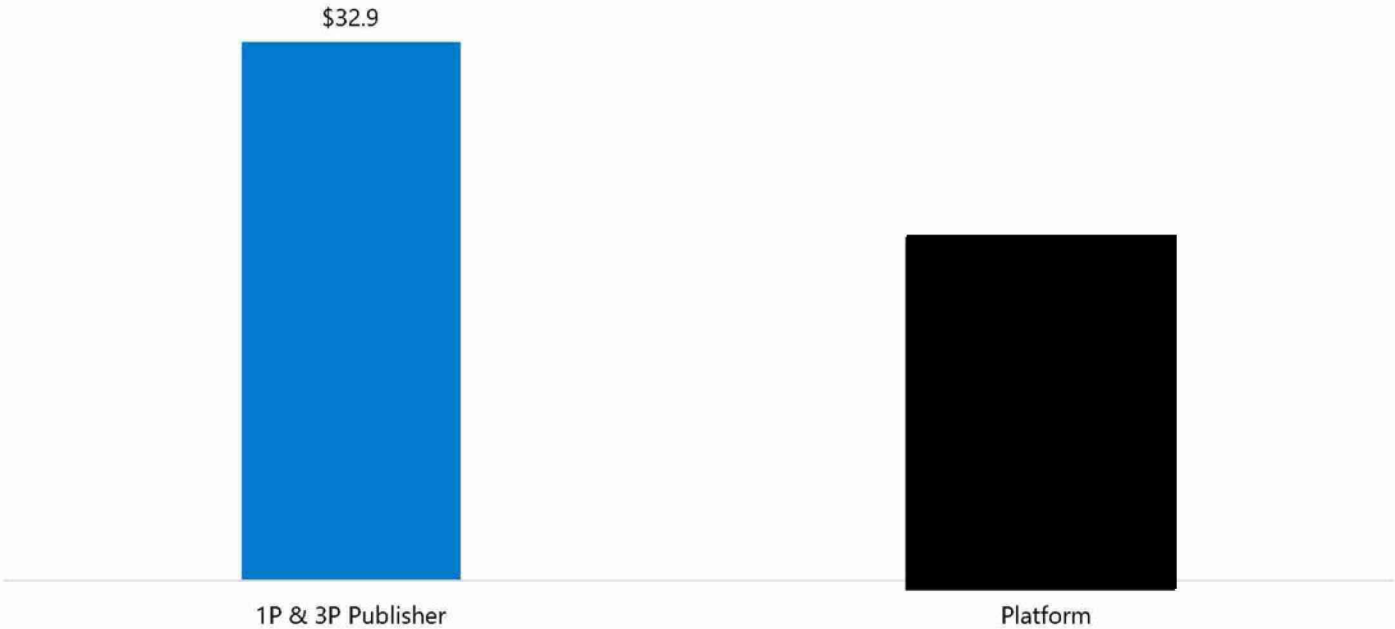
CY2019 Publisher vs Platform Share of Profit

In 2019, Publishers took roughly 2/3 of the gaming industry profit

[redacted]



% share of profit

% margin

[redacted]

Note: Platform revenue and profit includes subscriptions, platform share from digital store, and manufacturing royalties on physical discs but excludes first-party publishing (e.g. Xbox Game Studios).

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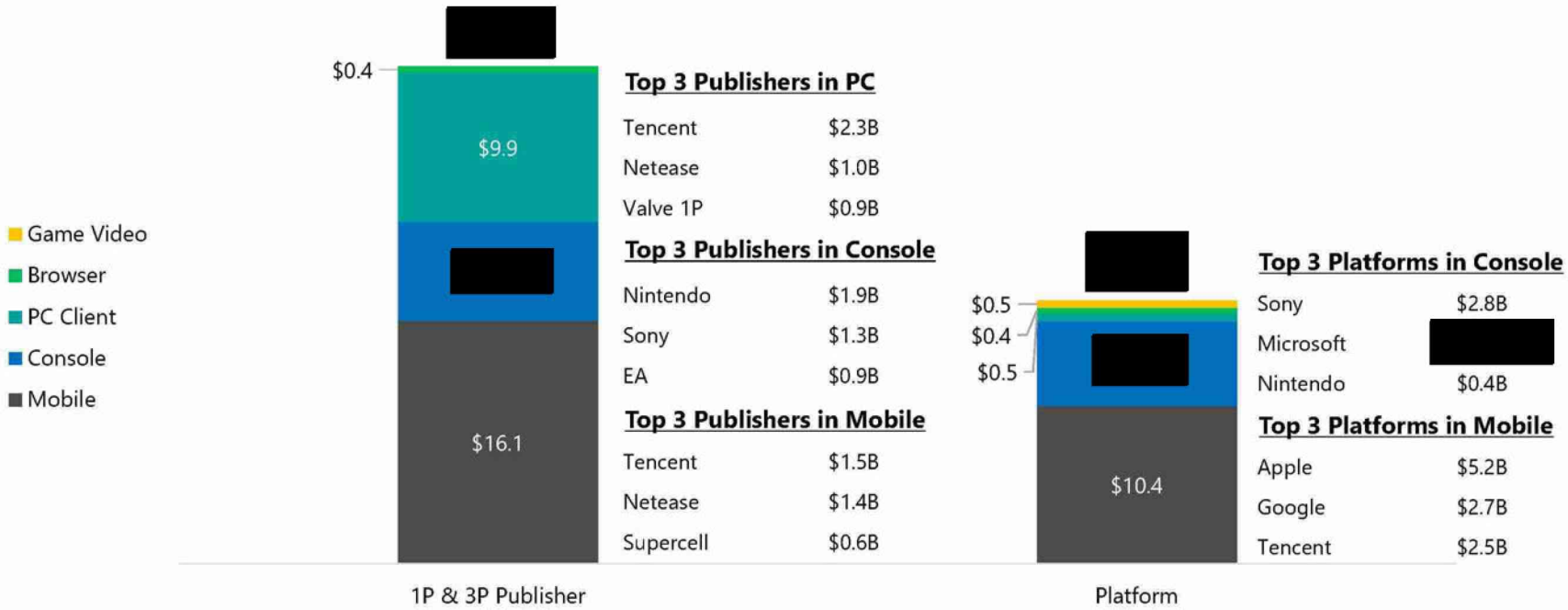
CY2019 Publisher vs Platform Share of Profit by Segment

In 2019, Publishers took roughly 2/3 of the gaming industry profit

USD Billions; $50.3B Software & Services ("SW&S") profit only, excludes dedicated Hardware profit



	1P & 3P Publisher	Platform
% share of profit	*66%*	*34%*
% margin	*30%*	*40%*

Note: Platform revenue and profit includes subscriptions, platform share from digital store, and manufacturing royalties on physical discs but excludes first-party publishing (e.g. Xbox Game Studios).

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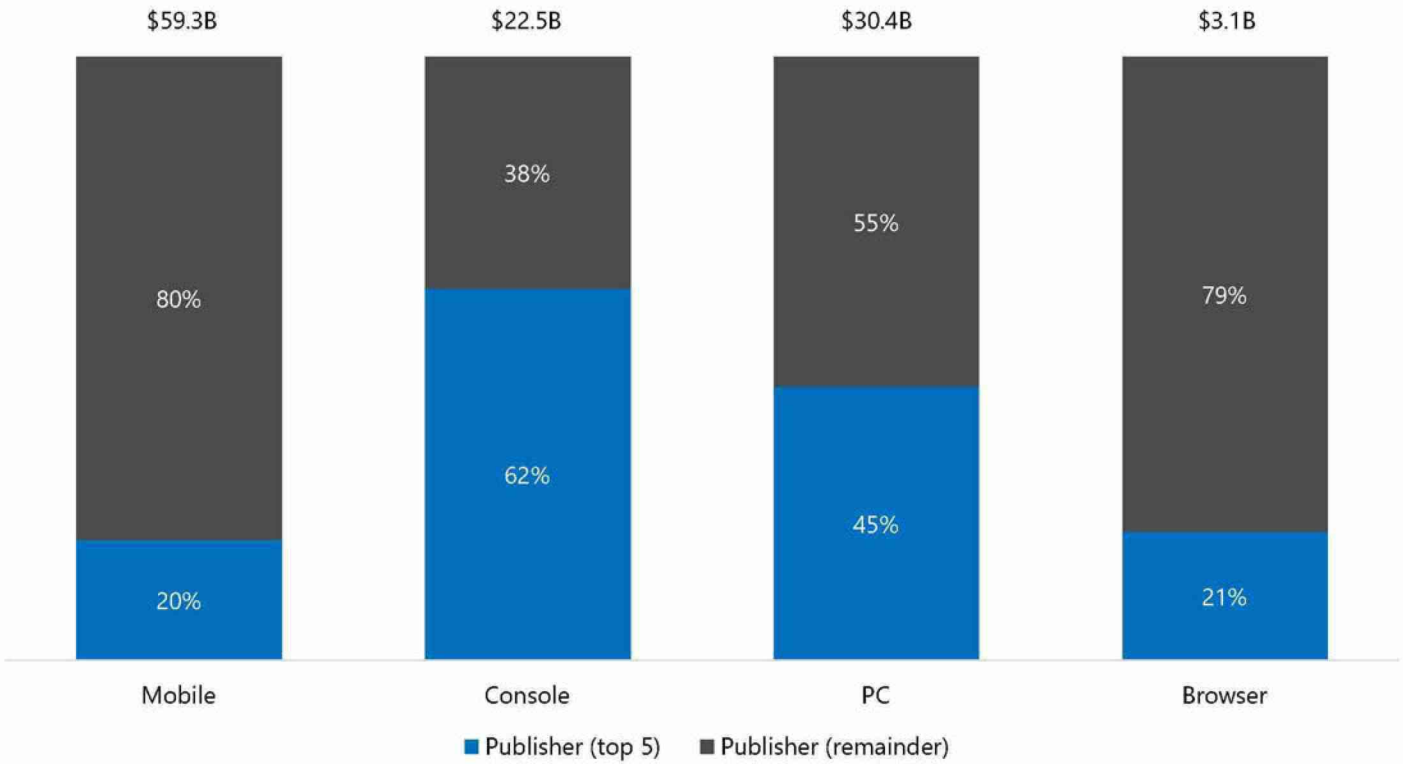
Publisher Concentration by Segment

The top 5 publishers in the Console segment capture the majority of segment revenue

USD Billions; $115.2B Software & Services ("SW&S") revenue from publishers only, excludes $42.5B from platforms, $7.7B of game video, $0.3B of cloud streaming, [redacted]



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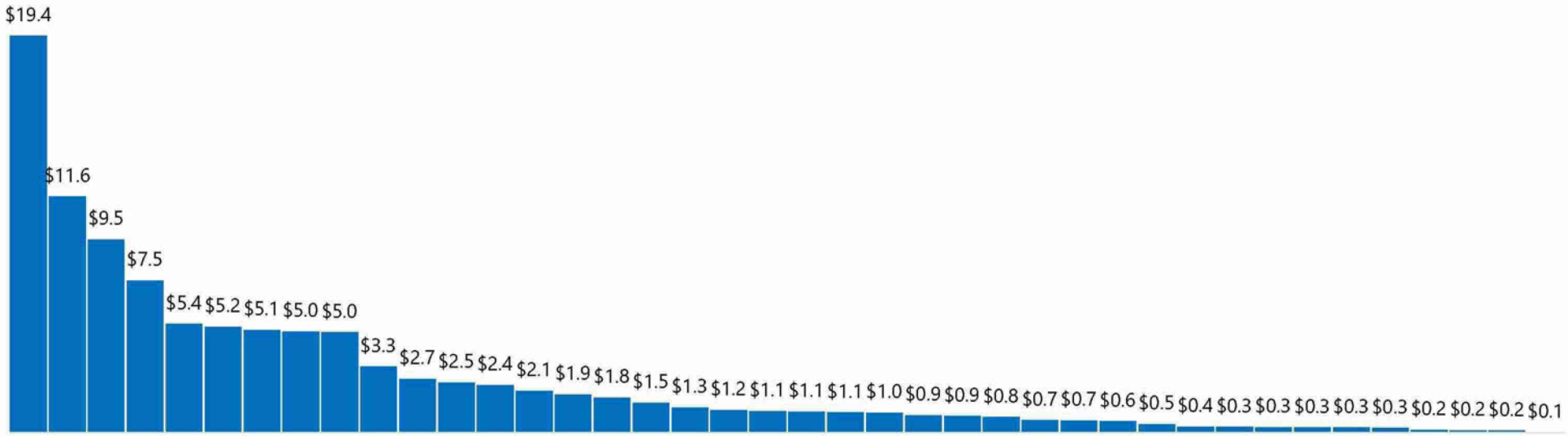
CY2019 Adjusted SW&S Revenue Rank by Company

Tencent generated more adjusted gaming revenue than EA, Activision Blizzard, and Nintendo combined in CY2019

USD Billions; $106.2B Software & Services ("SW&S") revenue only, excludes $56.8B unobserved revenue[1] and dedicated Hardware profit



[redacted]

[1] Analysis observes ~67% of SW&S revenue. Estimated unobserved revenue is calculated on a per-segment basis. Revenue figures above are adjusted for deferred revenue & platform fees and will not tie to reported revenue. See slides 30-34 for more detail on methodology used to calculate unobserved profit.

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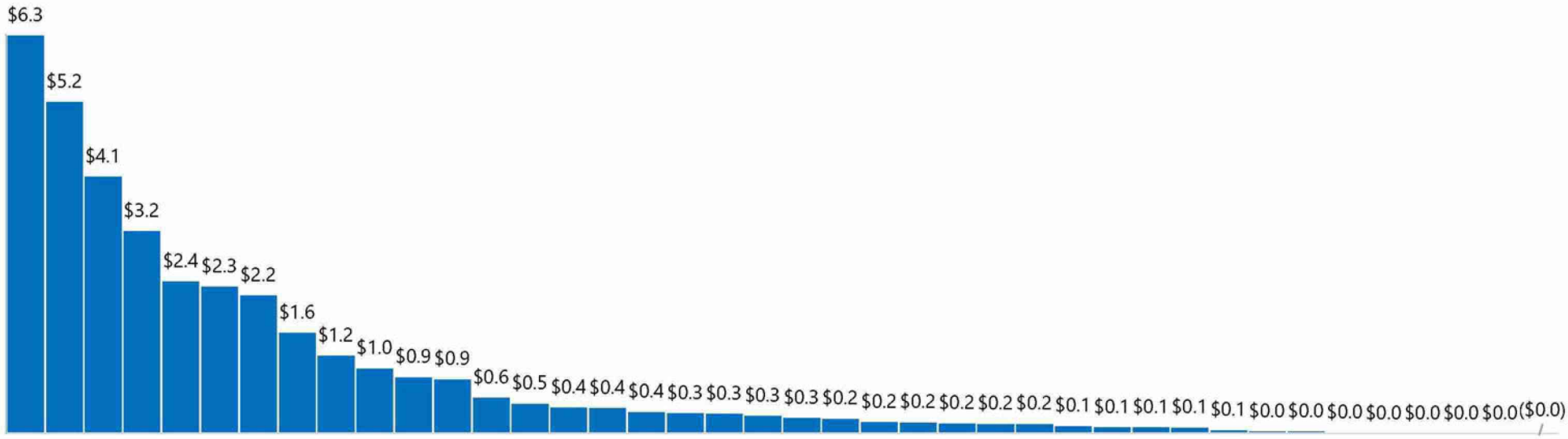
CY2019 Adjusted SW&S Profit Rank by Company

The top 7 companies [redacted] considered in this sample set account for roughly half of profit in the game industry

USD Billions; $36.6B Software & Services ("SW&S") profit only, excludes $13.7B unobserved profit[1] and dedicated Hardware profit



[redacted]

[1] Analysis observes >70% of SW&S profit. Estimated unobserved profit is calculated on a per-segment basis. Profit figures above are adjusted for deferred revenue & unallocated corporate opex and will not tie to reported profit. See slides 30-34 for more detail on methodology used to calculate unobserved profit.

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CY2019 Adjusted SW&S Revenue vs. Profit Margin by Company (1 of 2)

Ten largest companies (ranked by adjusted SW&S revenue) reported an average profit margin of [redacted][1]

Reported Revenue and Profit Margins exclude dedicated Hardware

[1] CY2019 Adjusted Revenue and Profit; figures above are adjusted for deferred revenue & unallocated corporate opex and will not tie to reported profit.

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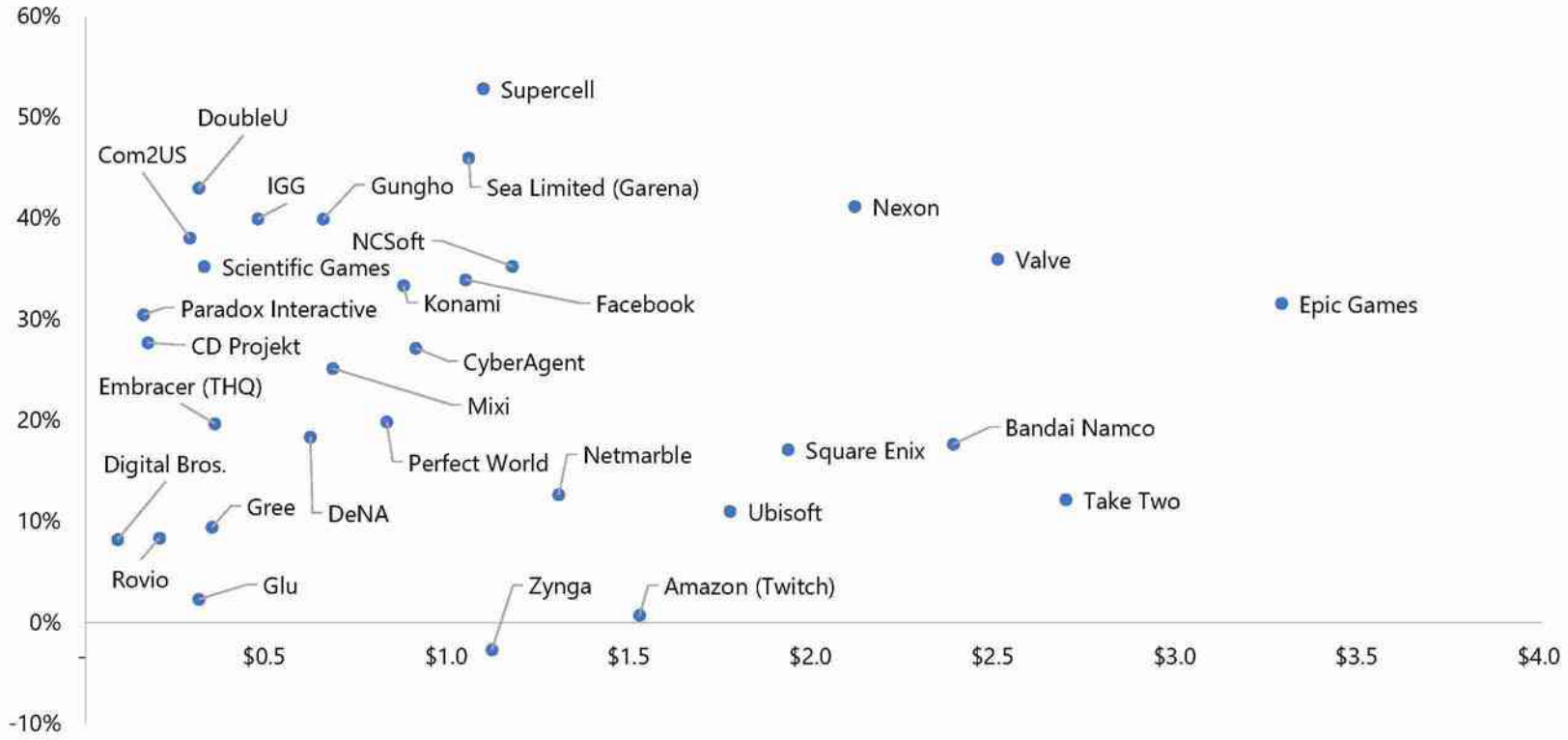
CY2019 Adjusted SW&S Revenue vs. Profit Margin by Company (2 of 2)

Ten largest companies (ranked by adjusted SW&S revenue) account for ~80% of observed adjusted profit

Reported Revenue and Profit Margins exclude dedicated Hardware



[1] CY2019 Adjusted Revenue and Profit; figures above are adjusted for deferred revenue & unallocated corporate opex and will not tie to reported profit.

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Appendix 5 | App Store Profit

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iOS and Google Play Gaming P&L

Excludes any in-game and in-store advertising revenue on Mobile / Tablet platform(s)

	(US$, Billions)	iOS	Google Play
1	Gross Gaming Revenue (User PDL & IAP)	$38.6	$26.5
2	Publisher Share of Digital Transactions	($27.0)	($18.6)
	Net Revenue	**$11.6**	**$8.0**
3	*Operating Margin (%)*	*45%*	*34%*
	Operating Income (EBIT)	**$5.2**	**$2.7**

Methodology / Assumptions

1. AppAnnie adjusted gaming revenue grossed up. Excludes any in-store advertising revenue (captured in total segment mobile advertising revenue)
2. Assumes 70% of consumer spend is paid out to game publishers
3. Operating Margin assumption based on Morgan Stanley bottoms-up methodology

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Appendix 6 | Console Generation 8 Retrospective

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Platform Holder CY2015-CY2019 Gaming Profit Trend

Nintendo has grown profit ~9x since CY2015 with the successful launch of the Switch

Indexed Total Gaming Profit (including hardware subsidies), CY2015=1.0x

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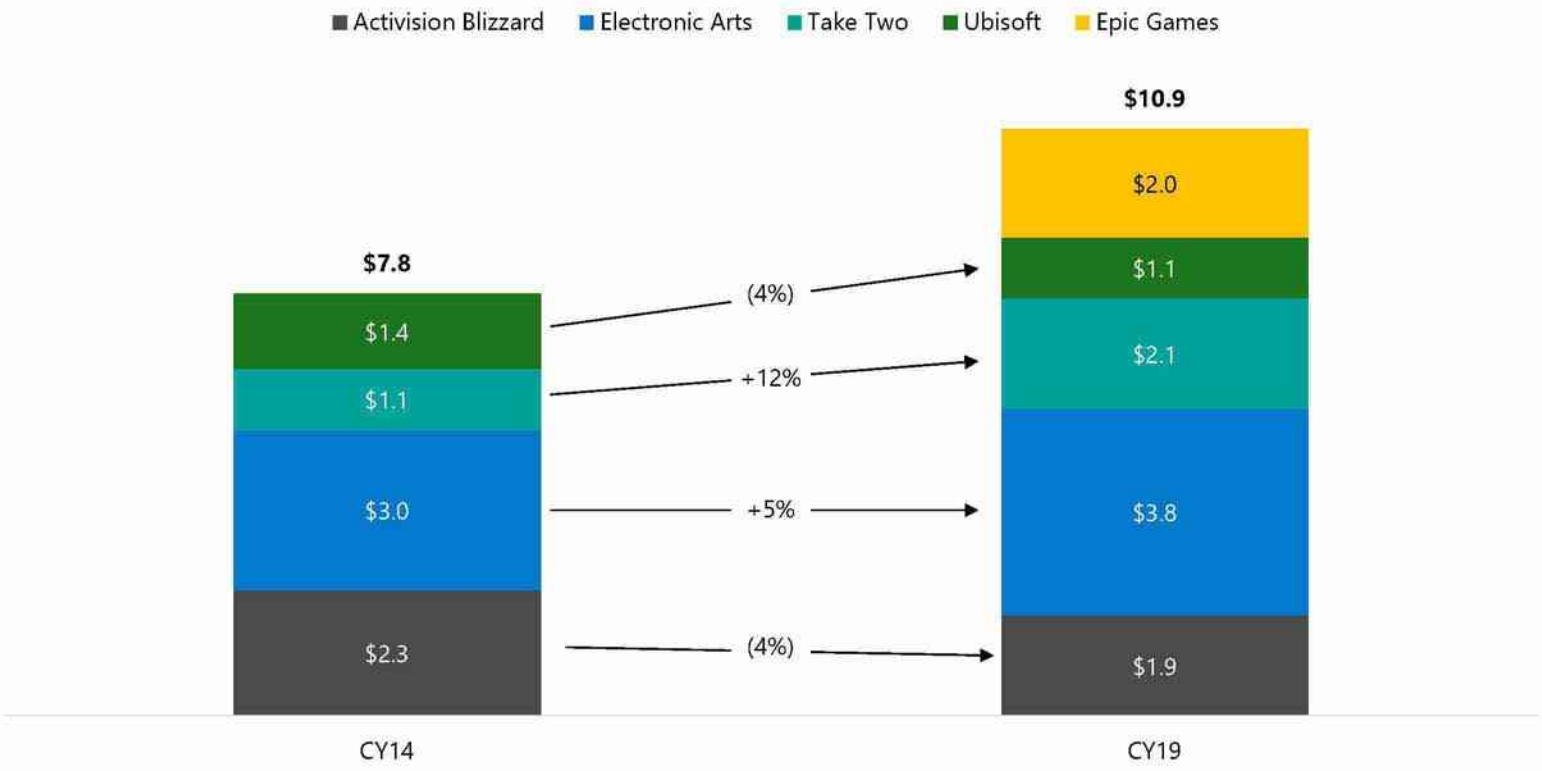
Top 5 Console Publishers: CY2014-CY2019 Revenue Trend

Of the top 5 CY2019 console publishers, only Take Two (+12% CAGR) has grown revenue faster than the overall Console segment (+9% CAGR)

Adjusted SW&S Console Revenue, USD Billions



Note: Console revenue figures are adjusted for deferred revenue and/or intra-value-chain payments and will not tie to reported revenue disclosure.

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Top 5 Console Publishers: CY2014-CY2019 Console Revenue Share (%)

Only Activision Blizzard and Ubisoft have been able to materially reduce their console exposure since CY2014

Adjusted SW&S Console Revenue Share (%)

Publisher	CY2014 Console %	CY2019 Console %	PPT Change
Activision Blizzard	55%	37%	(18%)
Electronic Arts	71%	71%	0%
Take Two	79%	76%	(3%)
Ubisoft	86%	64%	(22%)
Epic Games	N/A	62%	N/A

Note: Console revenue % are based on adjusted revenue splits and will not tie to reported revenue disclosure.