



Market Insights

Between Two Ferns | *Entertainment Technology & the Software That Delivers It*

Piper Sandler Technology Research

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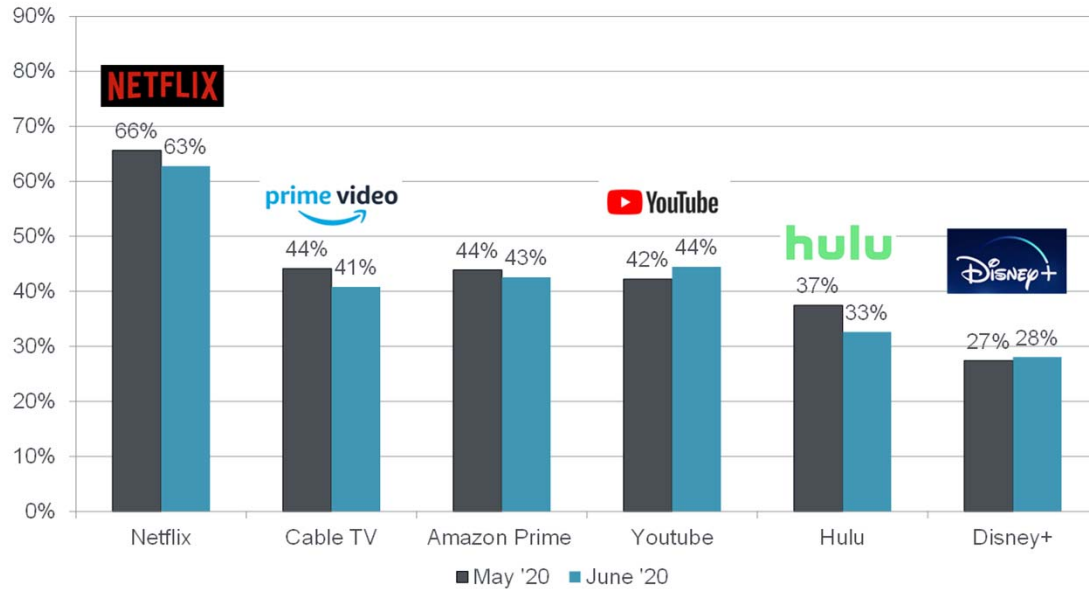
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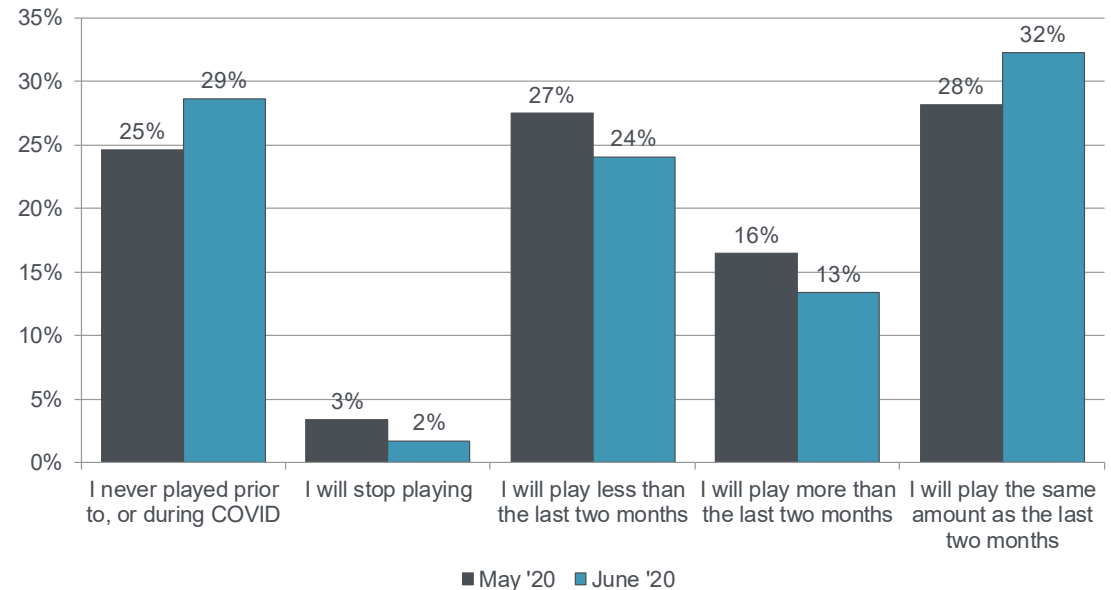
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Digital Entertainment In A Post COVID World

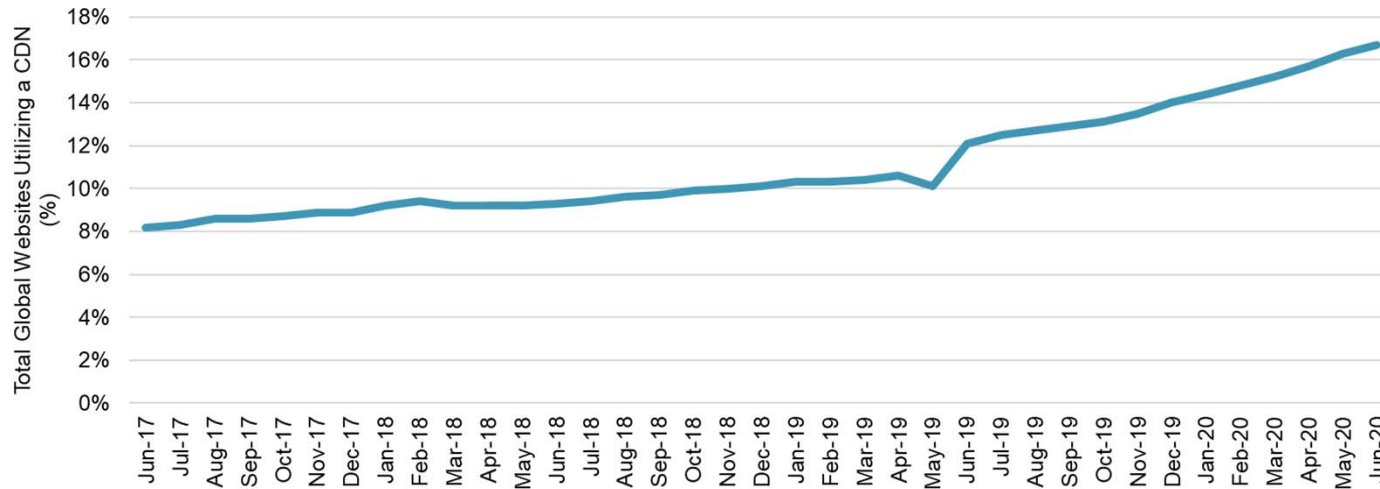


“What video services will you use after stay-at-home rules ease? (Choose all that apply)”

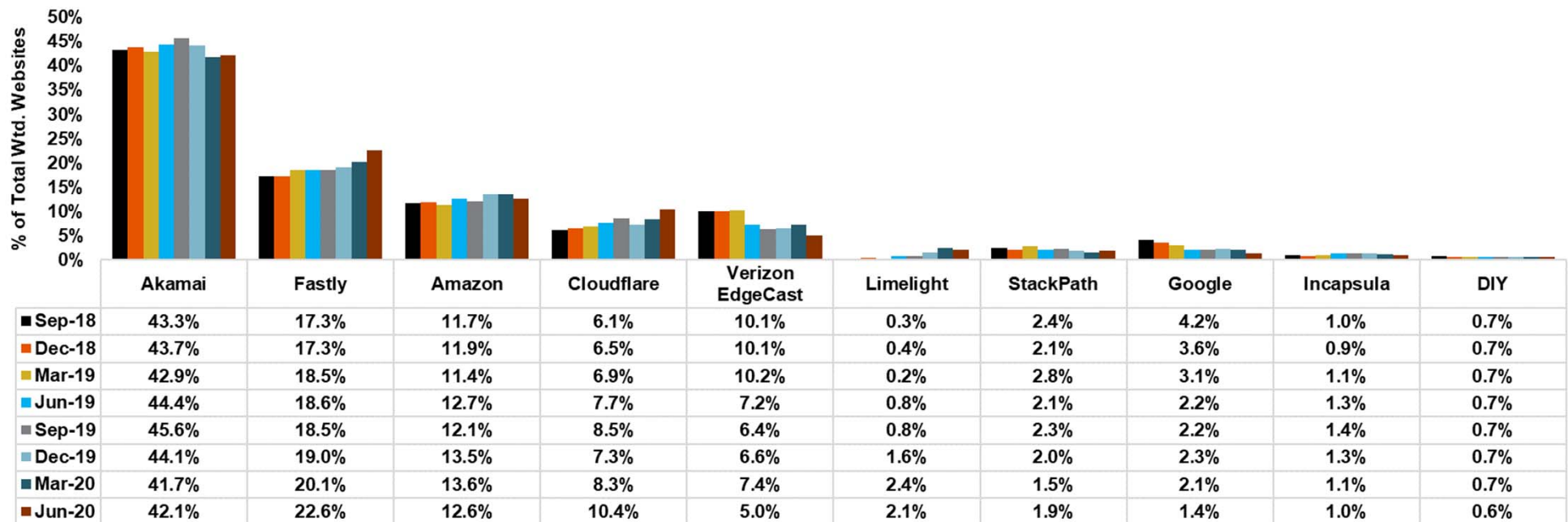
“Once stay-at-home rules ease, will you (or someone in your household) play video games?”



CDN Usage is Increasing












17% of Global Websites Utilize a CDN Today (+5% Y/Y).



Source: PSC Research, w3 Technologies and Piper Sandler CDN Times

Three Pillars of CDN / Edge Services

Vendor	Media (OTT, Gaming, SW)	Web (E-Commerce)	Cloud Web Security
	X	X	X
	X	/	/
	/	X	X
	X	X	/
		X	X
	X	/	/
	X	X	X
	X	/	/
	X	X	/
“DIY”	X	/	

Online Video Gaining Share

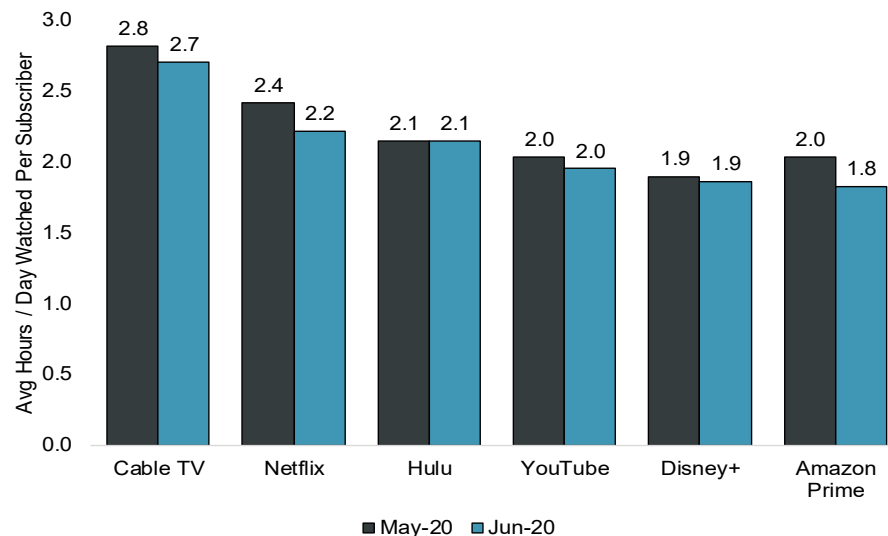
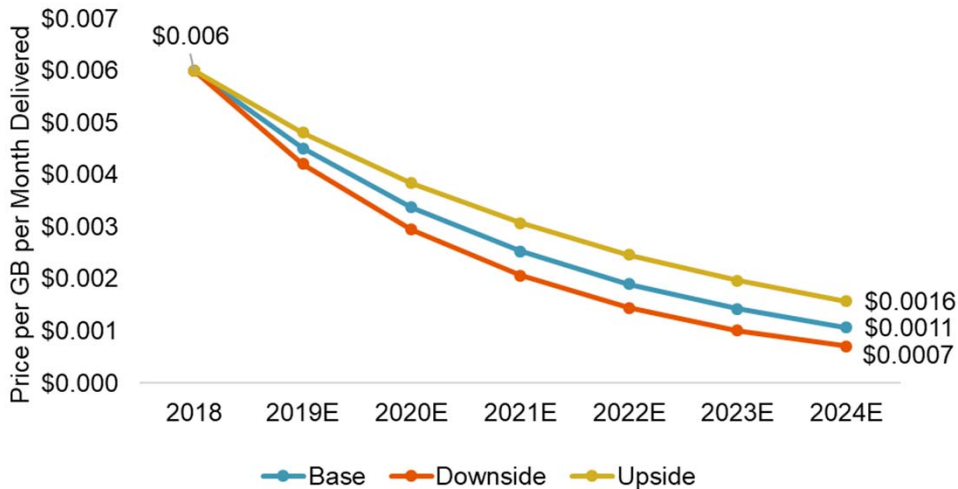
- **Cord Nevers:** 33% of teens in our survey indicated that they do not have cable TV in their household; this is up from 32% in the Fall.
- **Cord Cutters:** 8% of teens said they expect their household to cancel cable TV within the next 6 months, down slightly from 9% in the Fall.
- **Migration of Time/Wallet to Online Video:** As a result of these trends, we expect to see an ongoing transition towards online video / streaming services.



“Are you planning to cancel your cable subscription over the next 6 months?”

	% of Students Fall 2015	% of Students Spring 2016	% of Students Fall 2016	% of Students Spring 2017	% of Students Fall 2017	% of Students Spring 2018	% of Students Fall 2018	% of Students Spring 2019	% of Students Fall 2019	% of Students Spring 2020
I don't have cable	17%	19%	17%	17%	20%	22%	25%	28%	32%	33%
No	74%	70%	75%	72%	72%	69%	66%	62%	60%	58%
Yes	9%	11%	8%	10%	8%	10%	9%	10%	9%	8%

New OTT Opportunities for CDNs

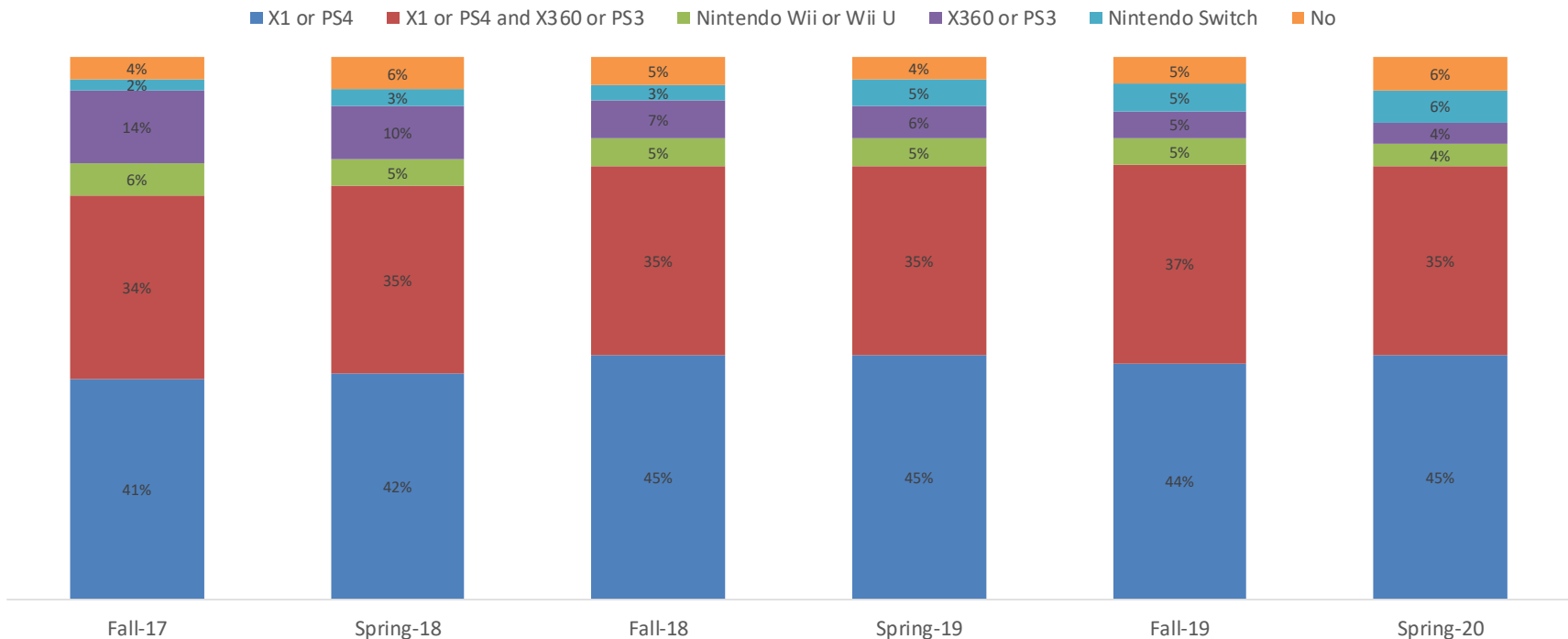


“What video services do you currently rely the most on?
(Select all that apply)”

	2024E		
New OTT Services	Downside	Base	Upside
Total GBs / Hr 2024	2.4	2.4	2.4
x Number of Days on Avg / Month	30.5	30.5	30.5
Total GBs / Month Per User / Hr	74	74	74
x Daily Hours Watched	1.2	2	2.8
Total GBs / Month Per User	88	147	206
x Total Number of Subscribers (Ms)	240	255	270
Total GBs (Ms) / Month	21,214	37,567	55,687
x Number of Months / Yr	12	12	12
Total GBs (Ms) / Yr	254,571	450,803	668,249
x Price to Deliver	\$0.001	\$0.001	\$0.002
Total TAM (\$Ms) / Yr	\$180	\$482	\$1,052
Other Statistics			
TBs (Ms) / Month	21.2	37.6	55.7
TBs (Ms) / Year	254.6	450.8	668.2
TBs / Year / Subscriber	1.1	1.8	2.5
CDN \$ / Subscriber / Month	\$0.06	\$0.16	\$0.32
CDN \$ / Subscriber / Yr	\$0.75	\$1.89	\$3.90

Console Video Game Takeaways

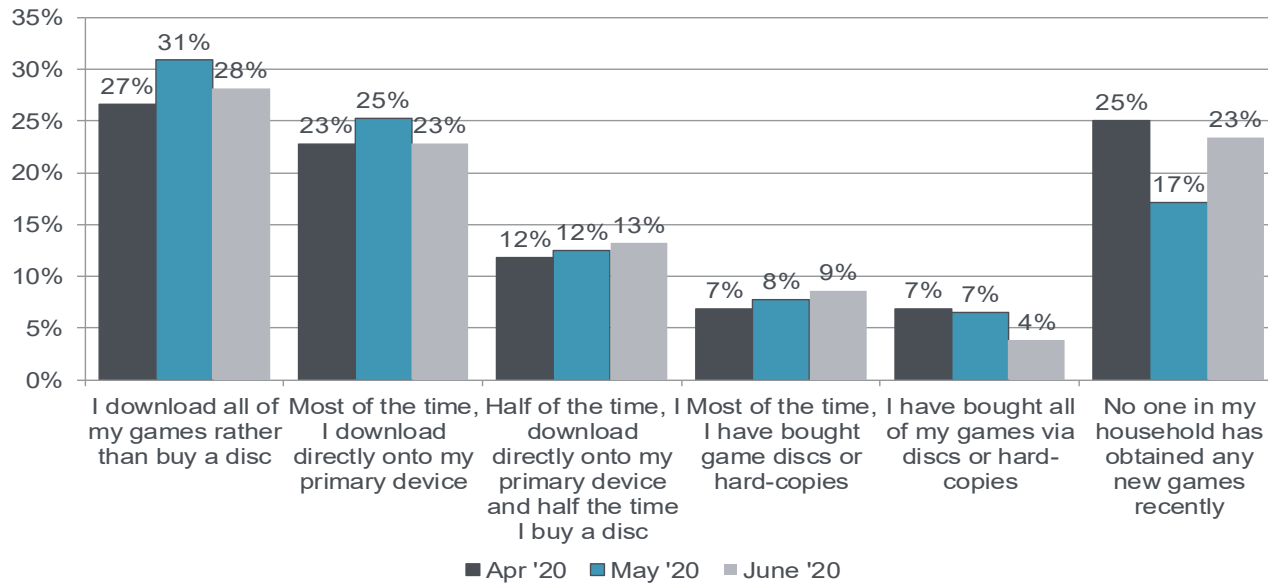
“Do you or a member of your household own a gaming console?”



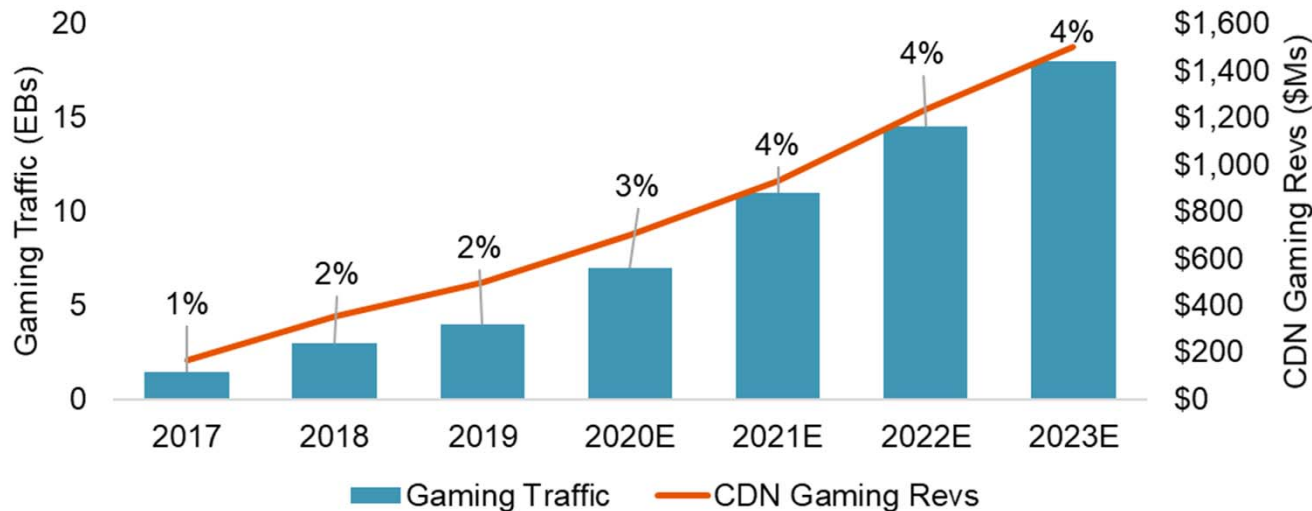
- **Console Ownership:** 94% of teens own a game console, including 45% who own a current gen Xbox 1 or PS4. This compares to 96% and 44% respectively from Fall-19.
 - 35% of respondents own both a current and prior generation console.
- **Next Gen:** A majority of teens, 59%, expect to purchase a next gen console (PS5 or Xbox Series X) within the next two years. The consoles are expected to launch during holiday '20.
- **Digital Downloads:** Percentage of teens who anticipate downloading the majority of games onto consoles is 61%, up from 59% for Fall-19 and up from 37% in Fall-15, when we first asked the question.



Gaming is Becoming a Major Part of the CDN Story

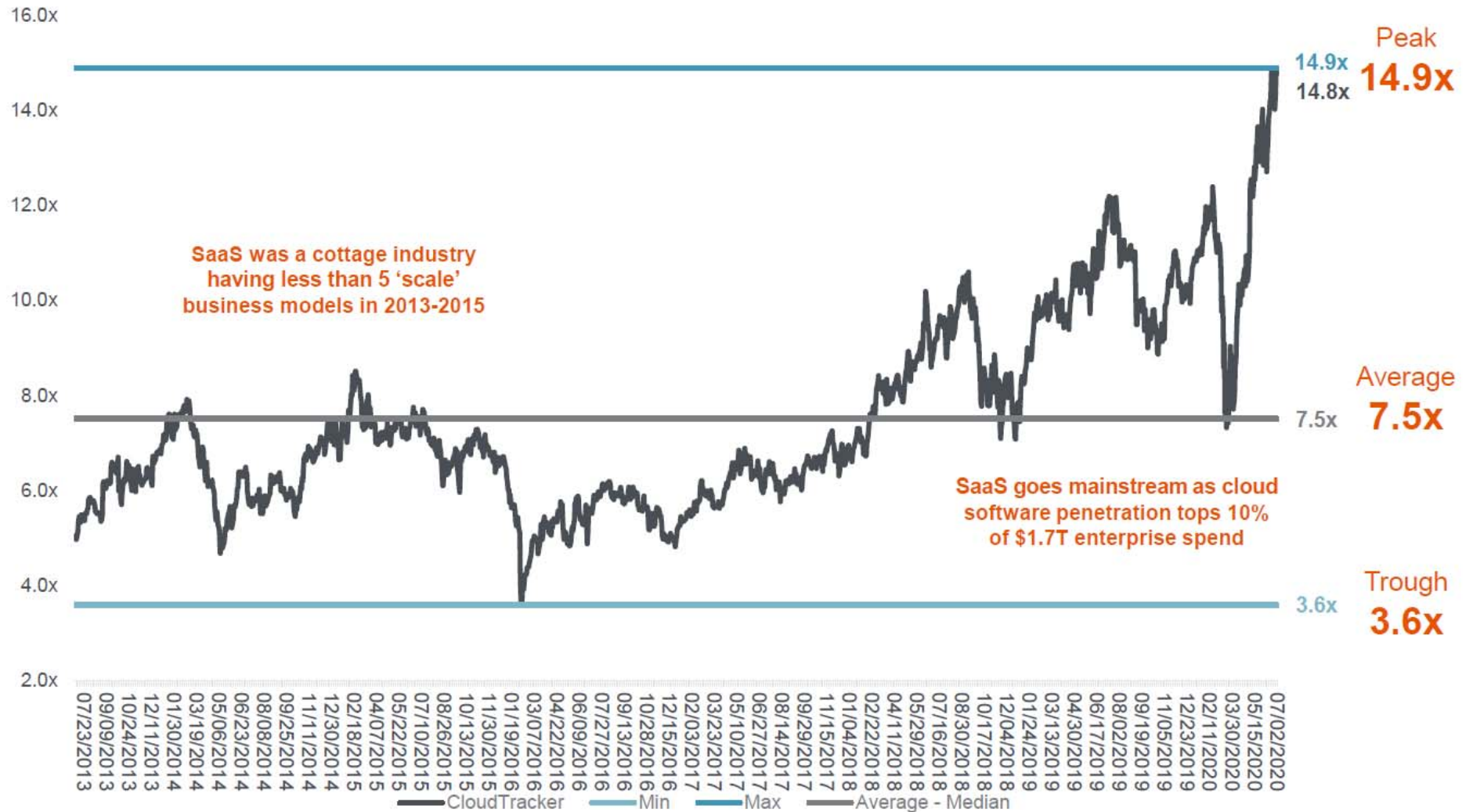


More Gamers are Downloading Directly = Positive for Media CDNs



Gaming Will Increase to 4% of Traffic, up 4x from 2017

CloudTracker | Valuation Monitor – Median NTM EV/S



Source: PSC Research (CloudTracker)

Industry Risks

- **Macroeconomic**
- **Competition**
- **Pricing Pressure**
- **FX**
- **Slowing Internet Usage**
- **Lack of new technology**
- **Consumer spending**

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