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# The Math Of OTT: A Formula Of Addition, Not Subtraction

With 820 million connected video devices in the U.S. and hundreds of different streaming services, the over-the-top video ecosystem is about delivering more to the consumer

- **More...Distribution**
  - 71% of Internet users use an OTT service at least once a month
- **More...Content**
  - Consumers have a voracious appetite for content, in fact a large majority of OTT HHs (70%) also have a multichannel subscription
- **More...Choice**
  - Nearly one-third of OTT subscribers hold 3 or more means of accessing OTT content, an eight-fold increase over just the last two years
- **More...Convenience**
  - 45% of streamers say it's important to them to be able to watch TV programs "on the go" while 81% say it's important to them to watch TV programs whenever they want
- **More...Advertising Opportunities**
  - Currently, advertising comprises 45% of all online video revenue and is projected to grow to almost 60% over the next 10 years
  - 65% of people who use a second screen while streaming have looked up info on a product that's been advertised in a TV show

# What is OTT (Over-The-Top)?

**Definition:** Premium long form video content that is streamed over the internet through an app or device onto a TV (or PC, Tablet, or Smartphone) without requiring users to subscribe to a wired cable, telco or satellite TV service.

**OTT consumer journey:** OTT leverages “apps” to stream video content to a television via an internet connection. Viewing methods include: (a) on-demand where viewers select and watch content when they choose to, and (b) linear/live - where viewers watch at the particular time, channel or app (live content is streamed in real time as the event happens)

Viewers stream TV content from the Internet using either a smart TV, OTT device, connected game console or IP set top box that received signals from digital video ad server



All major networks are making their content available either through their own app or via a virtual MVPD like Hulu or Sling TV



Content is streamed and plays instantly in full-screen and can be ad-supported if the network chooses



VAB: YOU DOWN WITH OTT?

The Math of OTT: *More* Distribution Points  
Currently, 71% of Internet users use an OTT service

# OTT Content Can Be Accessed In Several Ways And Falls Primarily Into Two Groups

## Devices

Connected Devices allows the streaming of specific, selected content.

Devices include Streaming Players/Sticks (e.g. Roku/Amazon Fire TV), Gaming Consoles (e.g. PS4), and Smart TVs

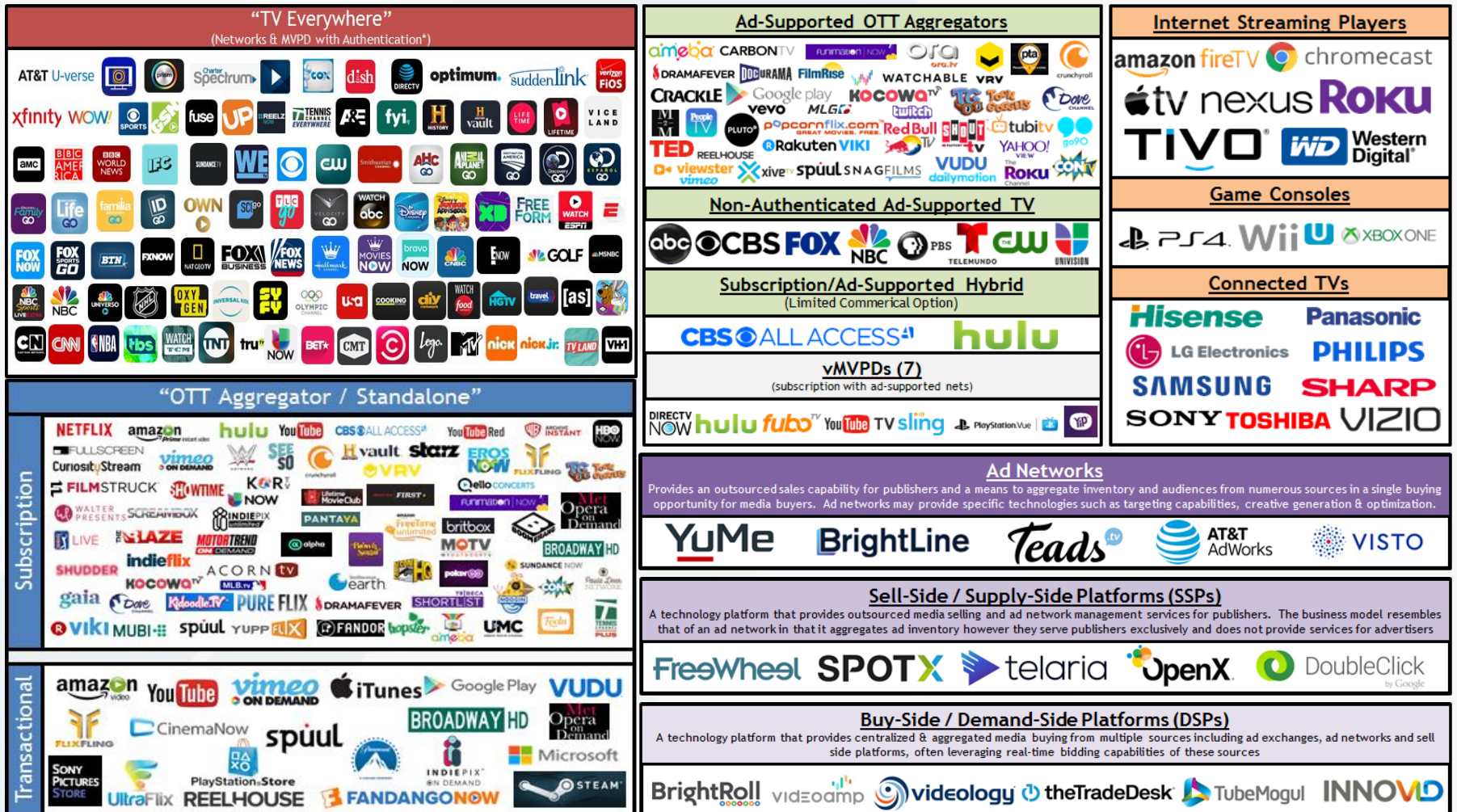
## Streaming Services

Means of access are ad-supported, subscription, rental, or purchase.

These access points can take the form of OTT content aggregators (e.g. Crackle), Standalone apps (e.g. ABC), or virtual MVPDs (e.g. Sling).

Streaming services and devices often work in tandem. For example, streaming Hulu content from a mobile phone to the television via Google Chromecast.

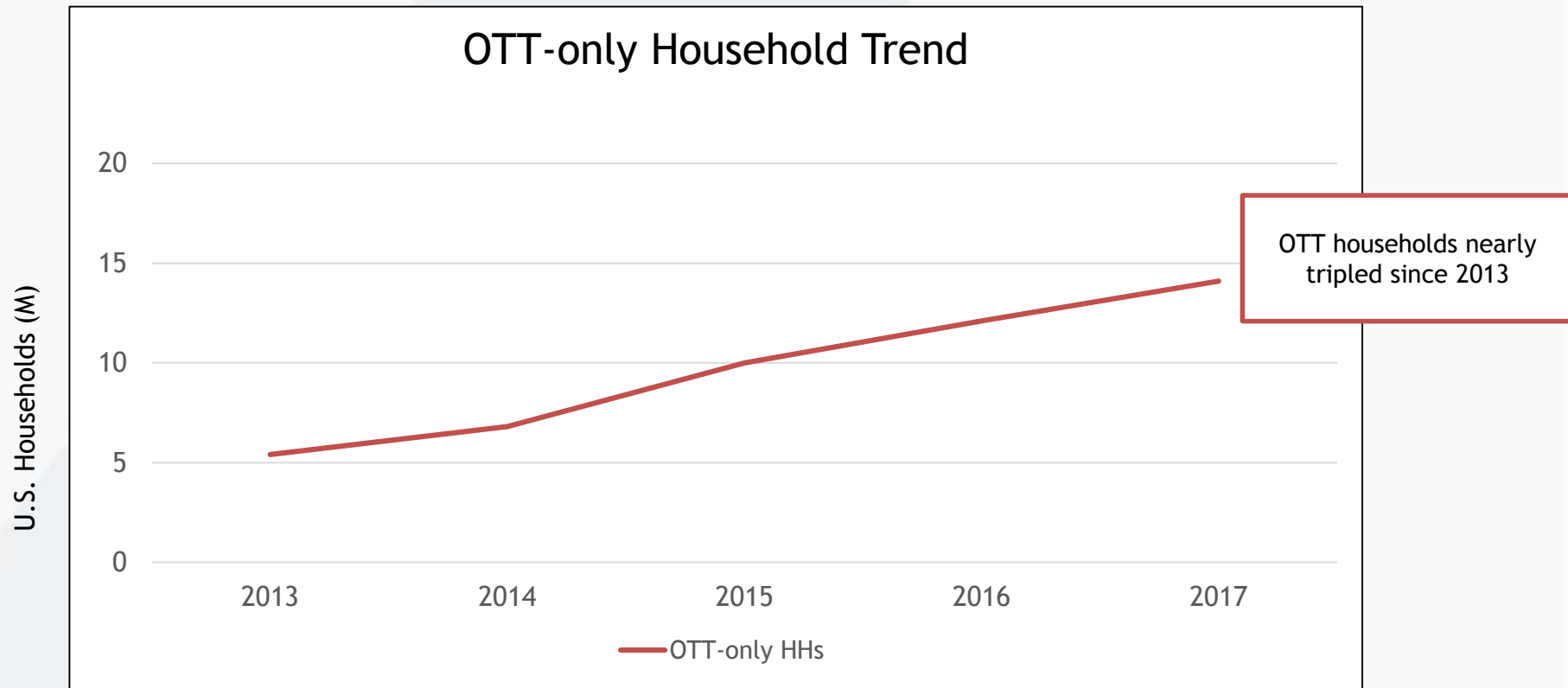
# OTT Streaming Services & Devices Ecosystem



VAB: YOU DOWN WITH OTT?

Note: the above reflects a representative sampling of services and devices and each segment does not necessarily reflect every offering available.

# OTT Households Are Growing And Currently Represent 14.1MM Homes...

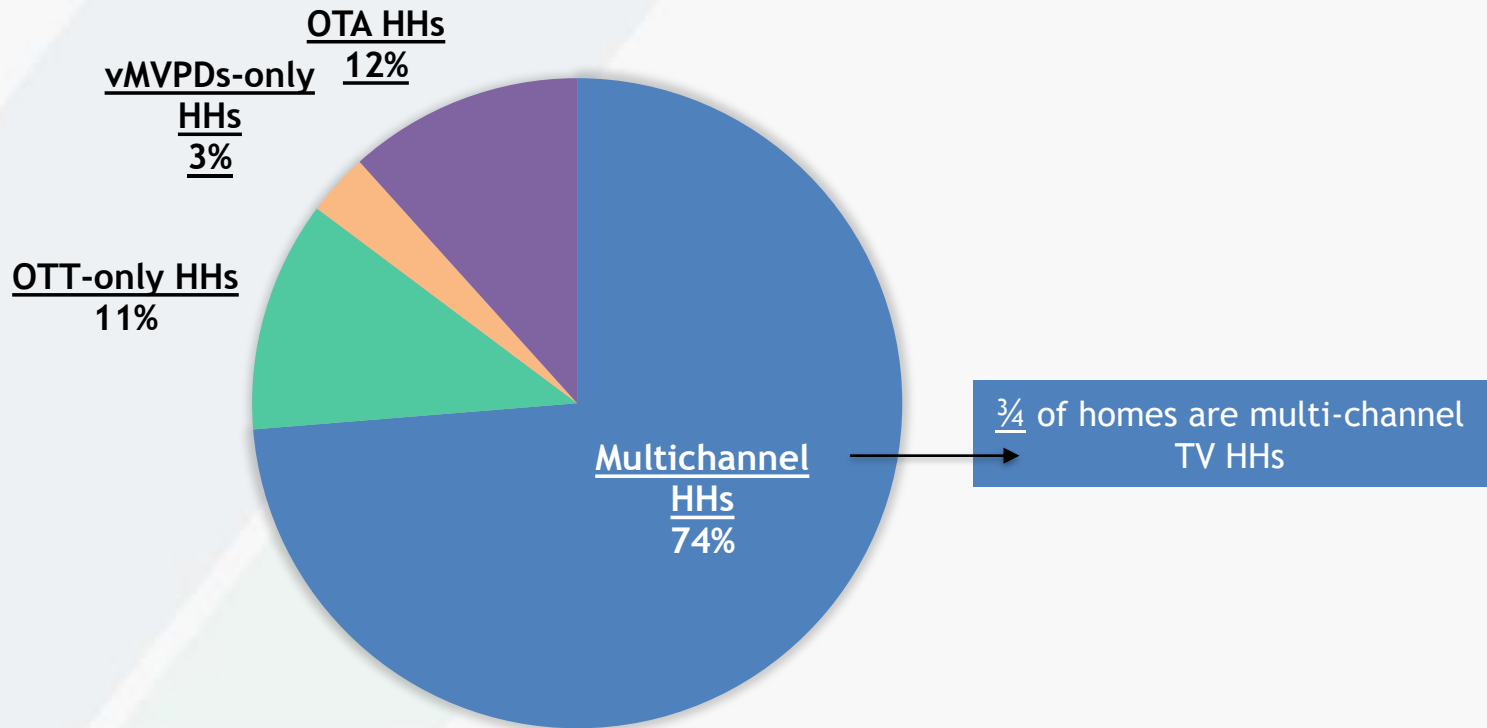


Source: 2017 S&P Global Market Intelligence, Kagan. 2013 and 2014 data as of June 2014; 2015-2017 data as of June 2017.

- OTT HHs (multichannel substitutes) are HHs that rely on unmanaged Internet or OTT delivery to view television shows or movies in lieu of a traditional multichannel subscription. Figure does not include subscribers to virtual service providers such as Sling TV, PlayStation Vue or DIRECTV NOW.
- Virtual service providers (vMVPDs) characterized by unmanaged (Internet/OTT) delivery of aggregated live, linear networks and on-demand content similar to a traditional multichannel offering for a monthly subscription

# ...Which Translates To 11% Of TV Homes; However Three-Fourths Of All Homes Are Multi-channel TV Households

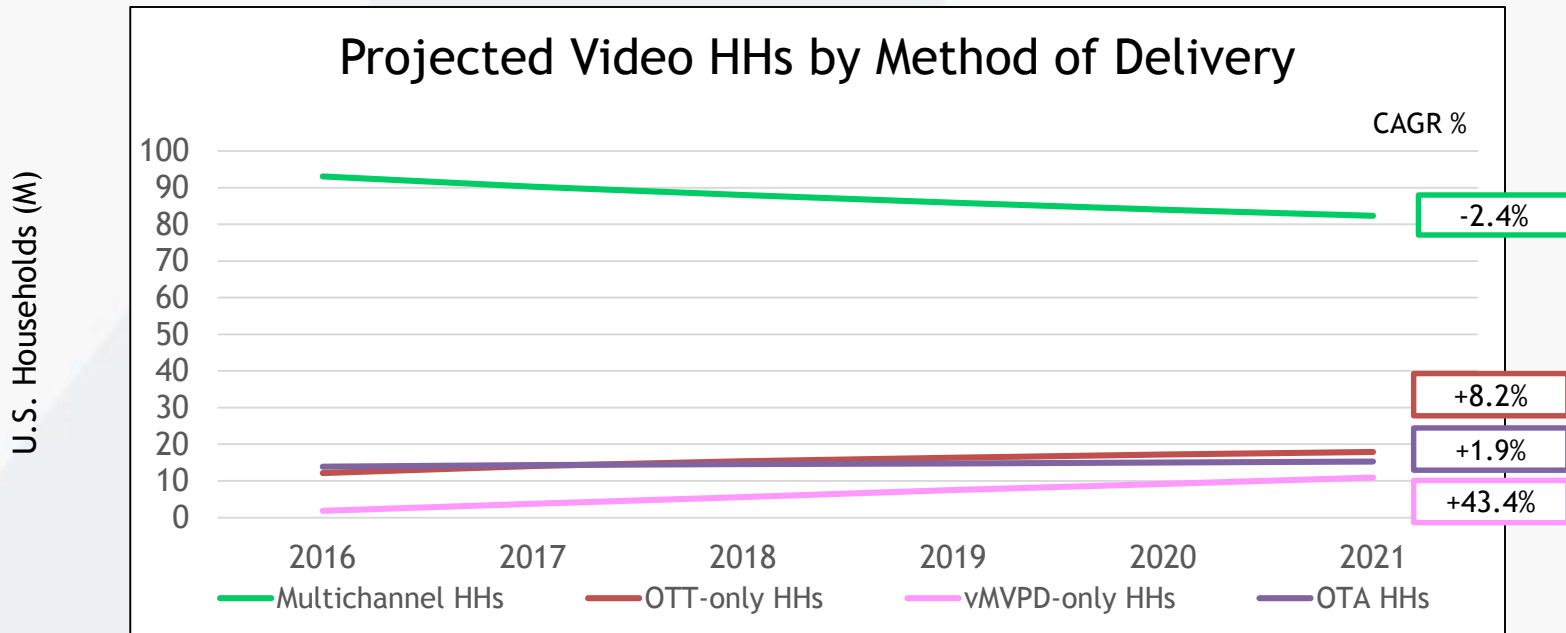
## Video HHs by Method of Delivery 2017



Source: 2017 S&P Global Market Intelligence, Kagan. As of June 2017.

(1) Multichannel HHs - Residential multichannel household count excludes DBS overlap created by households taking multiple multichannel subscriptions. Includes cable, DBS, telco and other multichannel platforms. Excludes commercial subs. (2) OTT HHs (multichannel substitutes) are HHs that rely on unmanaged Internet or OTT delivery to view television shows or movies in lieu of a traditional multichannel subscription. Figure does not include subscribers to virtual service providers such as Sling TV, PlayStation Vue or DIRECTV NOW. (3) Virtual service providers (vMVPDs) characterized by unmanaged (Internet/OTT) delivery of aggregated live, linear networks and on-demand content similar to a traditional multichannel offering for a monthly subscription. (4) OTA HHs - Households that receive broadcast network signals using an antennae. Does not exclude households that also access OTT content

# While MVPD Subscriptions Will Maintain A Large Share Of HHs, OTT-Only HHs Are Projected To Grow to 17.9MM Homes By 2021

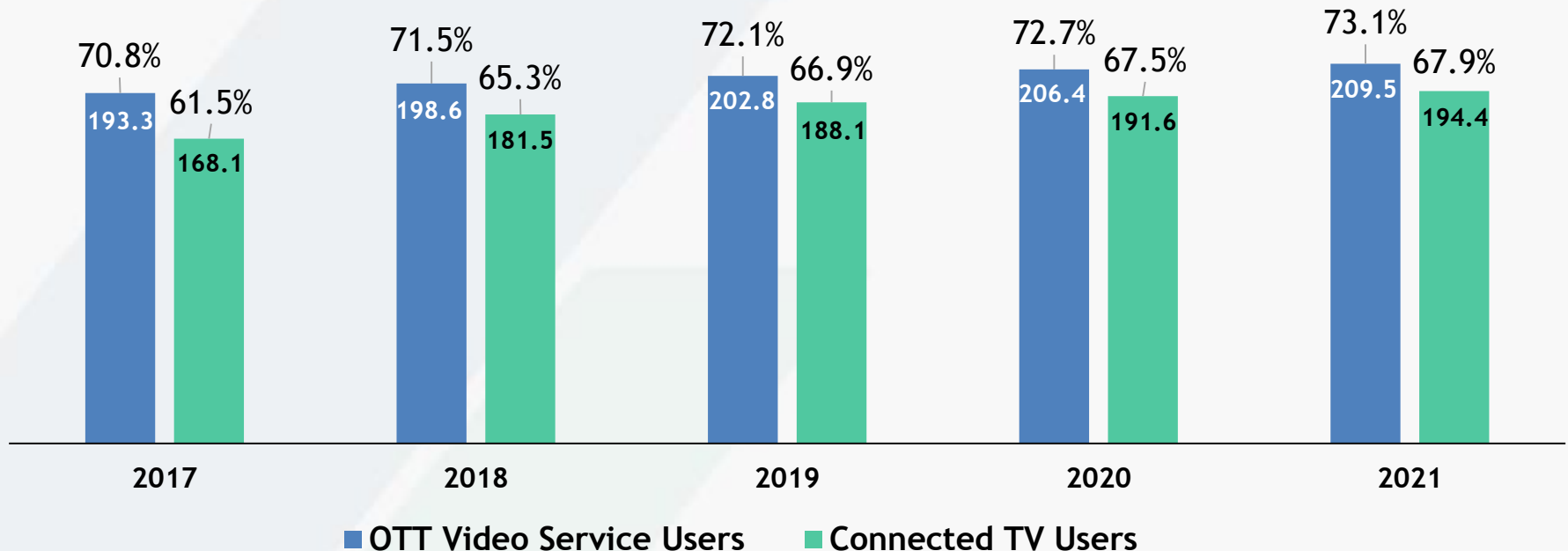


Source: 2017 S&P Global Market Intelligence, Kagan. As of June 2017.

(1) Multichannel HHs - Residential multichannel household count excludes DBS overlap created by households taking multiple multichannel subscriptions. Includes cable, DBS, telco and other multichannel platforms. Excludes commercial subs. (2) OTT HHs (multichannel substitutes) are HHs that rely on unmanaged Internet or OTT delivery to view television shows or movies in lieu of a traditional multichannel subscription. Figure does not include subscribers to virtual service providers such as Sling TV, PlayStation Vue or DIRECTV NOW. (3) Virtual service providers (VSPs) characterized by unmanaged (Internet/OTT) delivery of aggregated live, linear networks and on-demand content similar to a traditional multichannel offering for a monthly subscription. (4) Households that receive broadcast network signals using an antennae. Does not exclude households that also access OTT content

# By 2021, About 200 Million US Consumers Will Use An OTT Video Service Or Connected TV At Least Once Per Month

## US OTT Video Service Users and Connected TV Users *Millions and % of Internet Users*



# = users in millions

Source: eMarketer, July 2017, "Programmatic Connected TV And OTT Video Advertising: Automation, Audience Attracts Digital And TV Ad Buyers.". Note: "OTT Video Service Users" reflect individuals of any age who watch video via any app or website at least once per month that provides steaming video content over the internet and bypasses traditional distribution; examples include HBO Now, Hulu, Netflix and YouTube. "Connected TV Users" reflect individuals of any age who use the internet through a connected TV at least once per month.

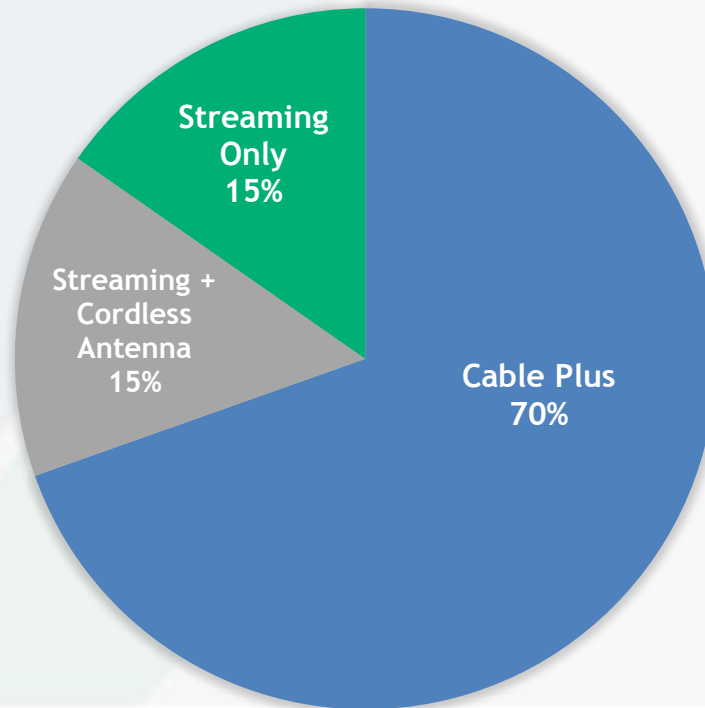
## The Math of OTT: *More Access To More Content*

**70% of OTT households also have an MVPD subscription**

# The Overwhelming Majority Of OTT Users Also Have A Cable or Satellite Subscription

Looking at those households that have OTT capabilities, 70% *also* have a Cable+ subscription

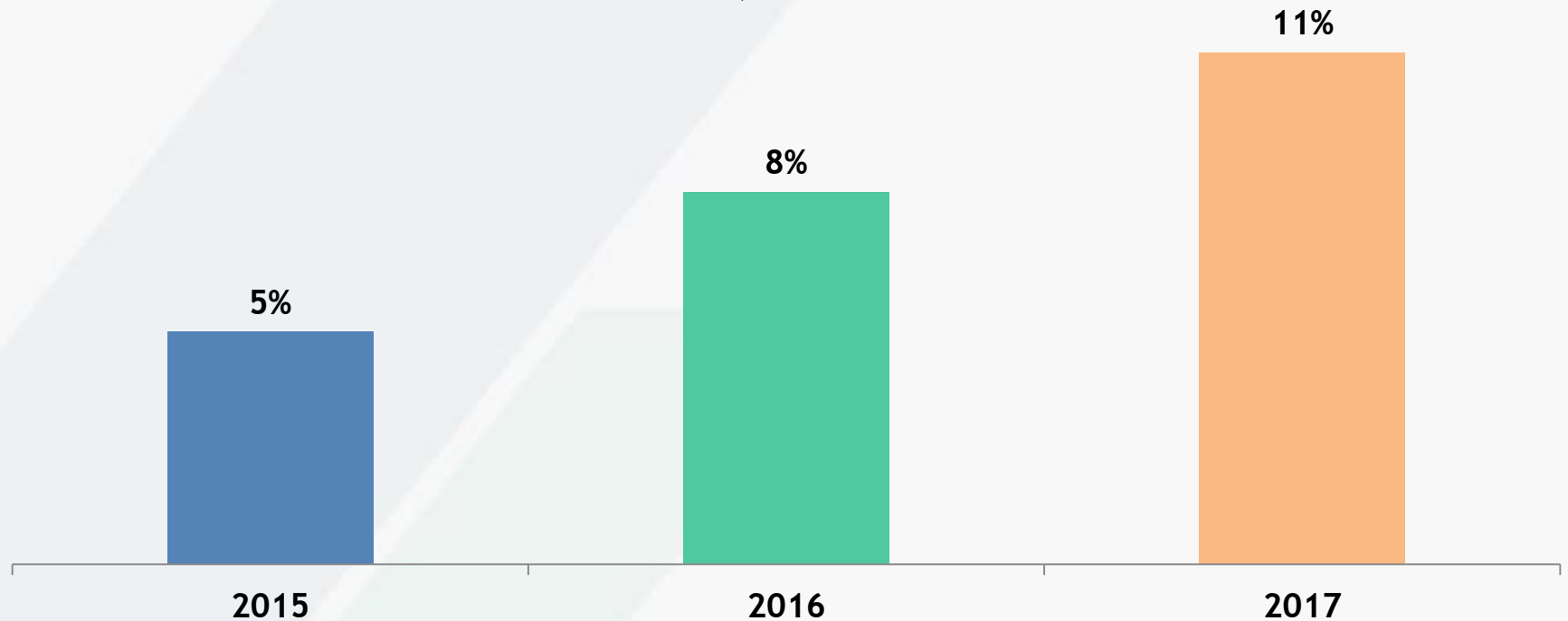
Over-the-Top (OTT) Households by Service Type



VAB: YOU DOWN WITH OTT?

# Because Of This, Streaming - While Growing - Still Only Accounts for a Fraction of Total “TV” Viewing Hours...

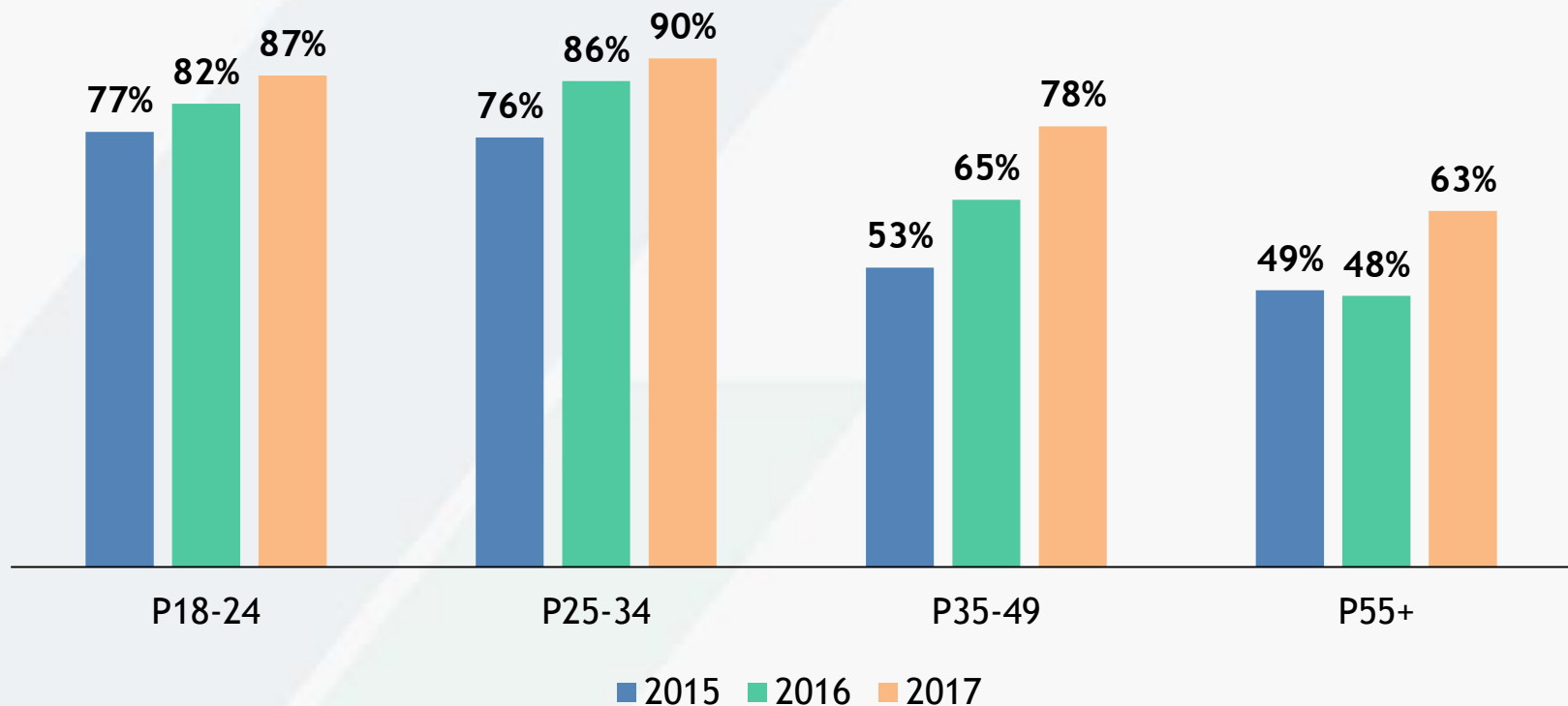
Streaming’s Share of TV Viewing Hours  
A18-49, October 2017



VAB: YOU DOWN WITH OTT?

# ...Even As The Number Of People That Access TV Content From The Internet Grew By Double-Digits Over The Last Two Years

## Do You Access TV Content From The Internet?



### VAB: YOU DOWN WITH OTT?

Source: PwC Consumer Intelligence Services video survey, 2017 from “Consumer Intelligence Series: I stream, you stream” Report.  
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# Let's Take A Closer Look At Connected Devices...

## Devices / Platforms

Internet Streaming Players e.g. **ROKU**  
 **amazon fireTV**

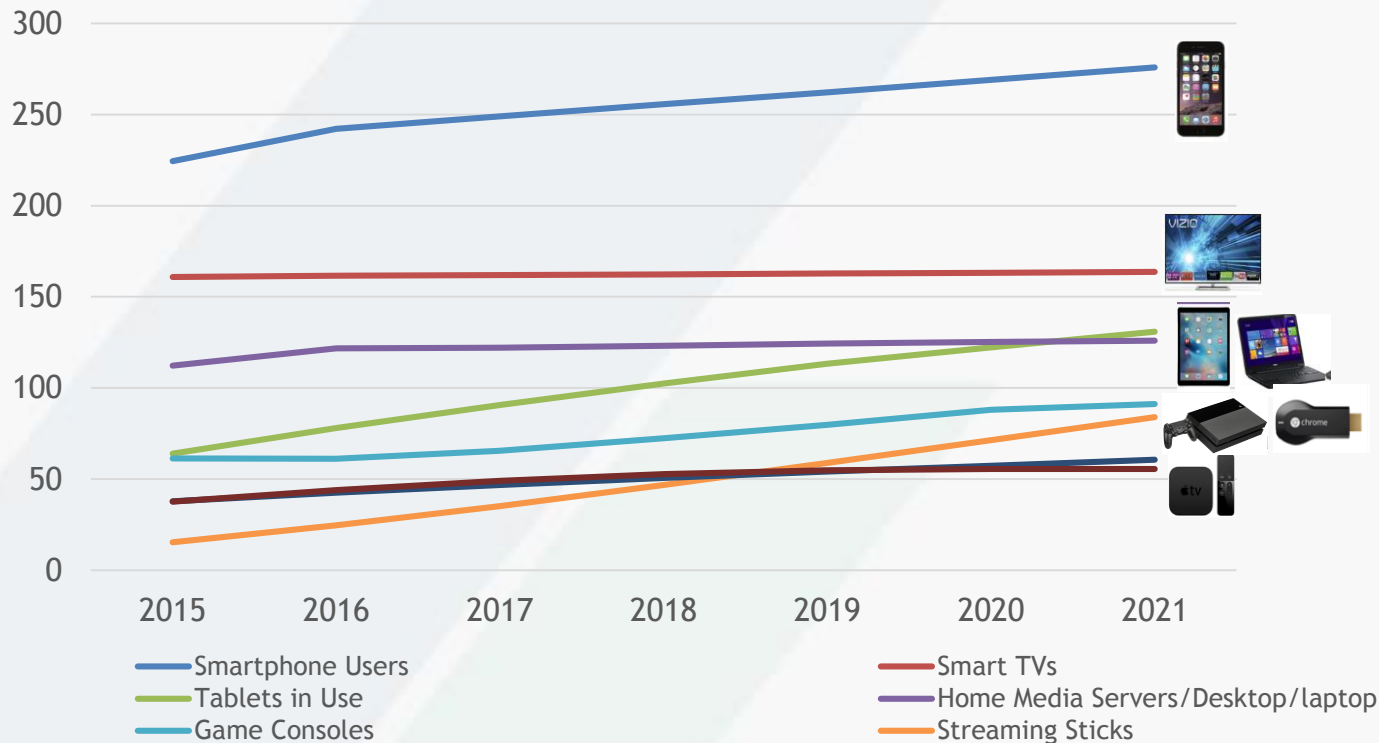
Game Consoles e.g.  **PS4** **WiiU**  
 **XBOX ONE**

Connected TVs e.g.  **LG Electronics** **VIZIO**

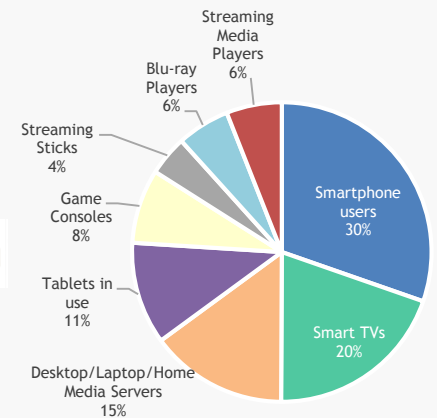
# There Are Currently 820 Million Connected Video Devices in the U.S.

The largest segments are smartphones (30% of devices), smart TVs (20%) and PCs/Home Media Servers (15%)

## U.S. Connected Devices, 2015 - 2021 (in millions)



## 2017 device ownership

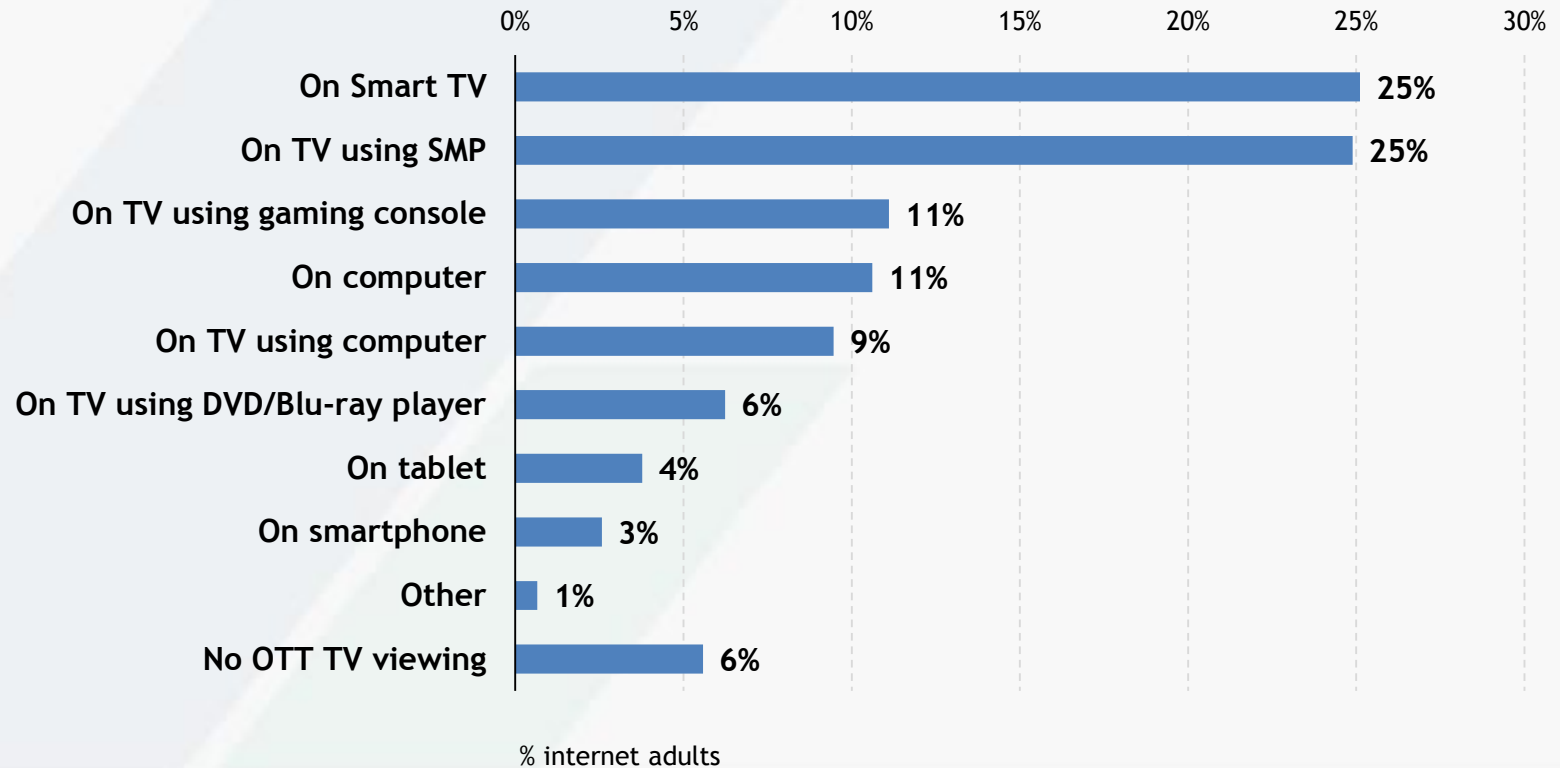


Source: 2017 SNL Kagan, a division of S&P Global Market Intelligence. As of October 2017.

- (1) Gaming Consoles - Includes the subset of game consoles that are connected to the Internet such as Sony Playstation, Microsoft Xbox and Nintendo Wii.
- (2) Streaming Media Players - Includes installed base of Internet-connected standalone set-tops designed for online video viewing such as AppleTV, Roku, GoogleTV, standalone TiVo and other devices.
- (3) Streaming Sticks - Includes installed base of streaming sticks designed for online content viewing such as Chromecast and the Roku Streaming Stick, often in conjunction with another connected device.
- (4) Tablets - Excludes enterprise tablets in use.

# The Preferred Device For Viewing Streaming Video Is The Television, Either On a Smart TV Or On A TV Using a Streaming Media Player

Preferred method of watching online video



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# Viewing On-Demand Video Content Is A Top Activity Across All Connected TV Devices

Smart TV Activities	% of Device Owners
Viewed SVOD Content	70%
Viewed Live Sports	53%
Viewed TV Everywhere Content	43%
Viewed Premium Network VOD	34%
Streamed Online Music	30%
Download Online Rented Video	27%
Download Online Purchased Video	24%
Played a Video Game	22%
Purchased Physical Goods	13%

Streaming Media Player Activities	% of Device Owners
Viewed SVOD Content	71%
Viewed TV Everywhere Content	41%
Streamed Online Music	34%
Viewed Premium Network VOD	29%
Viewed Live Sports	27%
Download Online Rented Video	26%
Download Online Purchased Video	25%
Played a Video Game	14%
Purchased Physical Goods	12%

Gaming Console Activities	% of Device Owners
Played a Video Game	73%
Viewed SVOD Content	43%
Streamed Online Music	22%
Viewed TV Everywhere Content	21%
Viewed Premium Network VOD	19%
Download Online Purchased Video	16%
Download Online Rented Video	16%
Viewed Live Sports	15%
Purchased Physical Goods	11%

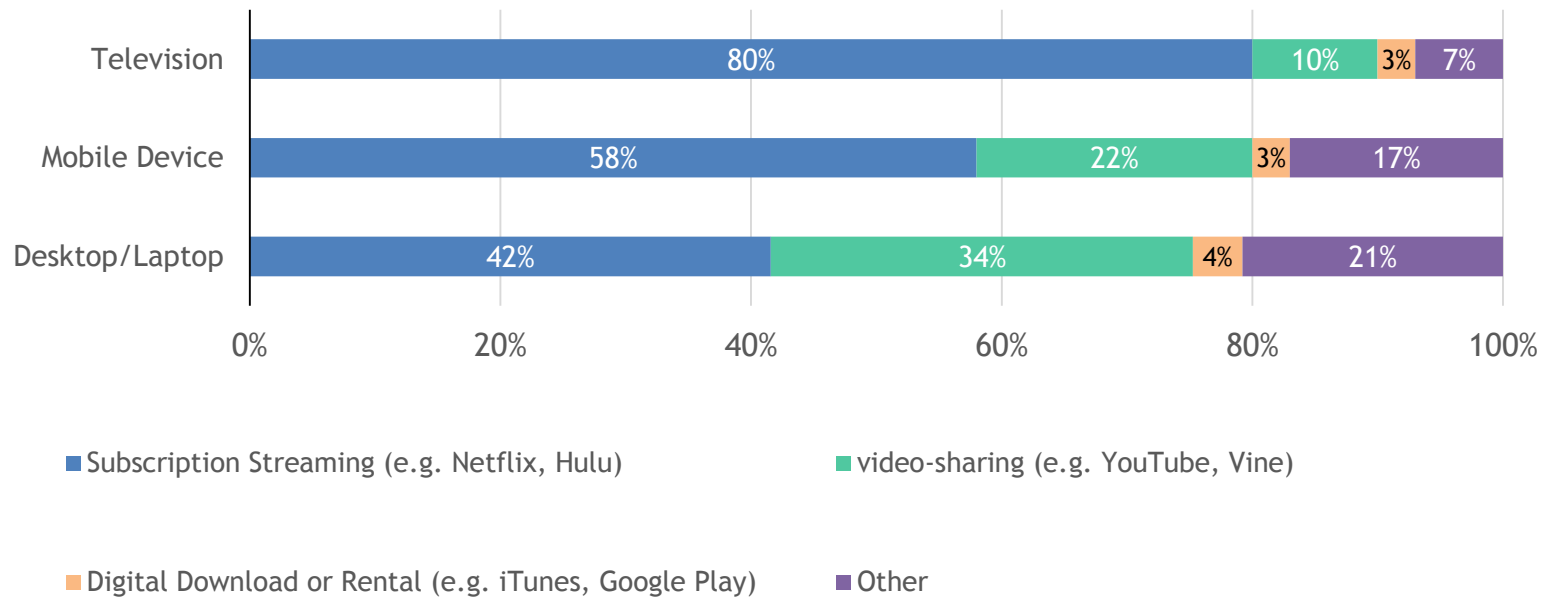
VAB: YOU DOWN WITH OTT?

Source: 2017 SNL Kagan, a division of S&P Global Market Intelligence, excludes "watching TV" for smart TV activities.

# The Majority Of Long-Form Streaming Occurs On A Television

Viewers prefer watching longer-form streaming video on a TV, and secondly on Mobile devices

Primary type of service used to access video, by device



VAB: YOU DOWN WITH OTT?

# Streaming Sticks/Boxes & Smart TVs Are The Most Popular “Primary” OTT Streaming Devices

## Streaming Sticks/Boxes



**38 MM**  
U.S. HHs  
with this device



**73%**  
Of these HHs used their  
streaming stick/box to  
stream OTT

## Smart TVs



**28 MM**  
U.S. HHs  
with this device



**63%**  
Of these HHs used their  
smart TV to stream OTT

# It's Projected That Smart TVs Will Widen Their Penetration Gap Against The Next Largest Connected TV Device By 2021

## US Connected TV Users, by Device 2016-2021 (Millions)

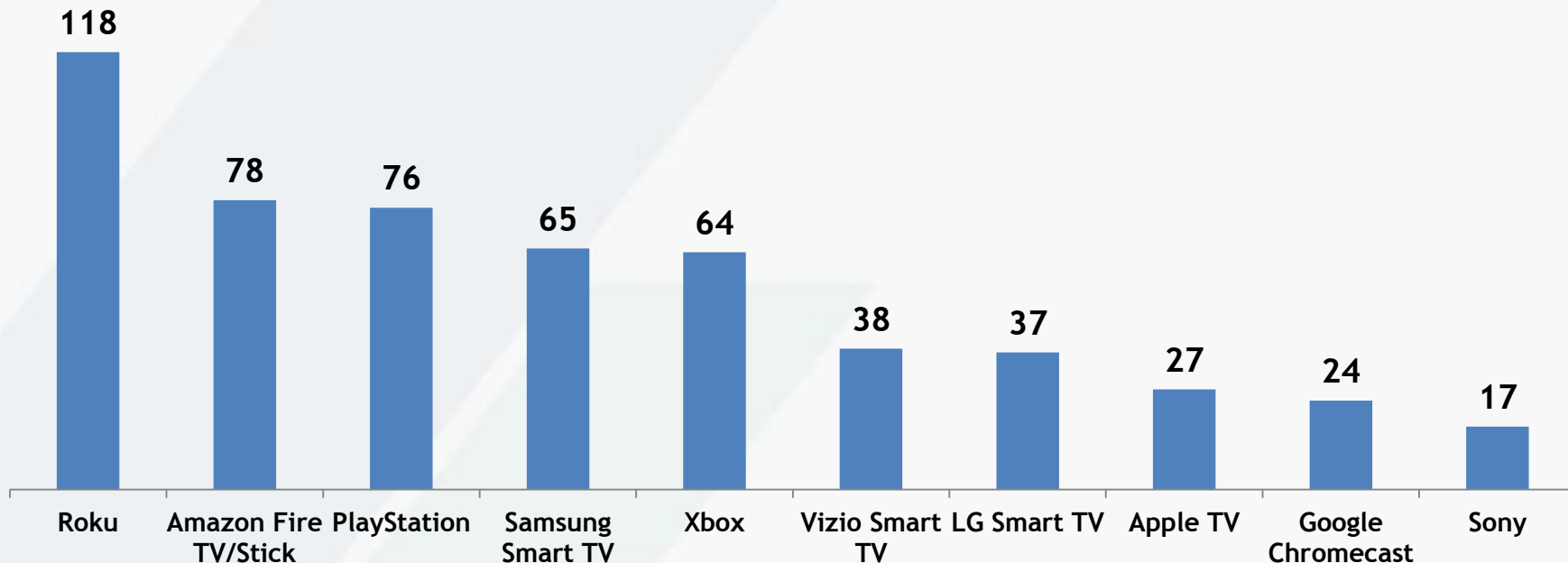
	2016	2017	2018	2019	2020	2021
Smart TV	62.0	81.2	94.2	102.6	109.3	114.3
Connected Game Console	58.4	62.8	66.5	69.5	71.8	73.9
Roku	32.6	38.9	45.9	53.4	61.3	69.0
Google Chromecast	29.9	36.9	44.5	51.8	58.3	64.6
Amazon Fire TV	26.3	35.8	44.1	50.8	56.1	62.6
Blu-Ray Player	29.0	29.0	29.0	29.0	29.0	29.0
Apple TV	19.9	21.3	22.6	23.6	24.4	25.2
<b>Total</b>	<b>152.7</b>	<b>168.1</b>	<b>181.5</b>	<b>188.1</b>	<b>191.6</b>	<b>194.4</b>

### VAB: YOU DOWN WITH OTT?

Source: eMarketer, August 2017, "Programmatic Connected TV And OTT Video Advertising: Automation, Audience Attracts Digital And TV Ad Buyers."  
Note: reflects individuals of any age who use the internet through a connected TV at least once per month. The total reflects the US connected TV user universe, therefore figures by device are not additive for the total.

# Roku Has The Highest Cumulative Weekly Time Spent Out Of All The Devices Available For Viewing OTT Content

Aggregate Weekly Hours (MM)  
of Internet Video Consumption by Device



VAB: YOU DOWN WITH OTT?

## The Math of OTT: *More Choice*

There's been an eight-fold increase recently in people who have access to 3+ OTT subscription services

# Let's Take A Closer Look At Streaming Services...

## Streaming Services

OTT Aggregators e.g.



Standalone TV  
(Authenticated Apps) e.g.

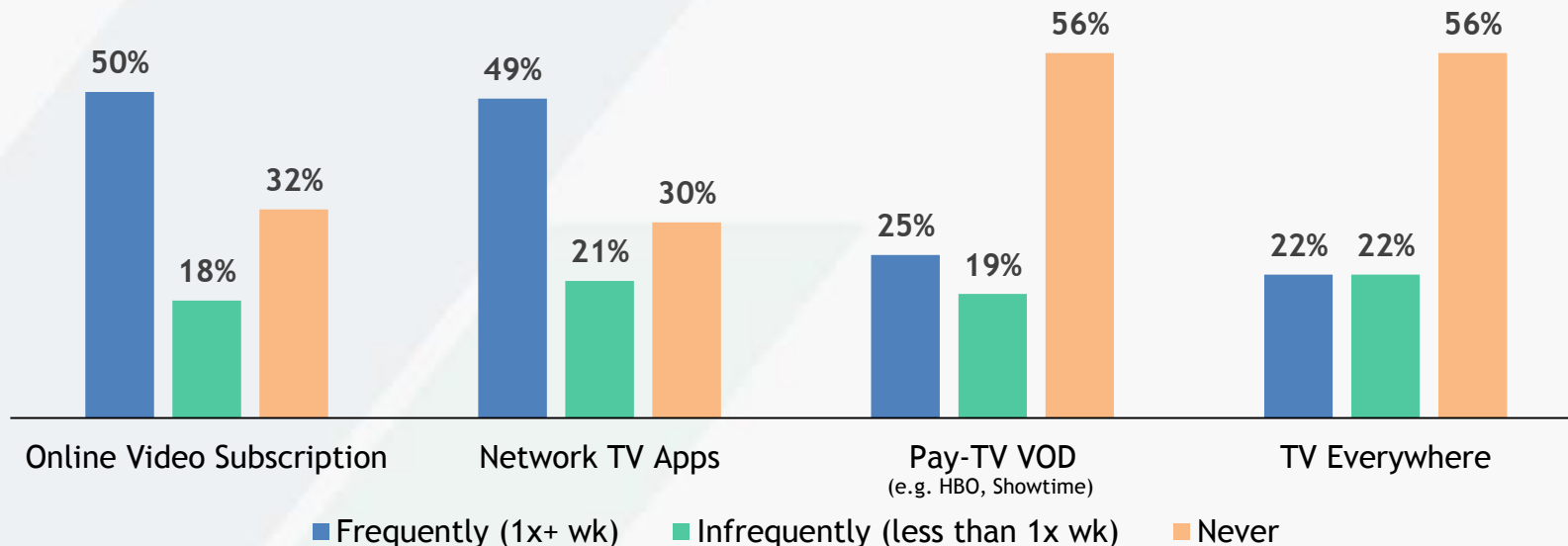


Subscription e.g.  
(with "limited commercial" option)



# 50% Of Internet Users Access An Online Video Subscription Once A Week, Followed Closely By Network TV Apps

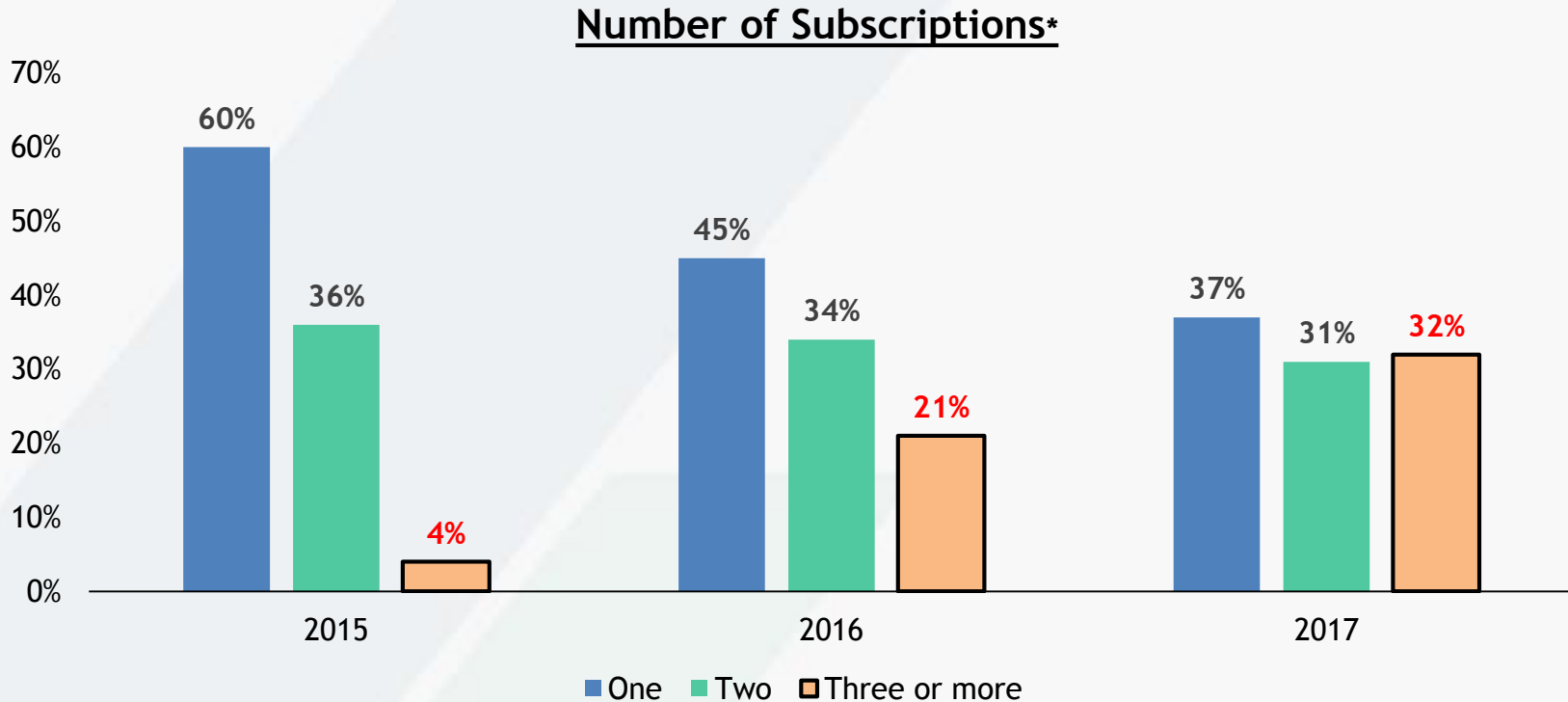
## Frequency of Viewing



### VAB: YOU DOWN WITH OTT?

Source: 2017 SNL Kagan, a division of S&P Global Market Intelligence; U.S. 3Q 2017 Survey Summary Report. Base: 2,526 A18+ internet users.  
Q. Over the past three (3) months, how often did you perform these activities?

# Nearly One-Third of OTT Subscribers Hold 3 or More Means of Accessing OTT Content, An Eight-Fold Increase vs. Just 2 Years Ago

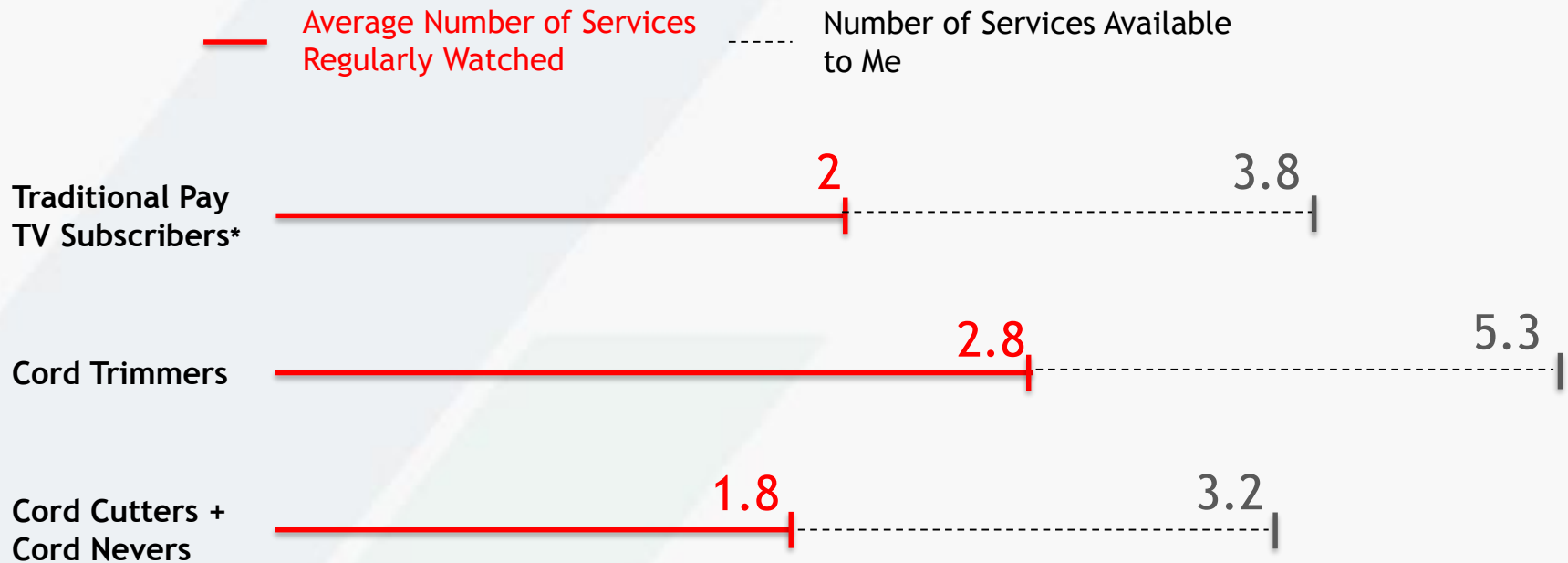


\*'Subscriptions' includes Netflix, Hulu, Amazon, Network Standalones (HBO Now, CBS All Access, etc.) and vMVPDs (Sling, YouTube TV, etc)

VAB: YOU DOWN WITH OTT?

# However, Consumers Actually Only Watch Half Of The Subscription Video Services That They Have Access To

## Number of Services Available to Me\* vs. Number of Services I Watch Regularly



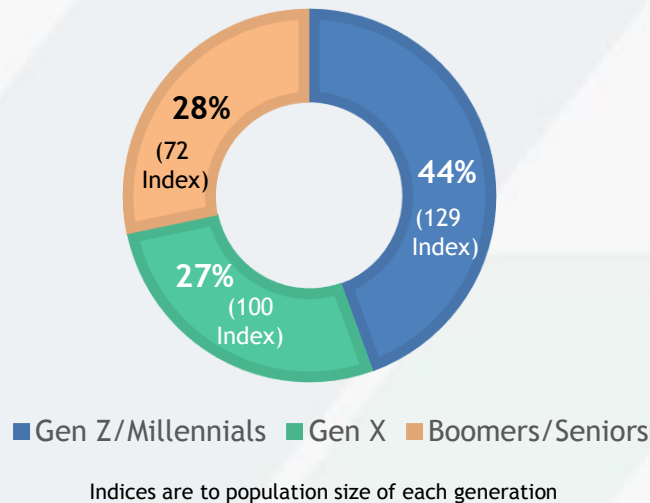
### VAB: YOU DOWN WITH OTT?

Source: PwC Consumer Intelligence Services video survey, 2017 from “Consumer Intelligence Series: I stream, you stream” Report.

© 2017 PricewaterhouseCoopers LLP, a Delaware limited liability partnership. \*Due to heightened levels of password sharing, PwC reports on access to a service rather than subscription to a service. \* Reflects Cable/Telco/Satellite subscribers

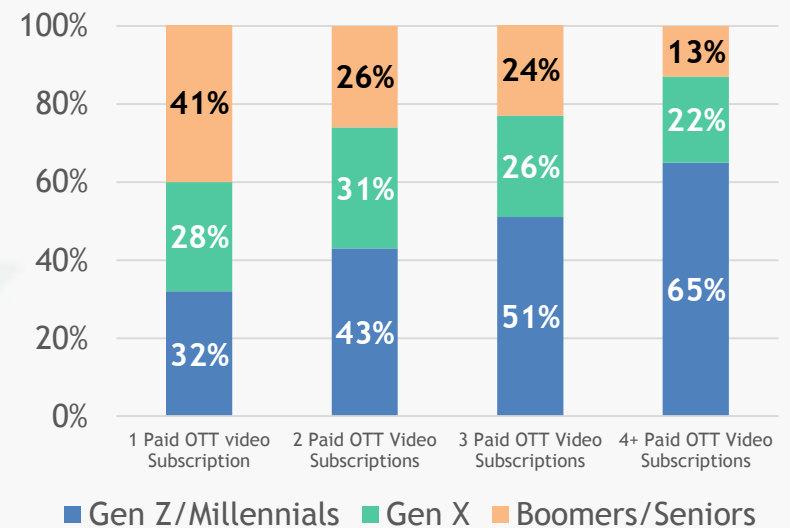
# Millennials And Gen X Are Most Likely To Be Streaming OTT Content And Are Highly Likely To Have 4+ Subscriptions

SVOD usage is seen across all generations, with heaviest concentration in Millennials & Gen Z



The # of subs is highest for the younger generations

% SOV users by generation

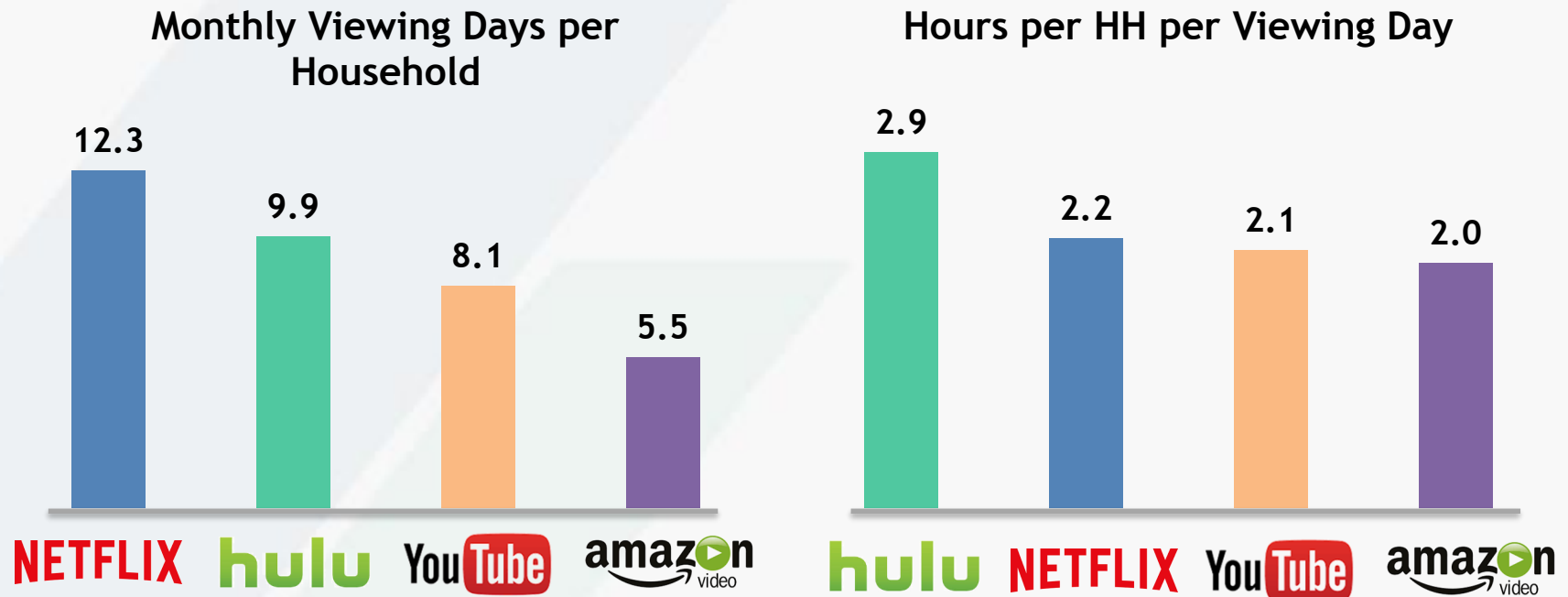


VAB: YOU DOWN WITH OTT?

# Currently, The Four Major OTT Streaming Services (+YouTube) Average 2+ Hours Of Usage Per Viewing Day Per User Household

However, this usage pales in comparison to ad-supported TV which averages 7.9 hours of usage per active TV household everyday

## Viewing Metrics for Selected Over-the-Top (OTT) Streaming Services

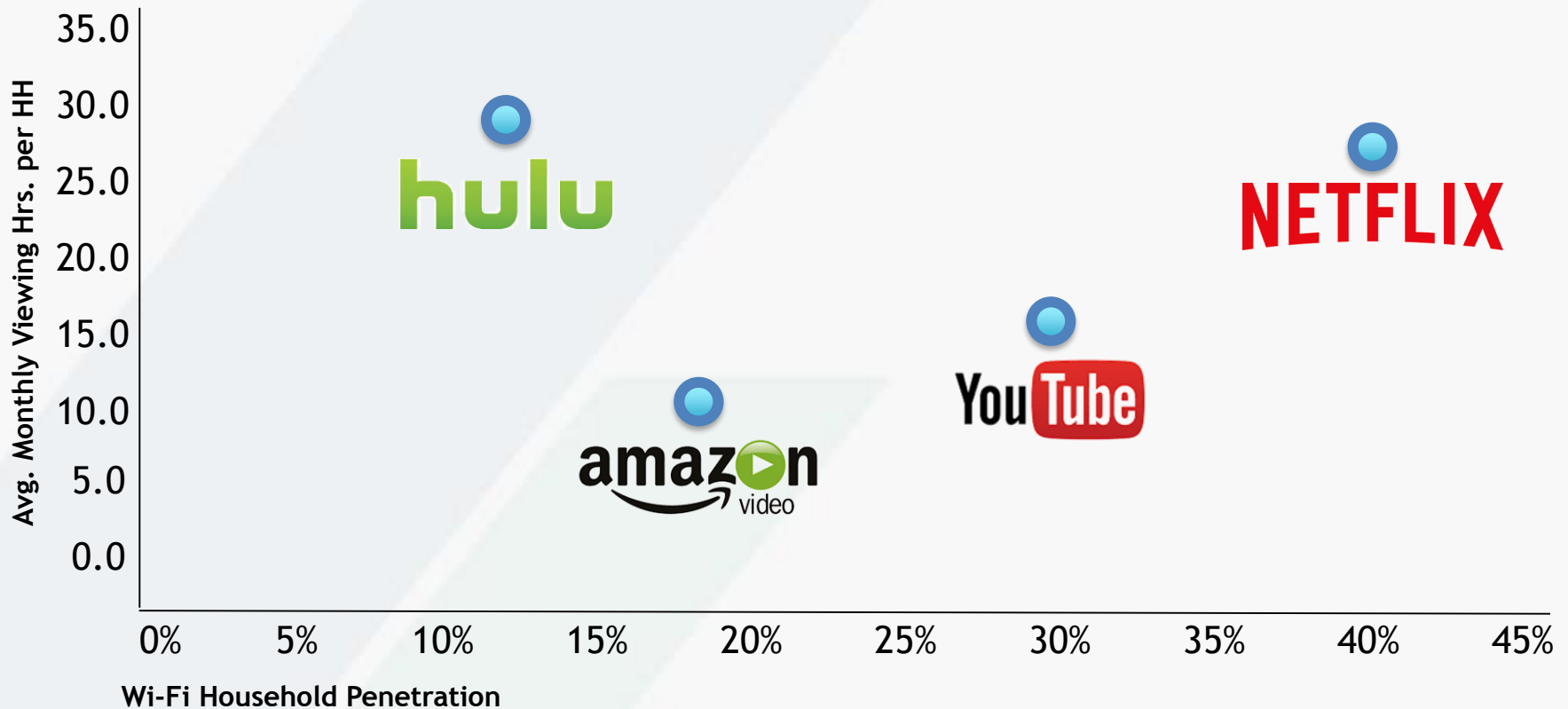


VAB: YOU DOWN WITH OTT?

Source: comScore OTT Intelligence, U.S., April 2017; streaming usage based on consumption across TV-connected devices only. TV data based on Nielsen Npower R&F Time Period Report, 4/1/17 - 4/30/17, Total Day, Live+SD, Households, ad-supported cable TV + broadcast TV.

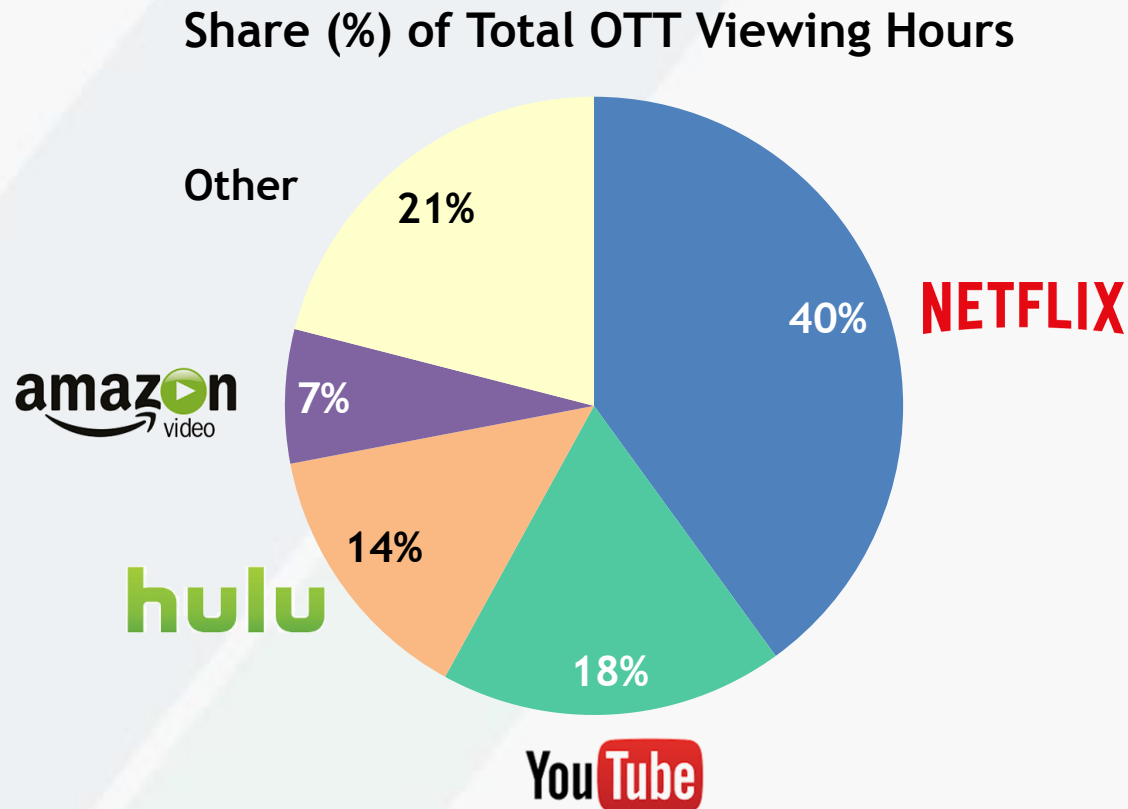
# While Netflix Leads Major OTT Streaming Services In HH Penetration, It Trails Hulu For The Most Streaming Hours Per HH

Selected Over-the-Top (OTT) Streaming Services by Wi-Fi Household Penetration & Engagement



*How to read the chart:* Netflix is watched in 40% of Wi-Fi households for an average of 27 hours per month per user household

# The Four Major OTT Streaming Services Account For Nearly 80% Of OTT Viewing Time For OTT Households

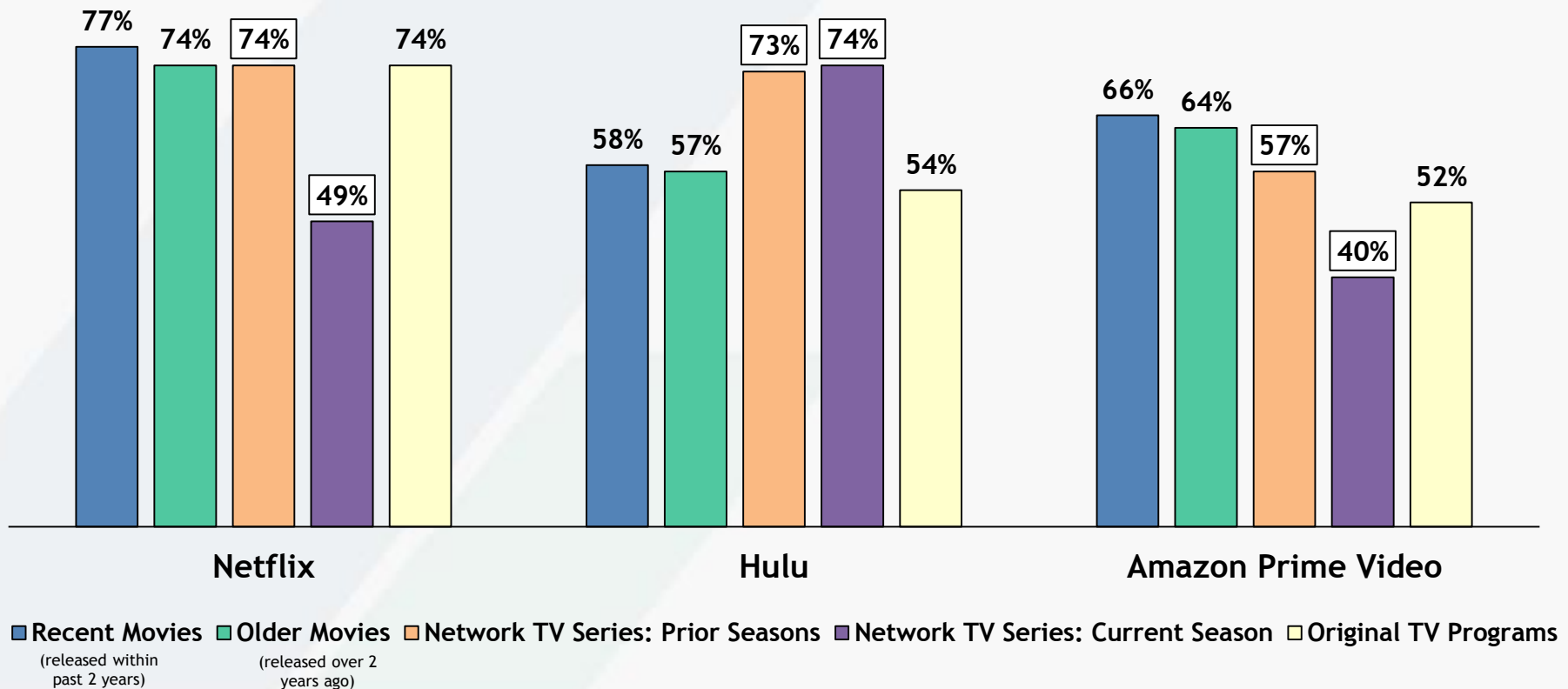


VAB: YOU DOWN WITH OTT?

Source: comScore OTT Intelligence, U.S., April 2017; streaming usage based on consumption across TV-connected devices only.

# Among The Major SVOD Services, Acquired Network TV Content Is As Popular, Or Even More Popular, Than Original Series

## Content Types Viewed on Netflix, Hulu & Amazon Prime Video

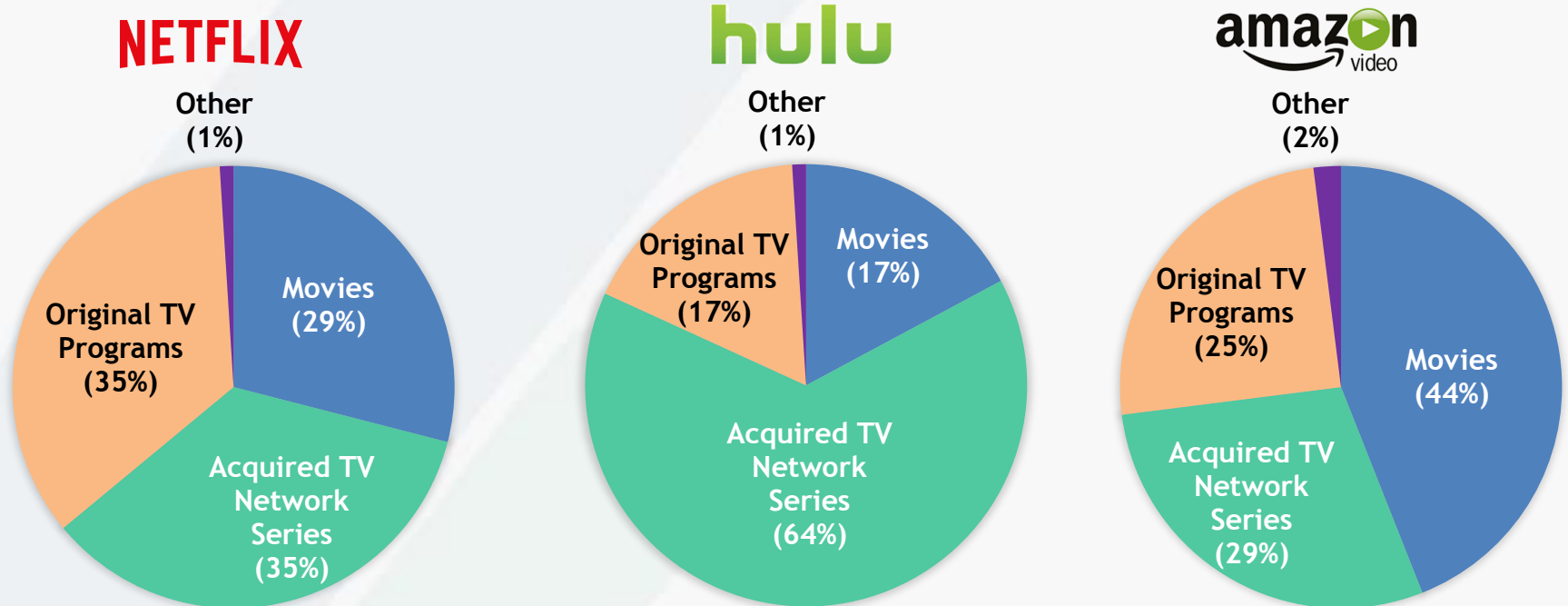


### VAB: YOU DOWN WITH OTT?

Source: Kagan, a media research group within the TMT offering of 2018 S&P Global Market Intelligence. Results from an online consumer survey conducted in September 2017, base: Netflix users - 1,480; Hulu users - 549; Amazon Prime Video users - 938. Question: You indicated that you currently have a subscription to (online video service). Which of the following types of video content do you view from the service?

# Collectively, Subscribers Also Find Acquired Network TV Series To Be More Enjoyable Than Original Content On These Services

## Content Most Enjoyed on Netflix, Hulu and Amazon Prime Video



Source: Kagan, a media research group within the TMT offering of 2018 S&P Global Market Intelligence. Results from an online consumer survey conducted in September 2017, base: Netflix users - 1,480; Hulu users - 549; Amazon Prime Video users - 938. Question: Of the content you view on (online video service) which would you say is the content you most enjoy viewing? "Movies" include recent movies (released within past 2 years) and older movies (released over 2 years ago). "Acquired Network TV Series" includes prior seasons of network TV series and current season of network TV episodes.

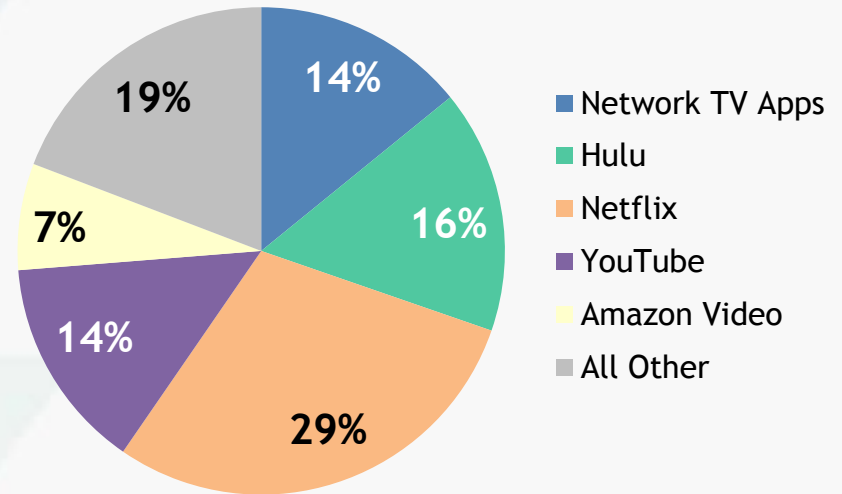
# Furthermore, Within Households That Watch Network TV Apps, These Apps + Hulu Account For More Viewing Time Than Netflix

## 10.1 MM HHs

That View Network TV Apps via OTT  
(on connected-TV devices)



TV Network App Households:  
Share (%) of Total OTT Viewing Time



VAB: YOU DOWN WITH OTT?

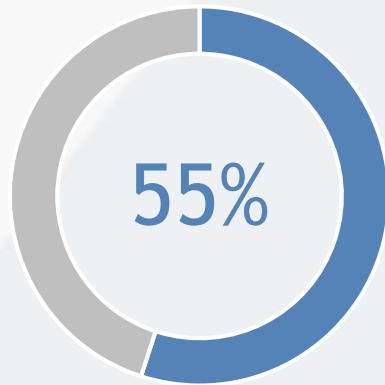
Source: comScore OTT Intelligence, U.S., April 2017. \*Network TV App definition excludes premium networks such as HBO and Showtime and Skinny Bundles such as Sling. HHs based on consumption across TV-connected devices only.

## The Math of OTT: *More Convenience*

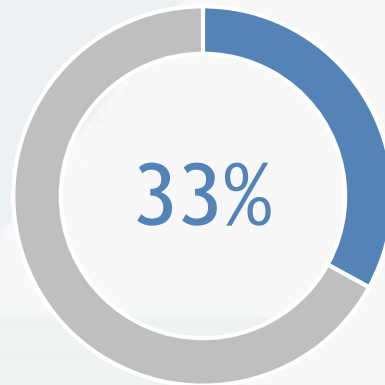
**81% of streamers say it's important to them to watch TV programs whenever they want**

# Many Consumers Don't Keep Their Video Subscriptions After Signing Up For A Trial Or Just Share Someone Else's Passwords

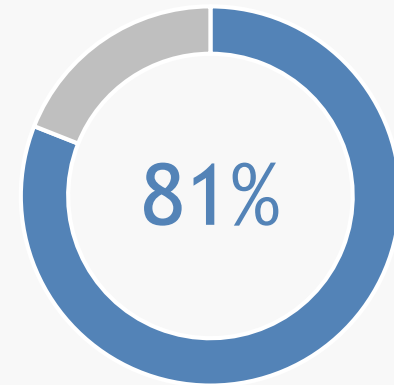
The #1 Reason for Ending a Subscription is "I didn't use it enough" (29%)



of Cord Trimmers "Regularly"  
Subscribe to a Trial Version of a  
Service



Don't Typically Keep the  
Subscription After the Trial  
Period is Over



of Focus Group Participants Report  
That They Share Passwords With  
Friends and Family

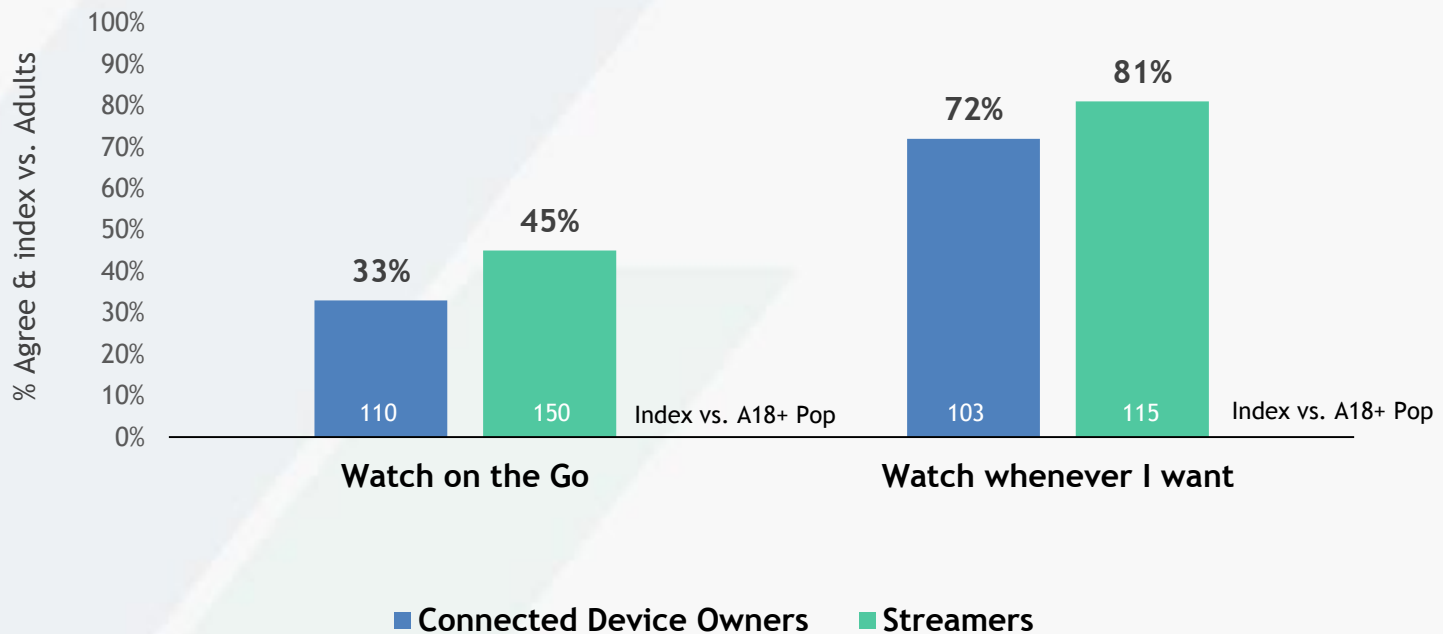
VAB: YOU DOWN WITH OTT?

Source: PwC Consumer Intelligence Services video survey, 2017 from "Consumer Intelligence Series: I stream, you stream" Report.  
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# OTT Is About Convenience, Both From A Time & Place Perspective

Flexibility on when and where they watch is important for OTT viewers

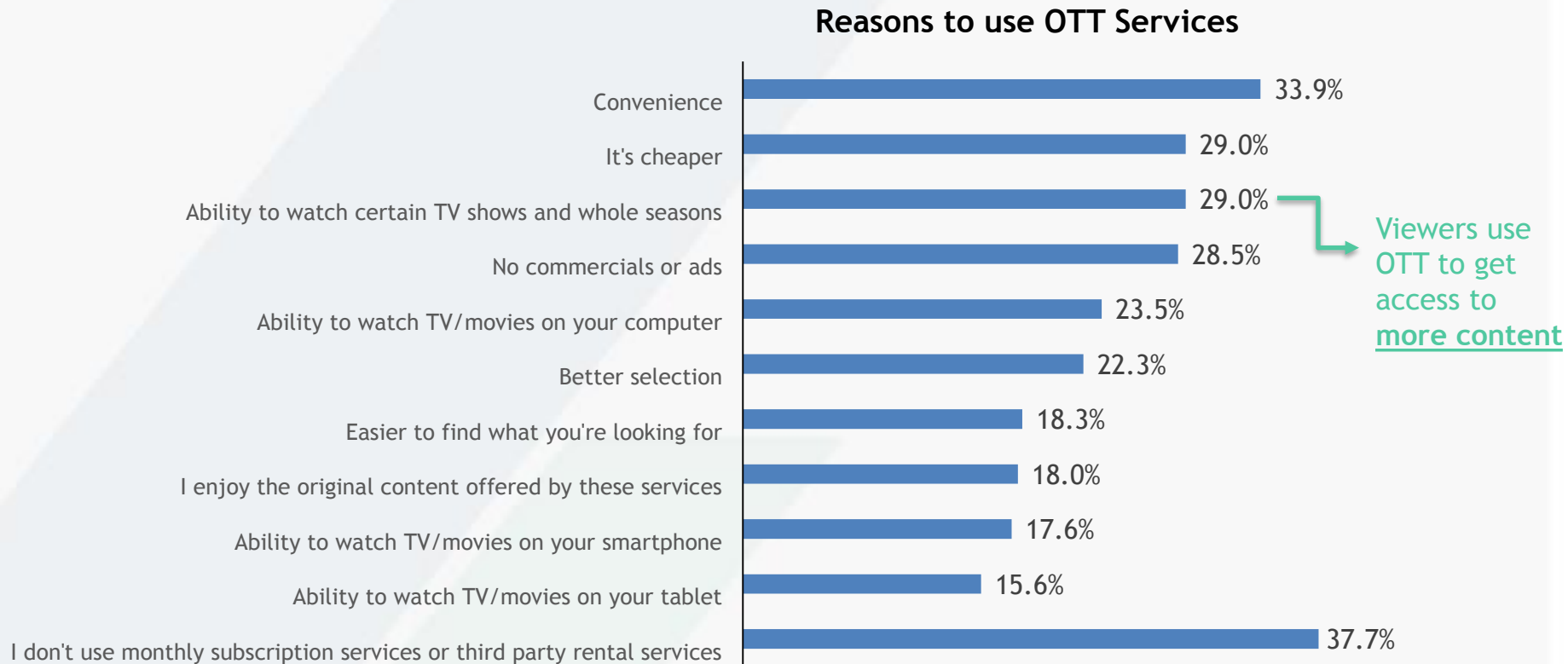
## Important to me when watching TV programs



### VAB: YOU DOWN WITH OTT?

Source: Gfk MRI 2016 Doublebase: Definitions - Connected Device Owner (Television Sets Most Recent Purchase-Features Smart TV/Internet Connectable or Internet Video Devices for TV Household Owns Any or All Household Owns Video Game Systems); Streamers Definition (Watch TV through a TV network's app or through another online streaming TV service.)

# Additional Research Continues To Validate That Convenience Is The Primary Reason Why Viewers Use OTT Services

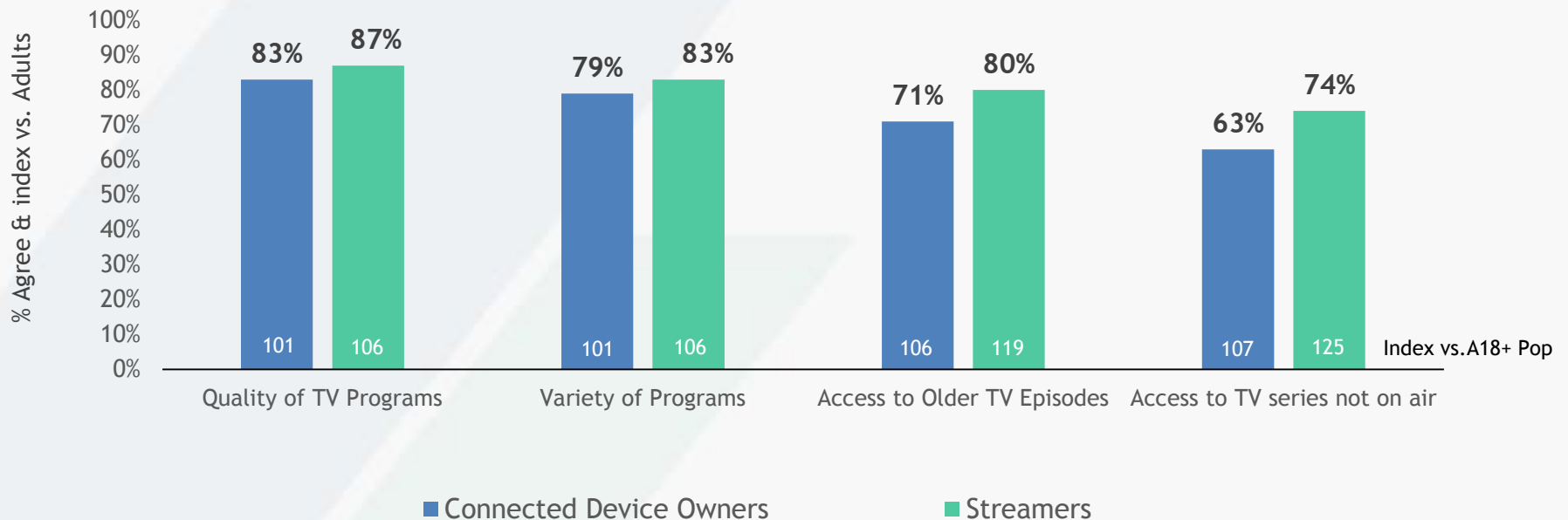


VAB: YOU DOWN WITH OTT?

# OTT Viewers Also Crave Quality, Engaging TV Programming

They also demand quality programming and access to a variety of library TV content

## Important to me when watching TV programs



### VAB: YOU DOWN WITH OTT?

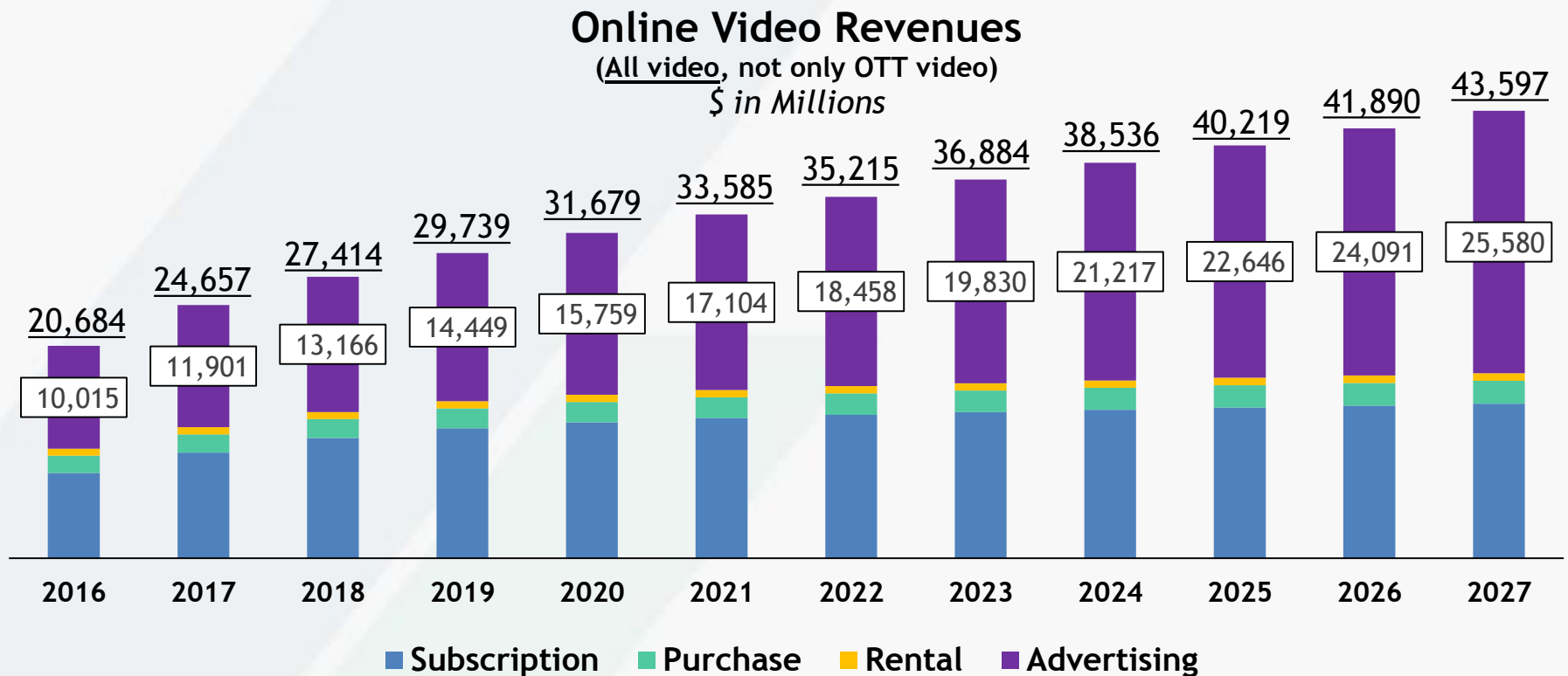
Source: Gfk MRI 2016 Doublebase: Definitions - Connected Device Owner Definition - (Television Sets Most Recent Purchase-Features Smart TV/Internet Connectable or Internet Video Devices for TV Household Owns Any or All Household Owns Video Game Systems); Streamers Definition - (Watch TV through a TV network's app or through another online streaming TV service.)

## The Math of OTT: *More* Advertising Opportunities

**65% of people who use a second screen while streaming have looked up info on a product advertised in a TV show**

# Advertising Is The Largest Revenue Model Across The *Entire* Online Video Ecosystem & Its Share Is Projected To Grow

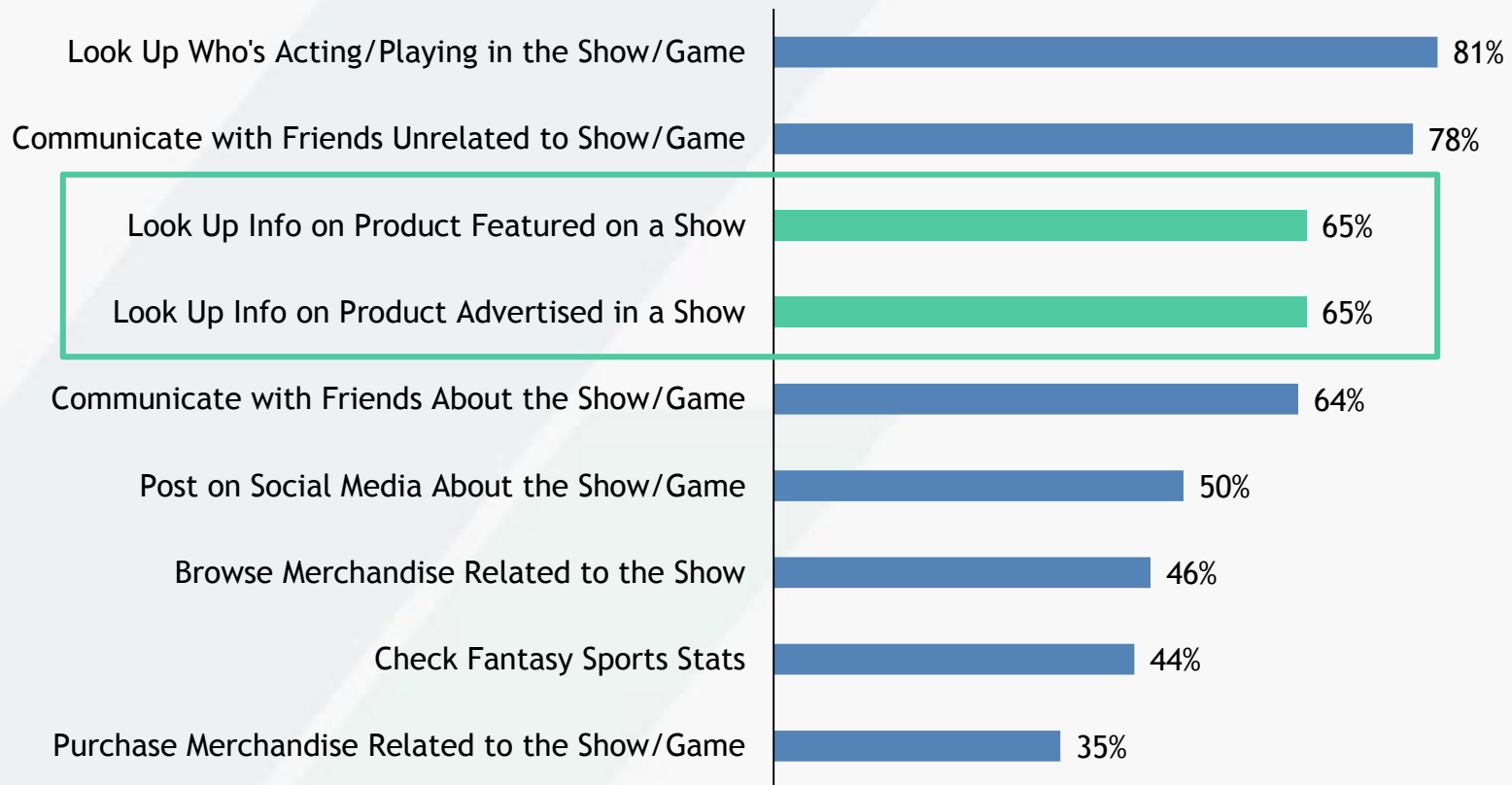
Currently, advertising comprises 45% of all online video revenue and is projected to grow to almost 60% over the next 10 years



VAB: YOU DOWN WITH OTT?

# Two-Thirds Of Second Screen Users Look Up Info About A Product They See While Streaming A TV Show

% of Those Using A Second Screen for Each of the Following  
(Frequently + Sometimes)



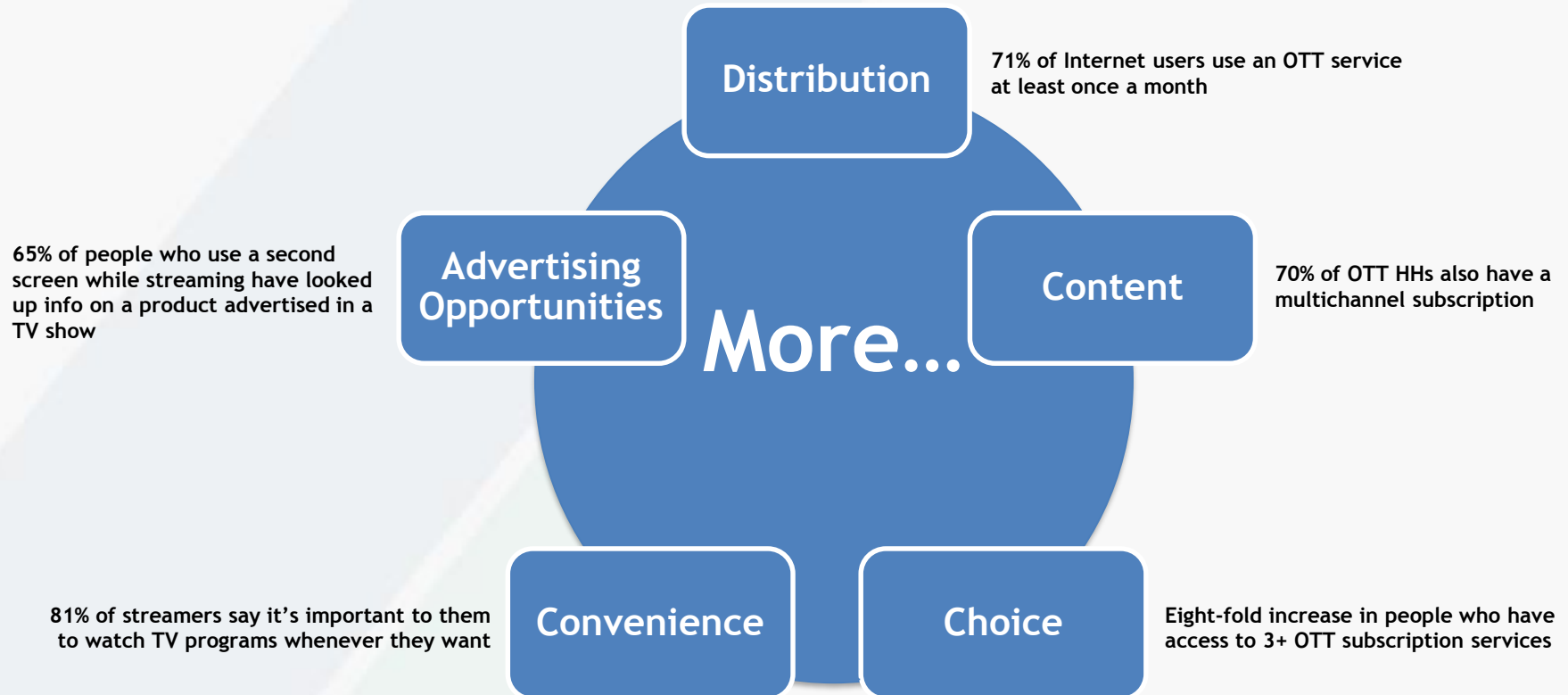
VAB: YOU DOWN WITH OTT?

Source: PwC Consumer Intelligence Services video survey, 2017 from "Consumer Intelligence Series: I stream, you stream" Report.  
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# So, Are You Down With OTT?

If you like more then you should be since the math of OTT is a formula of addition, not subtraction.

Consumers have a voracious appetite for video content, especially for premium multiplatform TV, and they can satisfy their cravings anywhere, anytime through a wide selection of devices and streaming services



# Glossary

- **Ad Networks**: provides an outsourced sales capability for publishers and a means to aggregate inventory and audiences from numerous sources in a single buying opportunity for media buyers
- **Buy-Side / Demand-Side Platforms (DSPs)**: a technology platform that provides centralized & aggregated media buying from multiple sources including ad exchanges, ad networks and sell side platforms, often leveraging real-time bidding capabilities of these sources
- **Multichannel HHs**: Households that subscribe to a service offering multiple channels of video programming through either a cable, telco or satellite provider (often referred to as an MVPD - multichannel video programming distributor)
- **OTA HHs (Over-The-Air)**: Households that receive broadcast network signals using an antennae; it does not exclude households that also access OTT content
- **OTT (Over-The-Top)**: Premium long form video content that is streamed over the internet through an app or device onto a TV (or PC, Tablet, or Smartphone) without requiring users to subscribe to a wired cable, telco or satellite TV service
- **OTT Aggregator**: wide range of content from multiple providers delivered over the internet through one streaming source (i.e. Netflix) without the involvement of a traditional multichannel subscription
- **OTT-only HHs**: Households that rely on unmanaged Internet or OTT delivery to view television shows or movies in lieu of a traditional multichannel subscription
- **Sell-Side / Supply-Side Platforms (SSPs)**: a technology platform that provides outsourced media selling and ad network management services for publishers. The business model resembles that of an ad network in that it aggregates ad inventory however they serve publishers exclusively and does not provide services for advertisers
- **Standalone App**: content from one provider delivered directly to the consumer over the internet without the involvement of a traditional multichannel subscription (i.e. CBS All Access)
- **TV Everywhere (TVE)**: apps that allow viewers to access content over the internet by logging in with their Multichannel Video Programming Distributor (MVPD) subscription user name / password authentication (i.e. Watch ESPN, Fox Now)
- **vMPVDs (virtual multichannel video programming distributor)**: unmanaged (Internet/OTT) delivery of aggregated live, linear networks and on-demand content similar to a traditional multichannel offering for a monthly subscription

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