



VIDEO
TRENDS
REPORT

Q3 2016 Video Trends Report: Consumer Behavior Across Pay-TV, VOD, PPV, OTT, TVE, Connected Devices, and Content Discovery



Introduction



SURVEY DEMOGRAPHICS

- Q3 2016 Survey Size: 3,140
- Geographic Regions: United States, Canada
- Age of Respondents: 18+ Years of Age

This survey was conducted in Q3 2016 by a leading third-party survey service; TiVo analyzed the results. TiVo conducts this survey on a quarterly basis and publishes a report evaluating and analyzing key trends across the pay-TV industry. The purpose of this survey is to track consumer trends over time, offering pay-TV providers real, unbiased feedback regarding consumer behaviors, industry perceptions, and opinions of new technology hitting the market.

TiVo is a global leader in entertainment technology innovations and insights. TiVo's combined portfolio, including DigitalSmiths' industry-leading content discovery products and services, will be marketed under the TiVo name going forward.

TiVo enables pay-TV providers, digital publishers and consumer electronics (CE) manufacturers to power personalized search, recommendations, carousels, social and sports discovery, and gain invaluable insights through analytics. TiVo's customers include Charter Communications, DISH Network, DIRECTV, FOX Sports, Moviefone, Sharp Electronics, Sling TV, Sony PlayStationVue, The CW Network and Time Warner Cable.

Each quarter, TiVo seeks real consumer opinions to uncover key trends relevant to pay-TV providers, digital publishers and CE manufacturers. Consumers' genuine, unbiased perspectives and feedback drive continuous improvements to TiVo's Seamless Discovery®, the industry's leading personalized content discovery platform, and Seamless Insight®, which delivers the reporting and analytics necessary to optimize content discovery. TiVo shares these findings for the same reason it uses them—in hopes that video service providers leverage the information to improve and develop applications and features that will enhance the overall TV viewing experience offered today.

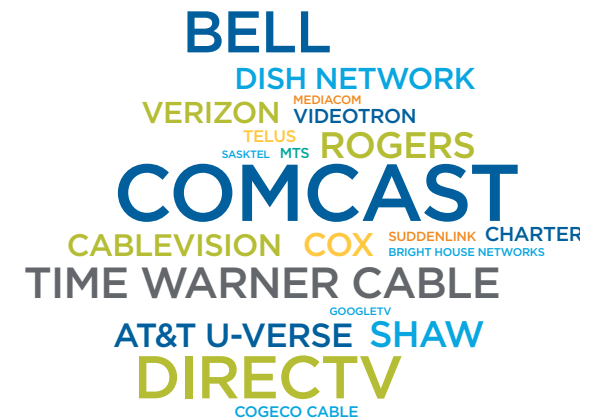
This survey has been conducted every quarter since 2012, enabling the company to monitor, track and identify key trends in consumers' viewing habits, as well as their opinions of pay-TV providers, emerging technologies, connected devices, TV Everywhere (TVE) apps and content discovery features, such as personalized recommendations.

In addition to key quarter-over-quarter (q/q) and year-over-year (y/y) trends, TiVo's Q3 2016 Video Trends Report covers many new topics, including:

- A breakdown of content types viewed daily, as well as respondent sentiment on whether there is ample time to view all available content.
- A breakdown of the top channels respondents desire in an à la carte pay-TV package, as well as their ideal price for each channel.
- A detailed analysis of respondents who would like a skinny bundle paired with a free streaming service that features commercials—which could potentially be the solution to churn.

PAY-TV PROVIDERS

Who is your current cable/satellite service provider?



The State of Pay-TV



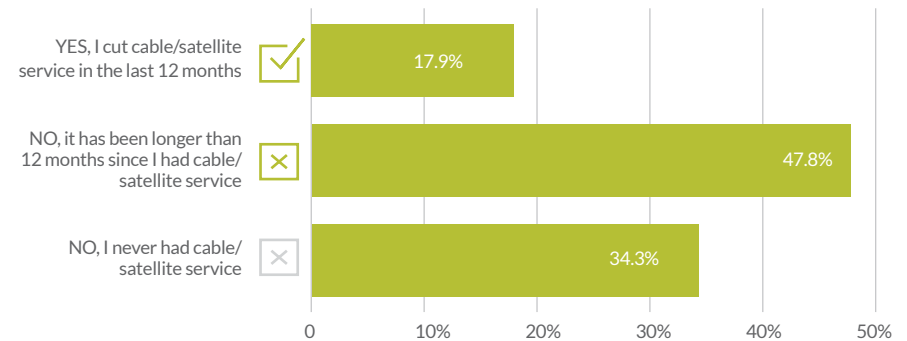
While the majority of this report examines how those with a pay-TV provider interact with their TV offerings, TiVo first sought to understand the audience without a pay-TV provider. In Q3 2016, 82.4% of respondents have a pay-TV provider. However, of respondents without a pay-TV provider, 17.9% cut cable/satellite service in the last 12 months. TiVo believes understanding why respondents cut cable/satellite service can help with marketing efforts focused on subscriber acquisition. Therefore, new to the Q3 2016 *Video Trends Report* is a question that asked what factors influenced a respondent's decision to cut cable. The top three factors were:

- "Price – too expensive" – 82.9%
- "I use an internet streaming service, such as Netflix, Hulu, Amazon Video, etc." – 59.5%
- "I use an antenna to get the basic channels on my TV." – 28.1%

While it may come as no surprise that price is the top factor, TiVo interprets the data to mean that pay-TV providers should get creative with not only their packages, but also their strategies for marketing these offerings. After identifying subscribers at risk for cutting service, pay-TV providers must ensure that packages targeted to this group are enticing, and strong enough to combat the option of using an antenna to receive TV. Lastly, it's no secret over-the-top (OTT) services are a major factor, but pay-TV providers have the upper hand due to depth and breadth of content, such as sports, live events, award shows, etc. It is imperative to emphasize key market strengths to these value-sensitive customers.

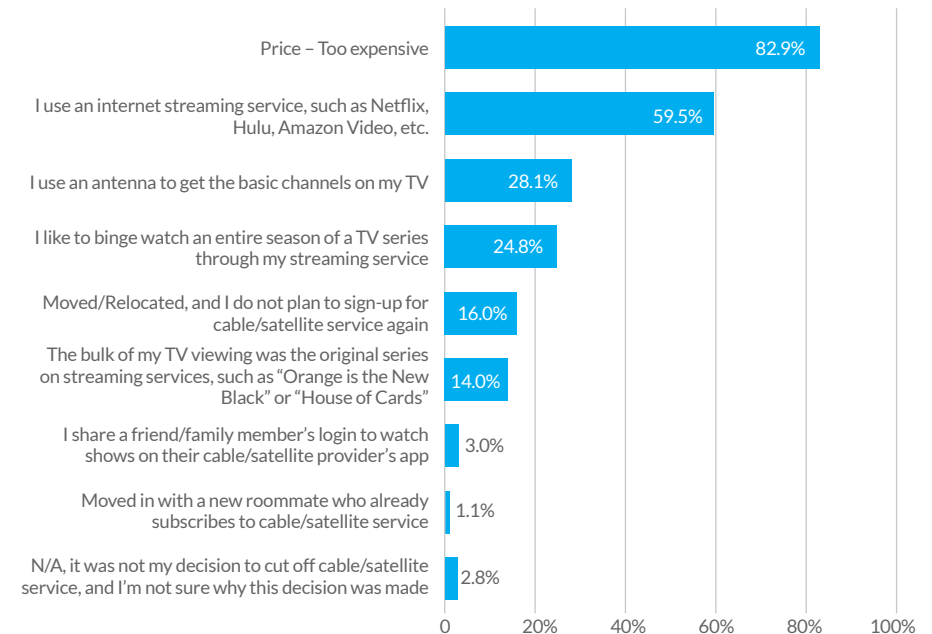
CUTTING PAY-TV SERVICE

Did you cut cable/satellite service in the last 12 months? (Only answered by respondents who do not have a Pay-TV provider)



TOP FACTORS FOR CUTTING PAY-TV SERVICE

What factors influenced your decision to cut off your cable/satellite service? (Choose all that apply)



The State of Pay-TV



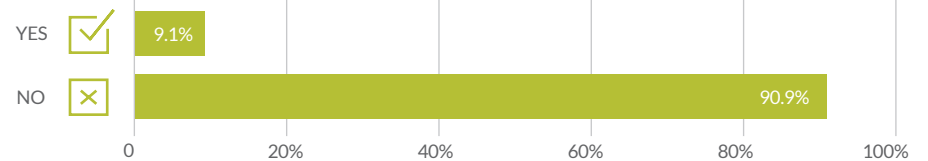
POTENTIAL CHURN

In order to construct an accurate picture of the current state of pay-TV, TiVo examines the topic of churn across several categories, including those who recently switched pay-TV providers and those who have future plans to switch or cut service altogether, as well as what factors could influence these audiences to stay. Here is a breakdown of the current state of pay-TV as it relates to churn:

- Of the respondents who have cable/satellite service, 9.1% answered they have switched pay-TV providers in the past three months.
 - Unfortunately for pay-TV providers, this audience is up slightly q/q and y/y, and Q3 2016 marks the highest this result has been since this question was added to the survey in 2013.
- When asked if they plan to change pay-TV providers in the next six months, respondents answered:
 - 5.6% plan to cut their pay-TV service.
 - 7.1% plan to change to another pay-TV provider.
 - 2.5% plan to switch to an online service or app.
 - 29.7% are on the fence, answering “maybe.”
 - These figures total 44.9% of respondents—meaning just under half of respondents could potentially leave their current pay-TV provider in the next six months. While this is a large portion of the respondents, the positive news for pay-TV providers is that this group of “at risk” respondents decreased 4.8% q/q.

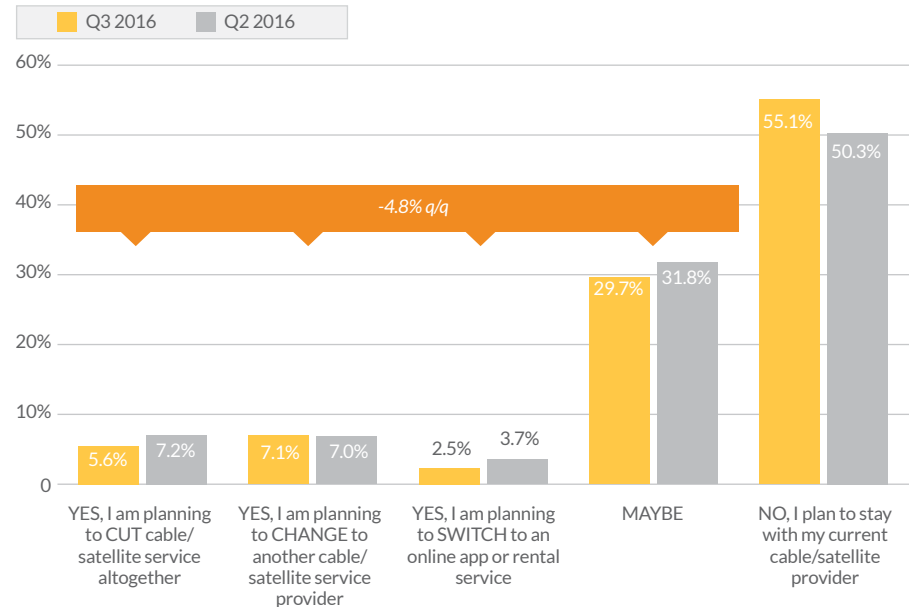
SWITCHED PROVIDERS

Have you switched cable/satellite providers in the last three months?



PLANNING TO SWITCH PROVIDERS

Do you plan to change cable/satellite providers in the next six months?



The State of Pay-TV



POTENTIAL CHURN CONT'D

To better understand those who plan to change, switch or cut pay-TV providers in the next six months as well as determine what would keep this group from churning, TiVo took the survey a step further by introducing a new question to the Q3 2016 *Video Trends Report*. Respondents were asked to choose from a list of several factors that would cause them to reconsider leaving their pay-TV provider. The clear winners, chosen by the bulk of respondents, are:

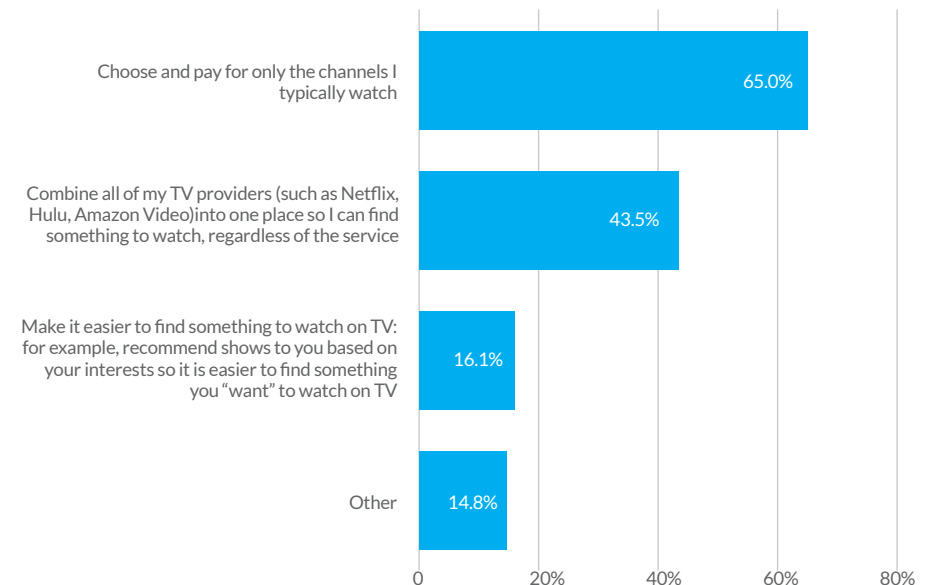
- **Flexible Package Structure:** “Choose and pay for only the channels I typically watch.” - 65.0%
- **More Integrated Video Solution:** “Combine all of my TV providers (such as Netflix, Hulu, Amazon Video) into one place so I can find something to watch, regardless of the service.” - 43.5%

These two reasons mirror the factors—price and OTT service usage—discussed in the previous section on why respondents actually cut their pay-TV service. To address this, pay-TV providers should consider incorporating access to OTT offerings directly through the set-top box (STB), rather than the viewer leaving to switch to a streaming device. Providing an easier access point to OTT services not only satisfies the viewer, but also increases the perceived value of pay-TV service.



PLANNING TO SWITCH PROVIDERS? IF YES...

Would you consider keeping your existing cable/satellite service provider if they allowed you to do the following? (Choose all that apply)



The State of Pay-TV



RESPONDENTS' SENTIMENTS TOWARD THEIR PAY-TV PROVIDERS

In Q3 2016, 79.0% of respondents are “very satisfied” or “satisfied” with their pay-TV service, an increase of 1.8% q/q, 3.0% y/y and 3.6% over two years. The “very satisfied” category increased 3.1% q/q, 2.9% y/y and 3.5% over two years, which is positive news for pay-TV providers. Still, understanding why respondents are dissatisfied remains important.

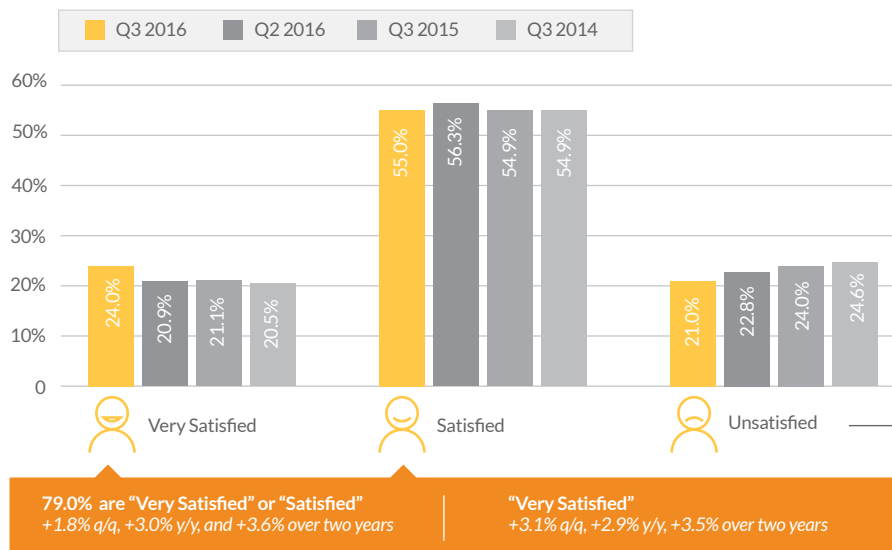
Of those respondents who were dissatisfied, the top three reasons were:

- “Too expensive/Increasing fees for cable/satellite service” – 82.0%
- “Poor customer service” – 32.9%
- “Poor cable/satellite service” – 29.4%

Of note, the answer choice “Too expensive/Increasing fees for cable/satellite service” increased 2.4% q/q, 13.6% y/y, 12.5% over two years.

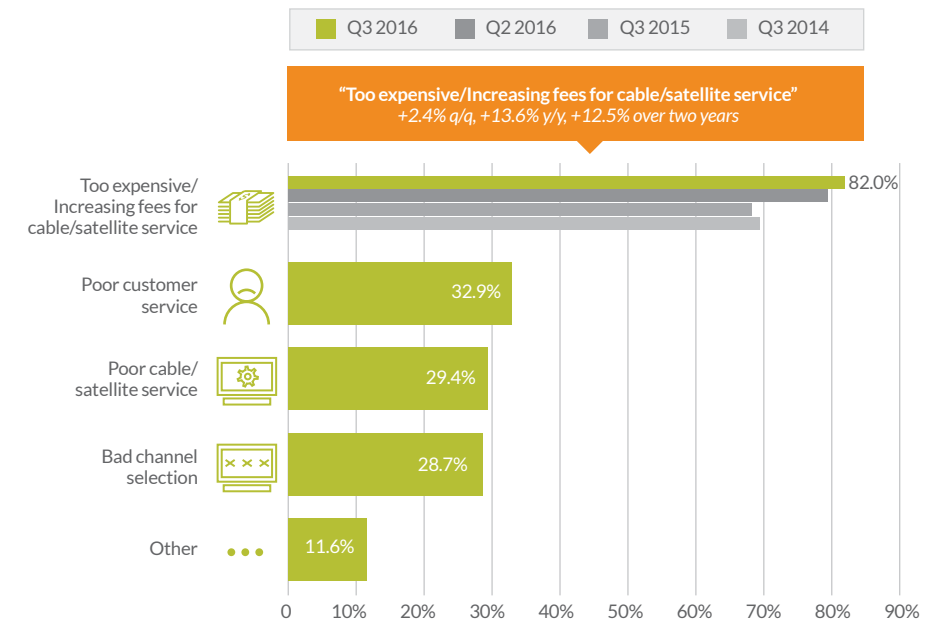
VALUE

How would you rate the level of value you are receiving from your cable/satellite service provider?



IF UNSATISFIED...

Why do you feel you’re not getting enough value from your provider? (choose all that apply)



The State of Pay-TV



PAY-TV SERVICE-LEVEL ADJUSTMENTS

Since price has been noted already in this report as a pain point among respondents, TiVo wanted to know how much respondents are paying, on average each month, for pay-TV service. In Q3 2016, 34.9% of respondents indicated that they paid \$101 or more per month for cable/satellite services.

In Q3 2016, pay-TV service-level adjustments, both adding and cutting services, are flat. Specifically, 17.3% of respondents selected “Increased/Added Services” and 17.5% answered “Decreased/Removed Services.” Here is a breakdown of these results:

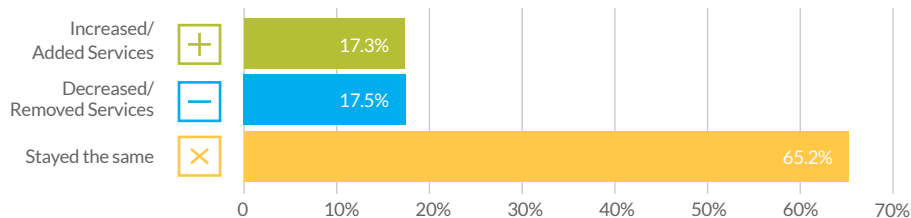
Top Services Added: For the second quarter in a row, the top three services added were:

- “Added new channels” – 47.4%
- “High Definition (HD)” – 25.4%
- “Premium Channels” – 22.9%

“Premium Channels” continues to struggle as an added service with decreases of 6.7% q/q, 12.4% y/y, and 18.0% over two years. Also, Premium Channels were added at a much lower rate (22.9%), than they were cut (41.2%). However, the category “Premium Sports Package(s)” is up 4.0% q/q, and 3.6% y/y—an increase that most likely reflects time of year, as many major sports kick off their seasons in Q3.

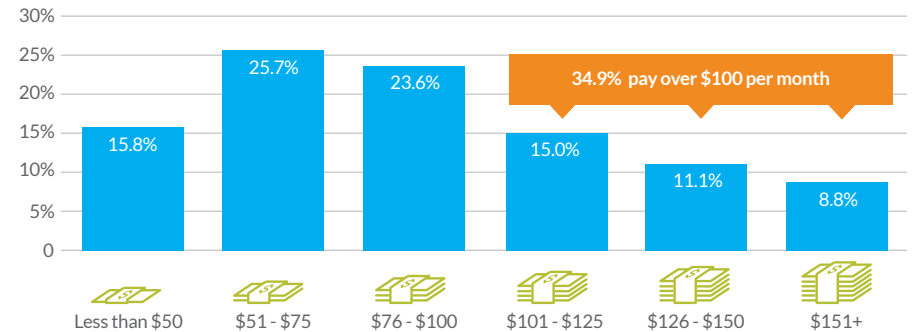
SERVICE ADJUSTMENT

Have you adjusted your level of cable/satellite service in the last 12 months?



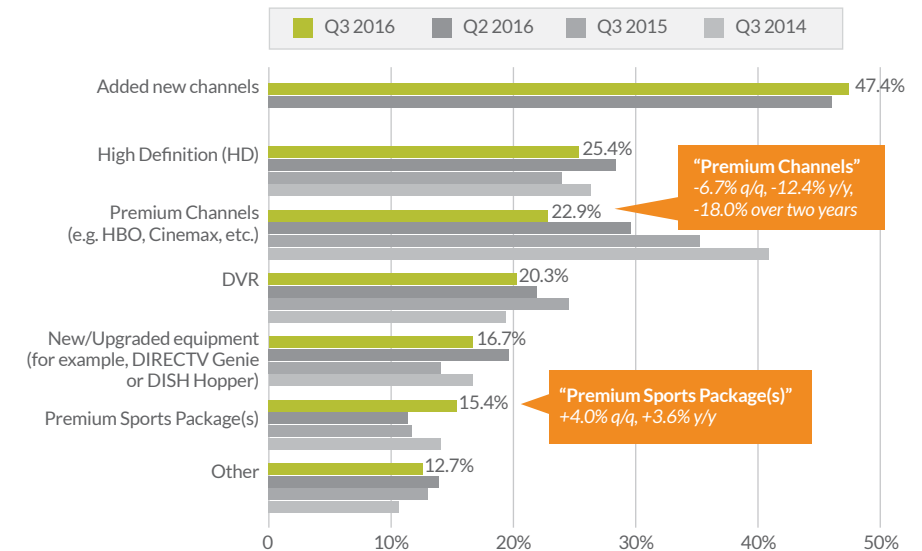
BILL AMOUNT

How much is your monthly bill from your cable/satellite provider for TV services only? (Not including video-on-demand/movie purchases, phone, or internet)



SERVICES ADDED

If increased, what service(s) did you add through your cable/satellite provider? (choose all that apply)



The State of Pay-TV



Top Services Cut: For the sixth quarter in a row, the top three services cut were:

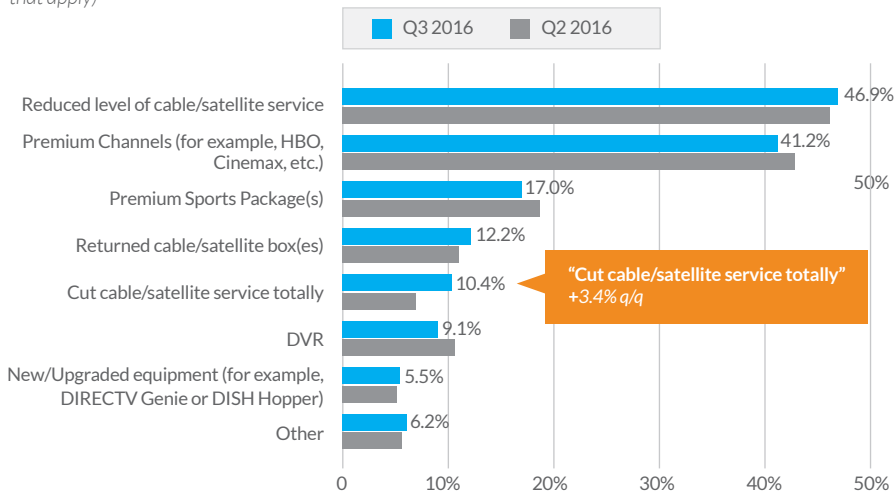
- “Reduced level of cable/satellite service” – 46.9%
- “Premium Channels (for example, HBO, Cinemax, etc.)” – 41.2%
- “Premium Sports Package(s)” – 17.0%

Note: “Cut cable/satellite service totally” is up 3.4% q/q.

Premium Channels: In Q3 2016, 40.0% of all respondents pay for premium channels, which is down slightly q/q. The top three channels are HBO (24.0%), Showtime (15.1%) and The Movie Channel/Network (13.1%). Growth and/or decline in adoption of premium channels was relatively flat for all channels listed, so there’s no notable news to report for this category.

SERVICES CUT

If decreased, what service(s) provided through your cable/satellite provider did you cut? (choose all that apply)



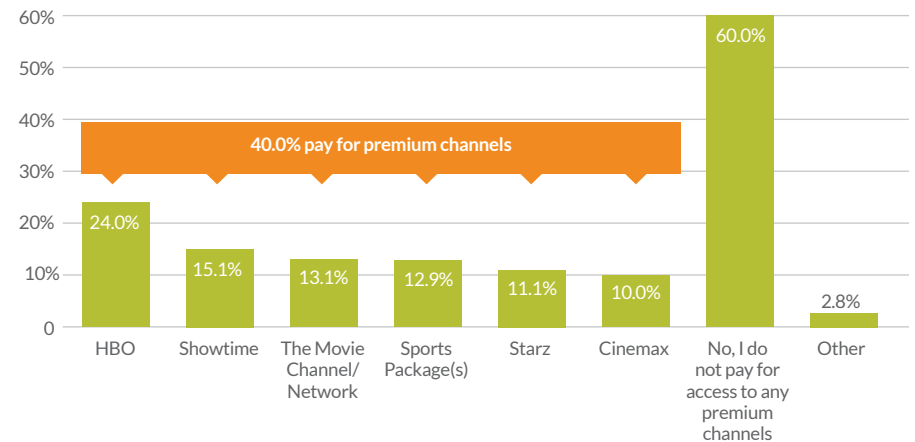
RESPONDENTS’ SENTIMENTS ON À LA CARTE PAY-TV PACKAGES

In Q3 2016, 78.0% of respondents would like to pay for only the channels they watch—and this response is up 1.2% q/q and 1.3% y/y. The top five most desired channels among all respondents were: ABC, CBS, Discovery Channel, NBC and History. On average, respondents chose 18 channels to compose their ideal line-up.

Additionally, the average price respondents want to pay for self-selected channels is \$29.46 per month, or \$1.84 per channel, per month. See pages 9-11 for more on à la carte pay-TV packages.

PREMIUM CHANNELS

Do you pay for any of the following premium channels through your cable/satellite provider? (choose all that apply)





Analytical Commentary

ANALYSIS OF DESIRED CHANNELS IN AN À LA CARTE PAY-TV PACKAGE BY COUNTRY



New to the Q3 2016 *Video Trends Report* is a question format in which respondents selected their ideal channels and were then asked how much they would pay for each one—this format allowed TiVo to measure respondents’ perceived value of networks offered to them by both popularity and desired price. View the complete breakdown of channels and cost on pages 10-11.

This insight provides valuable information to pay-TV providers. For instance, if a provider is offering a 10-channel package, what are the most desired channels, and what price do consumers want to pay? Because the report surveys respondents in both the United States and Canada, much of the video content is the same in both countries, but some Canadian content is unavailable in the U.S. Therefore, information is displayed by country.

In the U.S., respondents’ average price for the top 10 channels would be \$15.30; for 20 channels, it would be \$32.92. In Canada, respondents’ average price for the top 10 channels would be \$16.38; for 20 channels, it would be \$32.00. See the charts on pages 10 -11 for a breakdown of the most desired channels by country, as well as by top 10 and top 20 channels.

Several networks now offer a direct-to-consumer app. For example, CBS launched CBS All Access, which allows subscribers to watch live content, catch-up content and bonus content. CBS All Access costs \$5.99 a month, or \$9.99 a month for a commercial-free option. The service also offers a one-week free trial, and subscribers can easily cancel because there is no contract.

So, if a consumer values the 20-channel package at, on average, \$1.65 per channel, will he or she experience sticker shock paying \$5.99 per channel while attempting to bypass the pay-TV provider through an app? And, will the consumer be willing to add 10 to 20 apps to his or her preferred streaming device and pay a monthly fee for each?

Across the industry, TiVo examined the skinny bundle offerings currently available and learned that none of the current offerings include all top 20 channels. If consumers attempted to build this package themselves, Sling TV’s “All Channels” package costs \$40.00 and HBO is \$14.95. Together, they total

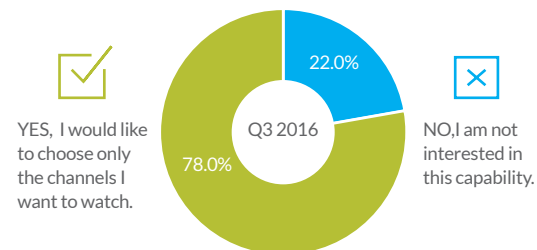
\$54.95, plus, an over-the-air antenna would still need to be purchased to view ABC, NBC and CBS. PlayStation Vue had a similar lack of coverage.

The video industry knows that consumers are willing to pay roughly \$80 per month for TV service. Skinny bundles give consumers a larger percentage of content they desire for a lower price, but add up the cost of a skinny bundle, subscription video on-demand (SVOD) service and a streaming device like Google Chromecast—and the total is essentially back to the cost of a traditional pay-TV package. Thus, the question remains: will consumers catch on that skinny bundles aren’t really skinny? Though a true à la carte offering is unavailable today, consumers still have multiple ways to consume content, and at the end of the day, these options benefit consumers.

Will asking consumers to pay the same price for less video content be the future of television? TiVo believes a huge opportunity remains for an enticing offering that delivers great value to consumers, and is economical for providers as well. Though TiVo believes the dollar amounts for each channel listed on pages 10-11 are accurate, it only captures what respondents claim they will pay, not what they might pay if extra value were present. In an effort to fight churn within the existing subscriber base as well as competition from emerging services, pay-TV providers must offer compelling à la carte, or skinny bundle, packages that include key channels unavailable in competitive offerings.

INTEREST IN AN À LA CARTE PAY-TV PACKAGE

When purchasing cable/satellite service you often choose from pre-set channel packages. Would you like the ability to make your own package by selecting ONLY the channels you WANT to watch?





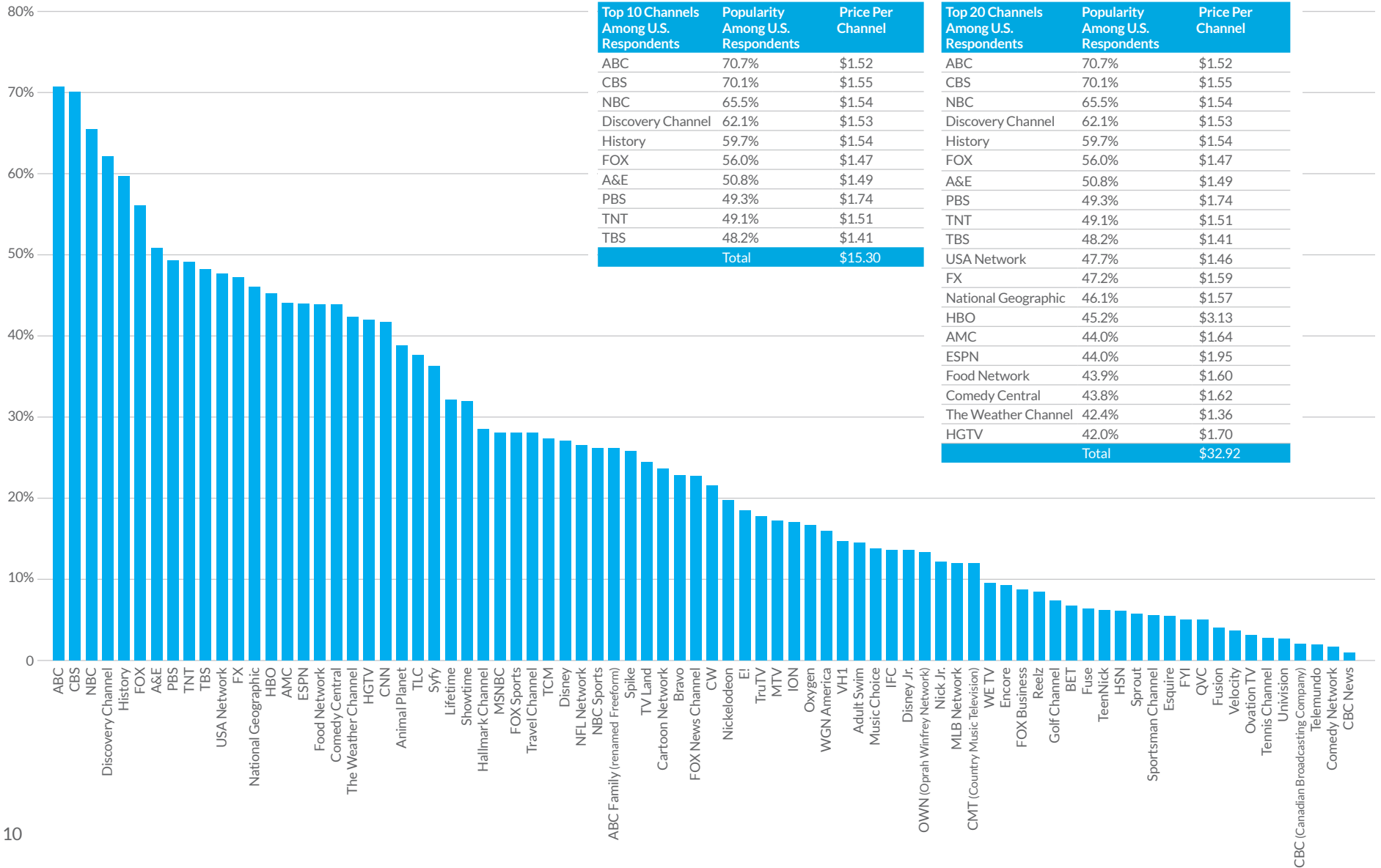
Analytical Commentary

ANALYSIS OF DESIRED CHANNELS IN AN À LA CARTE PAY-TV PACKAGE BY COUNTRY



IDEAL CHANNELS IN AN À LA CARTE PAY-TV PACKAGE - U.S.

If YES, which channels would you be interested in including in your TV package? (choose all that apply)





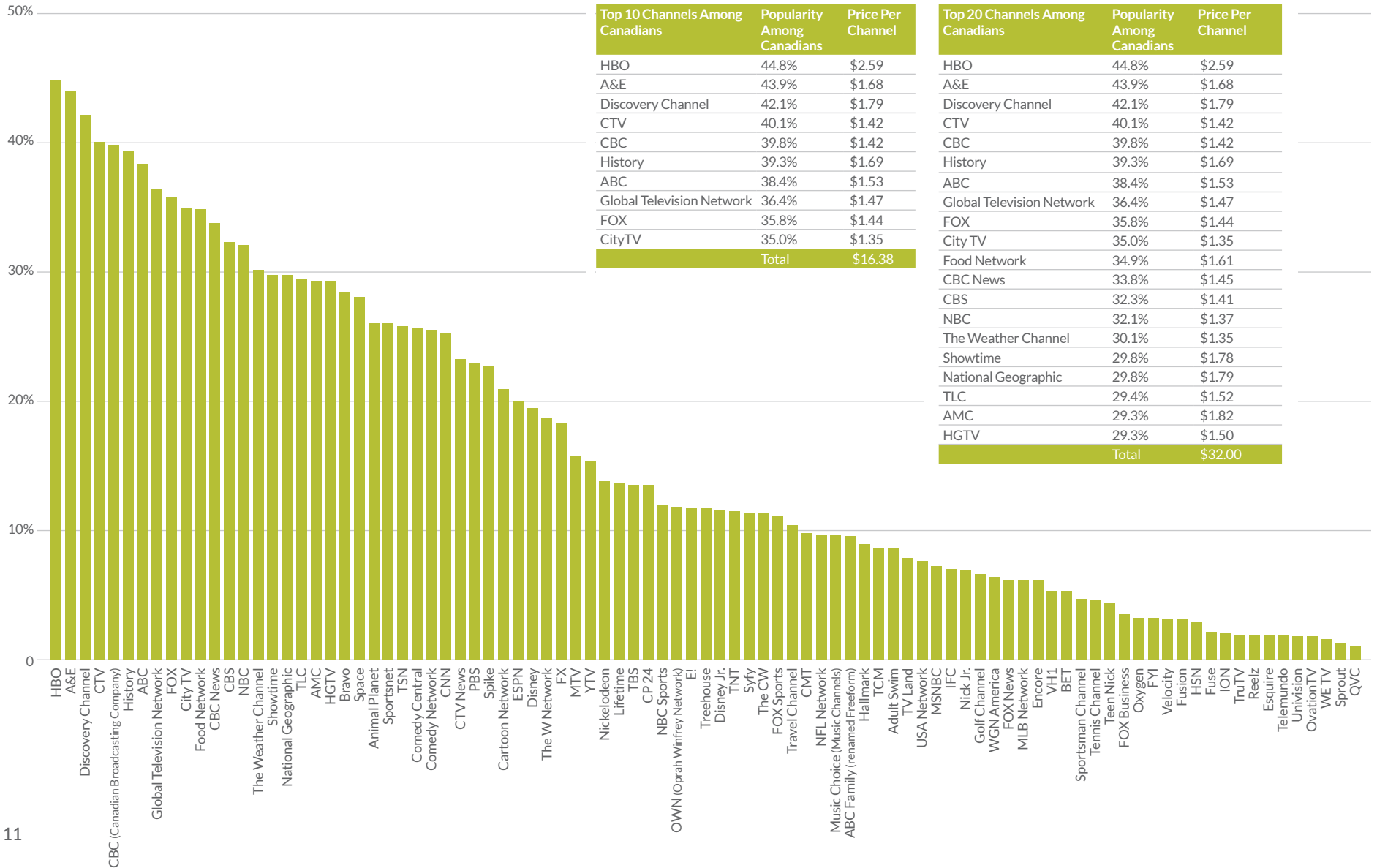
Analytical Commentary

ANALYSIS OF DESIRED CHANNELS IN AN À LA CARTE PAY-TV PACKAGE BY COUNTRY



IDEAL CHANNELS IN AN À LA CARTE PAY-TV PACKAGE - CANADA

If YES, which channels would you be interested in including in your TV package? (choose all that apply)



TV Viewing Habits



While the bulk of the survey aims to understand respondent sentiment toward pay-TV providers, as well as identify emerging features and services, tracking high-level, overall TV viewing behaviors is also important. Therefore, this quarter, the question format changed to focus more on types of content viewed, as well as daily content consumption. According to the Q3 2016 survey results, respondents' TV viewing behavior, per day, is as follows (see chart to the right for a breakdown of daily content viewing):

- 85.7% watch live TV from their channel guide.
- 69.5% watch previously recorded/DVR'd TV.
- 61.1% watch OTT/SVOD content.

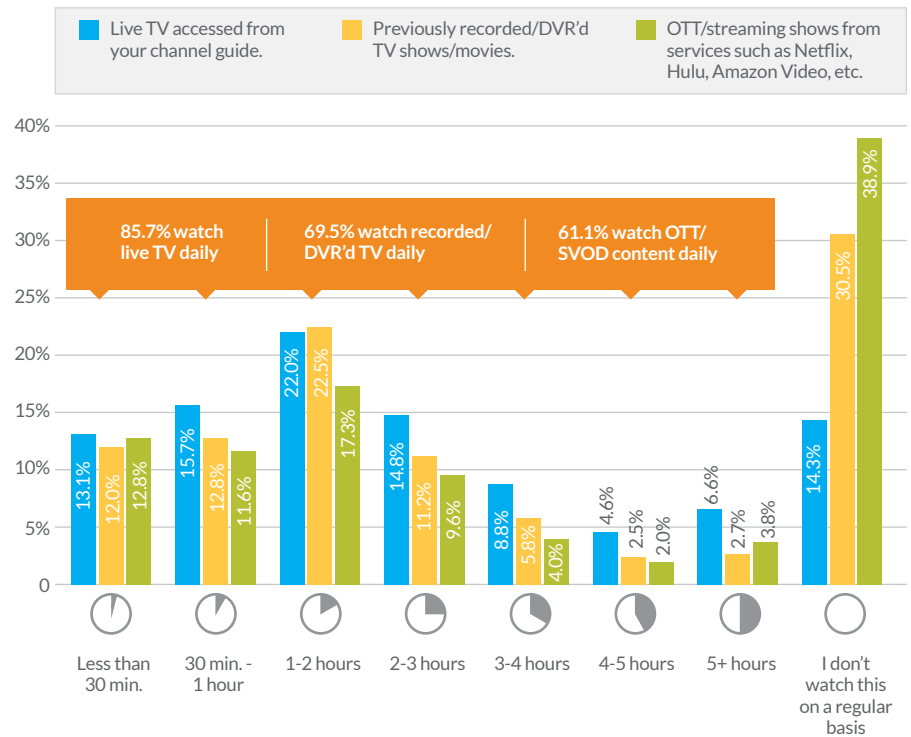
In addition to the type of content viewed, TiVo was interested in understanding whether respondents feel they have "too much" to watch, or are pleased with their ability to fit in all of their favorite shows on a weekly basis. In order to track this, TiVo added a new question, which produced the following results:

- Only 45.2% of respondents feel they have enough time to watch their shows.
- Another 26.5% only have time if they record/DVR shows and then skip commercials.
- 28.3% typically run out of time.

TiVo will continue to collect and monitor the data, but with 28.3% of respondents running out of time, content discovery becomes even more crucial in improving the overall pay-TV experience. Plus, content discovery functionality saves consumers' time, only showing them programs they want to watch, due to personalization based on previous viewing habits.

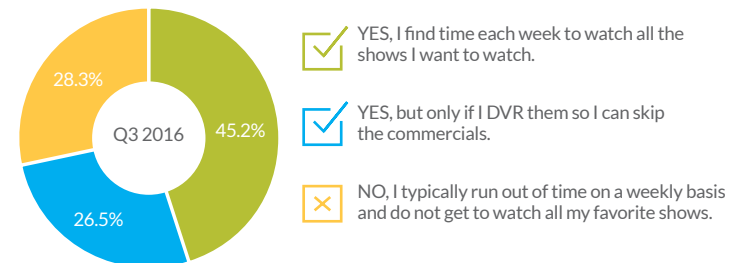
TV VIEWING TIME

On average, how much of your daily TV viewing time is spent watching the following types of TV? (provide an answer to all 3 categories listed below)



TIME FOR FAVORITE TV SHOWS

On average each week, do you feel you have enough time to watch all your favorite TV shows?



TV Viewing Habits

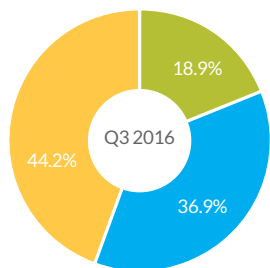


In addition to finding time to watch TV shows/movies through cable/satellite, it's important to understand how respondents feel about their service. TiVo's survey not only tracks engagement with channels watched, but also respondent sentiment toward the pay-TV experience. Here is a breakdown of results for Q3 2016:

- 34.4% of respondents feel overwhelmed by the number of channels available to them, an increase of 2.1% q/q.
- The bulk of respondents (79.2%) watch 10 channels or less.
 - The good news for pay-TV providers is that respondents are watching more channels than previously since 11 to 20+ channels saw increases of 3.9% q/q and 3.3% y/y.
- 58.3% of respondents are happy with their ability to find something to watch within their cable/satellite service.
 - However, positive feelings toward finding something to watch remain relatively flat q/q and y/y. In order to retain subscribers over time and improve perceived value of the service as a whole, this critical metric needs to experience positive growth.
- Over half (55.8%) of respondents would like their channel guide to categorize content into groups/lists of TV shows/movies—or display what TiVo refers to as carousels.

CHANNEL GUIDE OR CAROUSELS

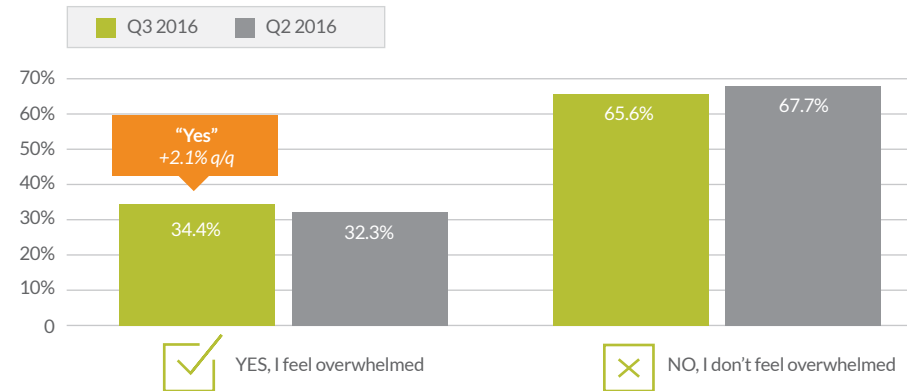
Would you like your channel guide to be changed, so that it's sorted or categorized into groups/lists of TV shows or movies? For example, "What is on Now", "Because You Watched This," "Live Sports On Now:"?



- YES, I would like my guide to be changed.
- YES, but I would like access to both types of guides (channel guide like I have today AND groups/categories of shows).
- NO, I am not interested in my guide changing.

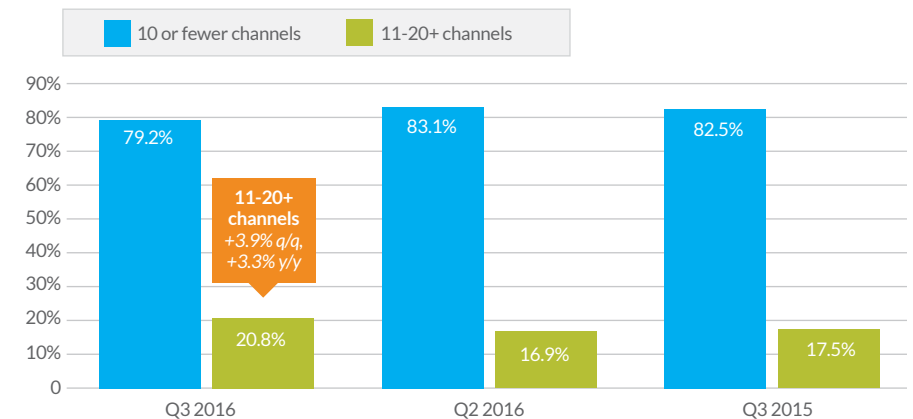
OVERWHELMED BY CHANNELS

Do you feel overwhelmed by the number of channels available to you, and listed in your guide?



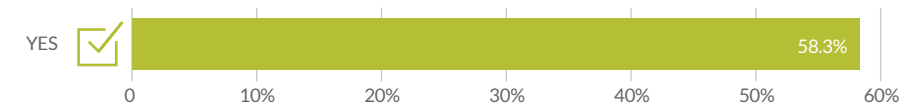
NUMBER OF CHANNELS WATCHED

Of the channels offered to you, how many channels do you typically watch, on average?



EASY TO DISCOVER CONTENT

Do you feel it is easy to find something you "want" to watch on TV?



Revenue-Generating Pay-TV Content



PAID VIDEO-ON-DEMAND (PVOD) OFFERINGS

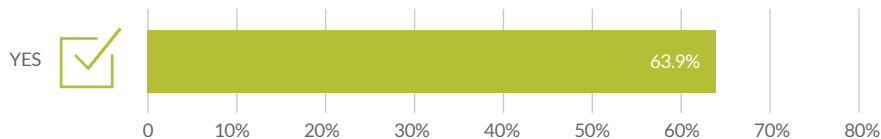
In Q3 2016, 42.2% of respondents make one or more PVOD purchases from their pay-TV provider, and of this group, 30.1% do so on a monthly basis.

Overall PVOD purchases increased 13.0% y/y, 14.7% over two years and 15.1% over three years. What is driving this growth? TiVo believes one fundamental factor in this growth is more enticing user interfaces (UIs) which incorporate recommendations, and a better content discovery experience overall.

With that said, it's important to measure how respondents feel about the experience of navigating their pay-TV providers' PVOD catalog. In Q3 2016, 63.9% of respondents who purchase PVOD feel it is easy to find a movie to watch.

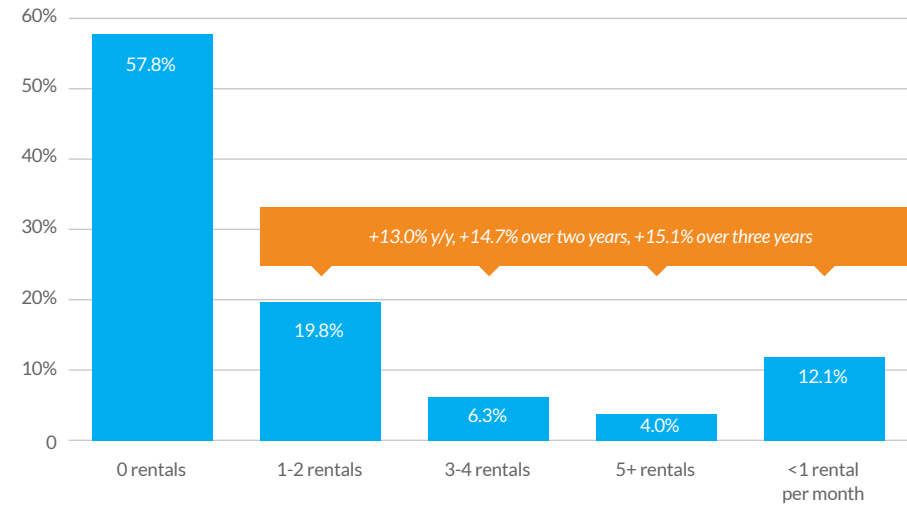
PVOD CATALOG DISCOVERY

Do you feel it's easy to find a movie you will enjoy in the video-on-demand catalog provided by your cable/satellite provider? (accessed from your guide)



PVOD PURCHASES PER MONTH

On average, how many video-on-demand (movies offered through your provider) purchases does your household make each month? (Movies purchased from on-demand stations provided by your cable/satellite provider. Does NOT include Netflix, Redbox, iTunes, etc.)



Over-the-Top Trends and Cord-Cheating



Cord-cheating, a trend TiVo began tracking in Q2 2013, refers to cable/satellite subscribers who seek on-demand video content from third-party and OTT services in addition to pay-TV providers' offerings. Cord-cheating spans a variety of delivery models, including streaming SVOD, such as Netflix and Hulu, as well as transactional video-on-demand (TVOD), such as Redbox kiosks and iTunes.

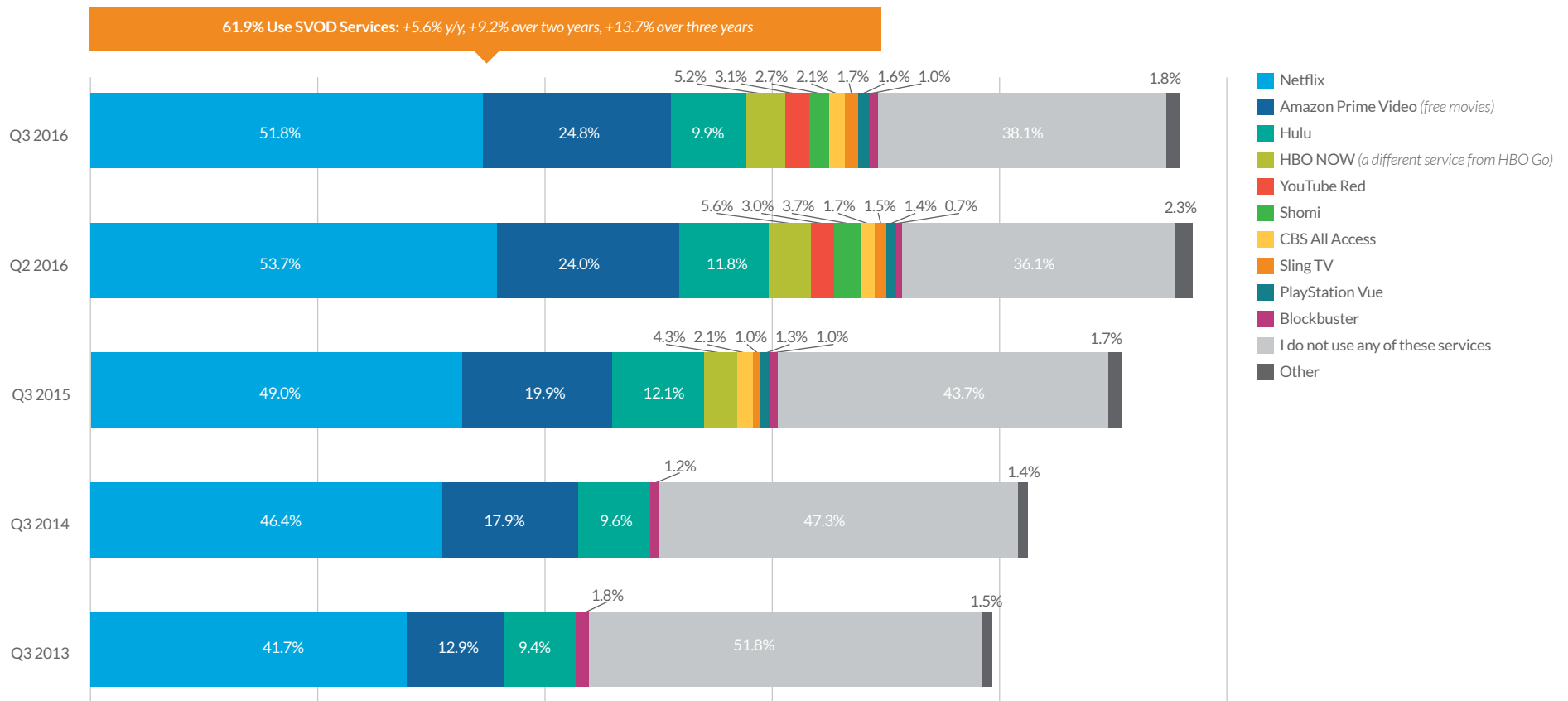
In Q3 2016, 66.8% of respondents with pay-TV service fall into the category that TiVo coined as "cord-cheaters." Specifically, of respondents who are cord-cheaters:

- 90.7% use a SVOD service.
- 53.2% use a TVOD service.
- 44.0% use both SVOD and TVOD services.

Below is a chart that illustrates a breakdown of the adoption of SVOD services by all respondents. Additional adoption and market share trends continue on pages 16-17.

MONTHLY SUBSCRIPTION OTT/SVOD SERVICES

Do you use any of these monthly subscription services for movies or TV shows? (choose all that apply)



Over-the-Top Trends and Cord-Cheating



State of Adoption and Market Share of SVOD Services:

- In Q3 2016, 61.9% of respondents use a monthly SVOD service.
 - SVOD growth was down 2.0% q/q, but over time, it's been trending up with increases of 5.6% y/y, 9.2% over two years and 13.7% over three years.
- The top three SVOD services used are Netflix, Amazon Prime Video and Hulu. Below are a few q/q and y/y growth numbers to note for SVOD services:
 - Amazon Prime Video was up slightly q/q and 4.9% y/y.
 - Hulu saw negative growth of 1.9% q/q and 2.2% y/y.
 - Netflix was down 1.9% q/q, but saw positive growth of 2.8% y/y.
 - CBS All Access, PlayStation Vue, and Sling TV were relatively flat q/q and y/y.
- 56.6% spend between \$6 and \$14 a month on SVOD services.
 - Respondents are spending more than they were previously since \$15-\$30+ increased slightly y/y and 5.7% over two years—this could be partially related to Netflix's recent price increases.
 - For the second quarter in a row, 10.0% of respondents say they share an SVOD account and do not pay to do so.

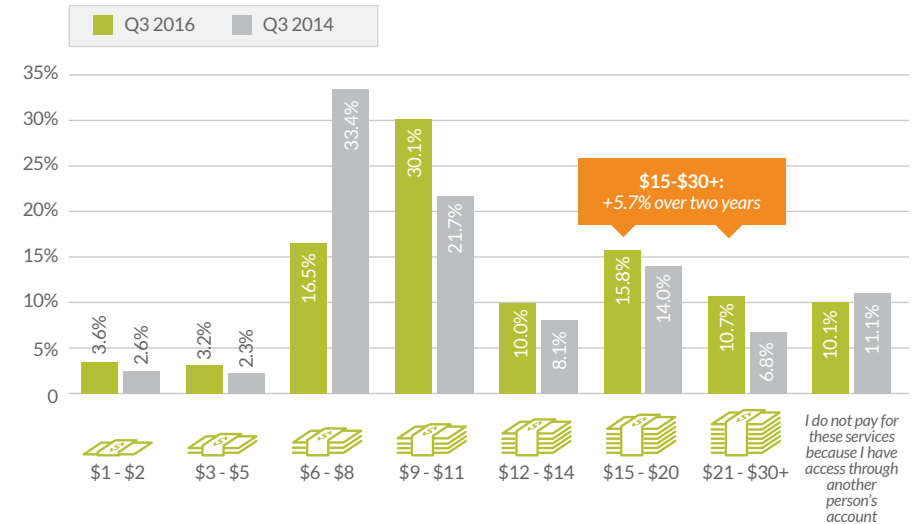
One other note, Shomi, a Canadian SVOD service, recently announced it will shut down just two years after its launch¹ In the Q3 2016 survey, conducted before this announcement, 2.7% of respondents subscribe to Shomi. TiVo will continue to monitor SVOD services to identify the percentage of market share necessary to stay in business.

State of Engagement With SVOD Services:

- 92.3% of respondents who have an SVOD account watch it on a daily basis.
 - The bulk of those (59.2%) do so for two hours or less per day.
- 81.0% of respondents are pleased with their ability to find something to watch on SVOD services, which is up slightly y/y.

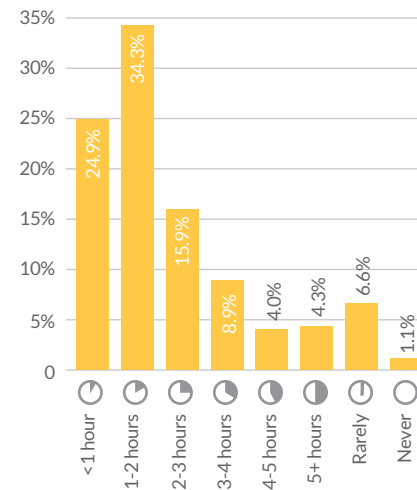
SVOD BILL AMOUNT

How much do you spend each month on subscription services (combined spend on Netflix, Hulu, etc)?



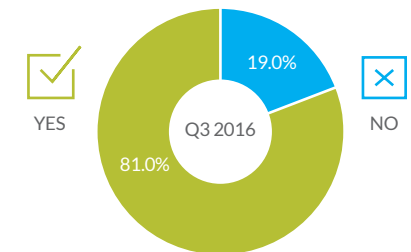
VIEW TIME FOR SVOD

On average per day, how many hours do you watch content on these subscription services?



SVOD CONTENT DISCOVERY

Do you feel it is easy to find something you "want" to watch on these subscription services?



¹ Frankel, Daniel. "Rogers and Shaw Shutter Canadian SVOD Start-up Shomi." *FierceCable*. N.p., 27 Sept. 2016. Web. <<http://www.fiercecable.com/cable/rogers-and-shaw-shutter-canadian-svod-start-up-shame>>.

Over-the-Top Trends and Cord-Cheating



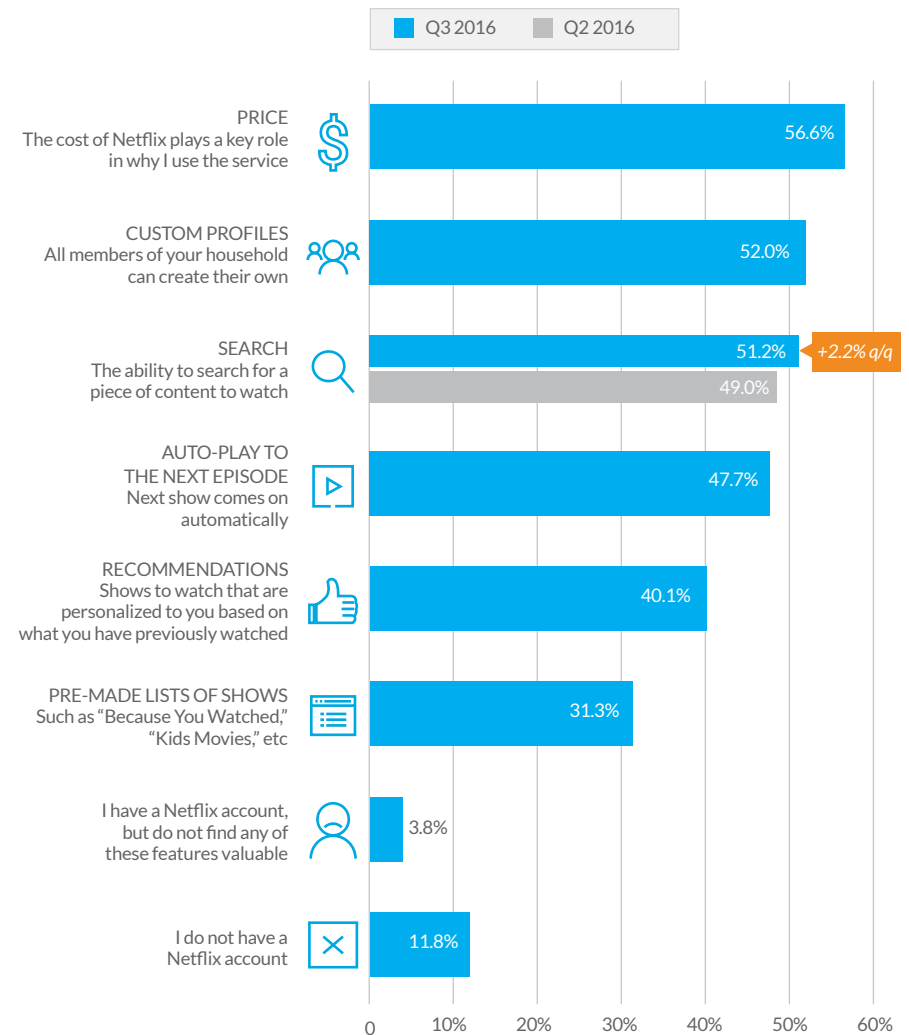
It's important to compare the large number of respondents (81.0%) who are happy with their ability to find something to watch on SVOD services to respondent satisfaction (58.3%) with finding something to watch on pay-TV services, or on pay-TV providers' PVOD offerings (63.9%). Why is Netflix, the market leader, so appealing to respondents? Similar to Q2 2016 results, the top three most appealing Netflix features are:

- "Price (the cost of Netflix plays a key role in why I use the service)" – 56.6%
- "All members of your household can create their own profile" – 52.0%
- "Search (the ability to search for a piece of content to watch)" – 51.2%

The fact that "search" was among the top three reasons why Netflix is appealing—and selection of this answer has increased 2.2% q/q—indicates respondents care about quickly and easily finding something to watch. Later in the survey, reasons for not using search functionality will be discussed. Pay-TV providers should note these reasons, and strive to innovate and compete with emerging video offerings.

NETFLIX'S APPEALING FEATURES

If you are a Netflix subscriber, which of the below features of Netflix's service do you find appealing?
(choose all that apply)



Over-the-Top Trends and Cord-Cheating



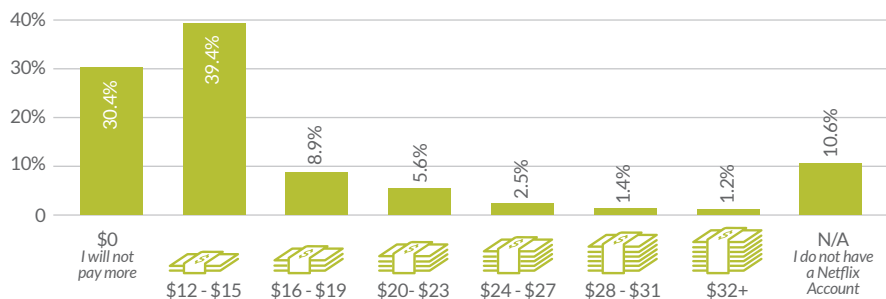
Additionally, price increases for Netflix and related services have been featured in the news frequently. In order to better understand this, TiVo began monitoring how respondents feel about the cost of Netflix, as well as what is the highest price at which they value this service. In Q3 2016, for the second quarter in a row, the largest group (39.4%) selected the \$12 to \$15 range as the most they would pay for Netflix service. Same as last quarter, the second largest group (30.4%) will not pay any more than they currently do.

It's no secret that the video industry is evolving, with new services emerging and existing services continuously innovating and marketing new packages, price structures and offerings. Therefore, TiVo wanted to engage with respondents to determine how far these services could go to gain adoption. New to TiVo's Q3 2016 Video Trends Report is a question that asks: If Netflix or Hulu offered a free TV service requiring viewers to watch commercials, would the respondent consider using it? Sixty-nine percent of respondents answered yes, with the bulk of respondents (83.3%) willing to watch one to four commercials in a 30-minute period. Of those uninterested in a free service with commercials, it is interesting to note that 14.3% are open to commercials if content is personalized to their interests and/or viewing preferences.

TiVo's data supports Hulu's decision to sunset its free version, which relied on commercial revenue. Because the vast majority of respondents are only willing to view one to four commercials, it would be very difficult for a SVOD to be successful with this limited number of revenue-driving commercials.

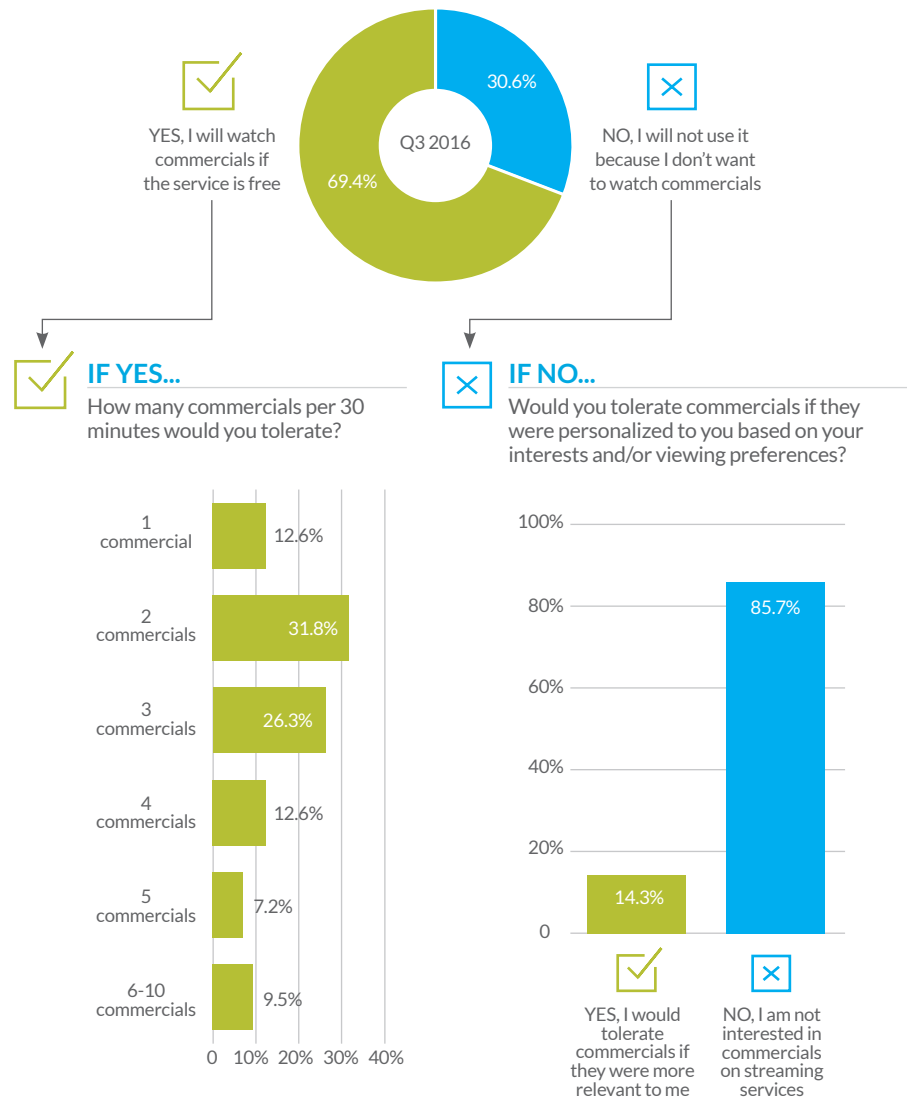
THE COST OF NETFLIX

If Netflix were to increase the monthly price for its service, what is the most you would pay each month for your Netflix account?



FREE SERVICE

If Netflix or Hulu offered a FREE TV service, but you were required to watch commercials, would you consider using it?



Over-the-Top Trends and Cord-Cheating



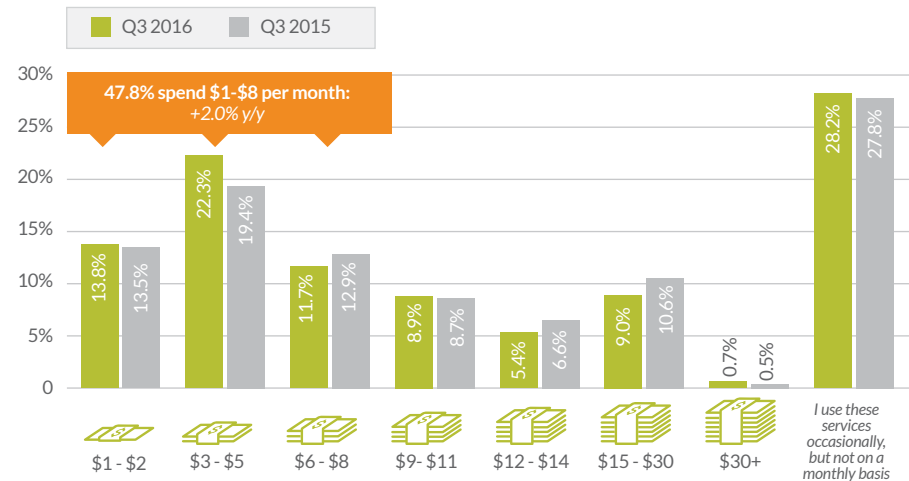
TVOD SERVICES

Below is a breakdown of the state of adoption, market share trends and overall engagement with TVOD services. In Q3 2016:

- 36.3% of all respondents use pay-per-rental or third-party TVOD services, but growth is flat for these services both q/q and y/y.
- The top three TVOD services used are Amazon Video, Redbox kiosks (at stores), and iTunes.
 - Redbox Kiosks was the only service to experience notable declines, with usage down 2.2% q/q and 3.0% y/y.
- 47.8% of respondents spend \$1 to \$8 per month renting from TVOD services, an increase of 2.0% y/y.
- 70.3% of respondents using TVOD services watch content on a weekly basis, which decreased 3.6% q/q (see chart on page 20).
 - The bulk of this group (54.1%) watch five hours or less.

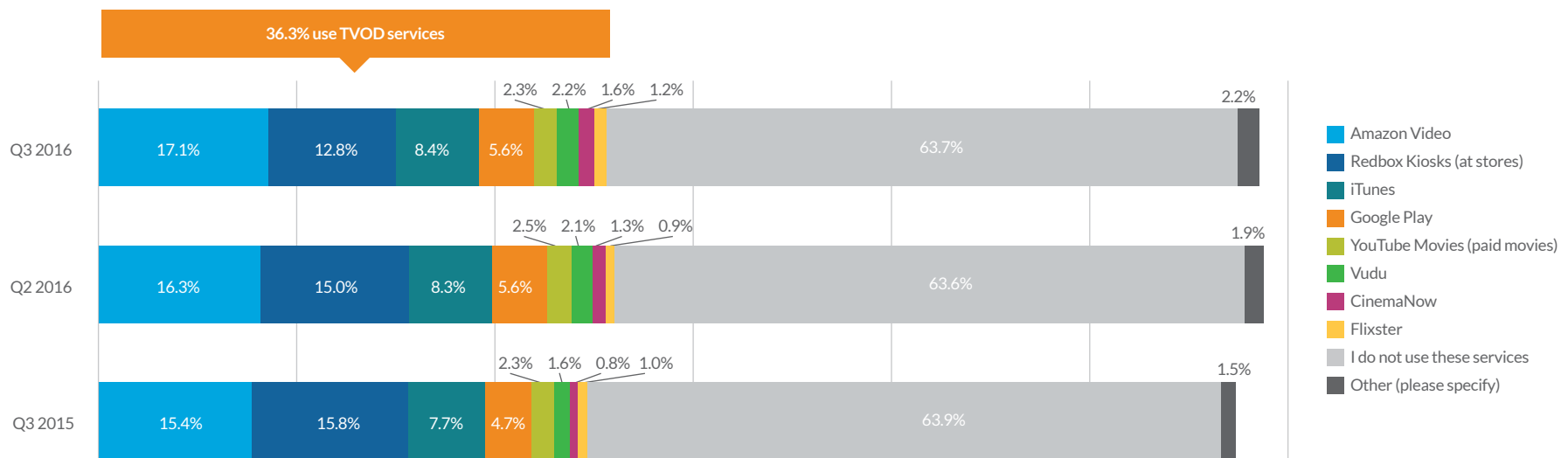
MONTHLY SPEND ON TVOD SERVICES

How much do you spend per month renting movies from these pay-per-rental services?



TVOD SERVICES

Do you rent, or purchase movies from services like Amazon, CinemaNow, iTunes, Redbox kiosks, Vudu, etc.? (choose all that apply)



Over-the-Top Trends and Cord-Cheating



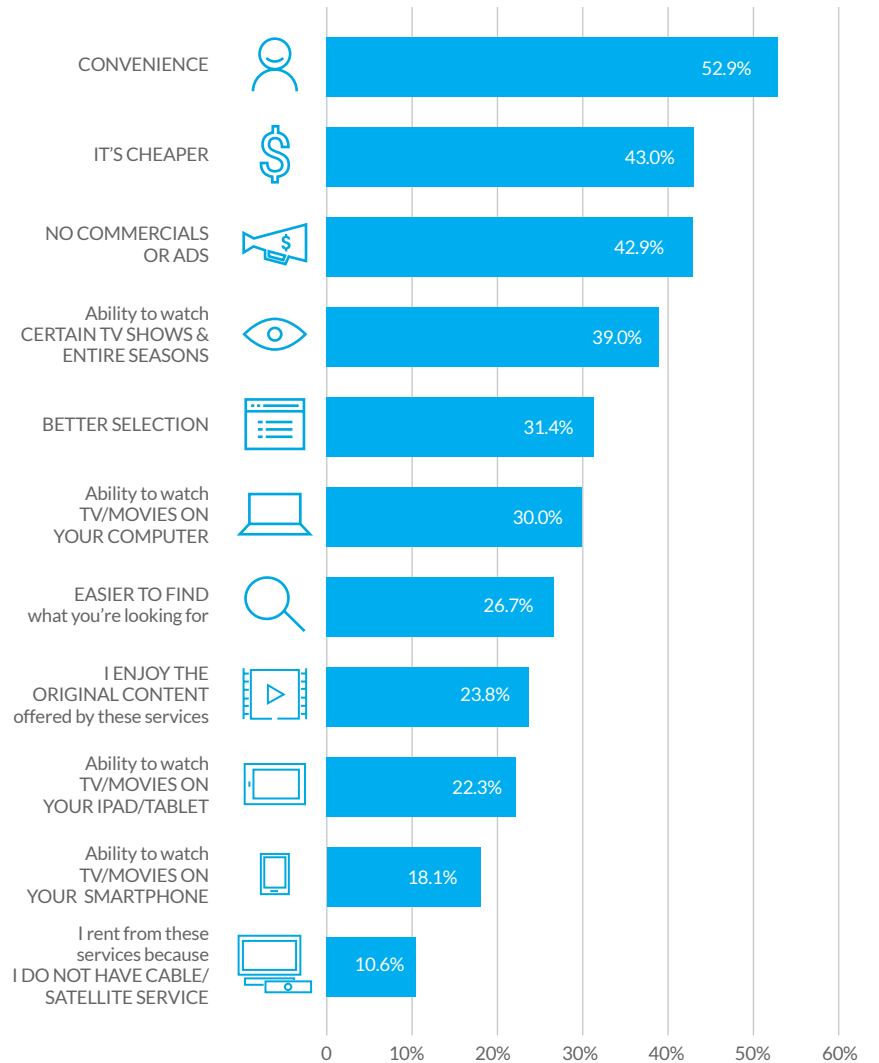
The Enticement to Cord-Cheaters and Cord-Cutters

Why are both categories, SVOD and TVOD, so appealing to consumers? For the second quarter in a row, the top five reasons for using these services are:

- “Convenience” – 52.9%
- “It’s cheaper” – 43.0%
- “No commercials or ads” – 42.9%
- “Ability to watch certain TV shows and whole seasons (or binge viewing)” – 39.0%
- “Better selection” – 31.4%

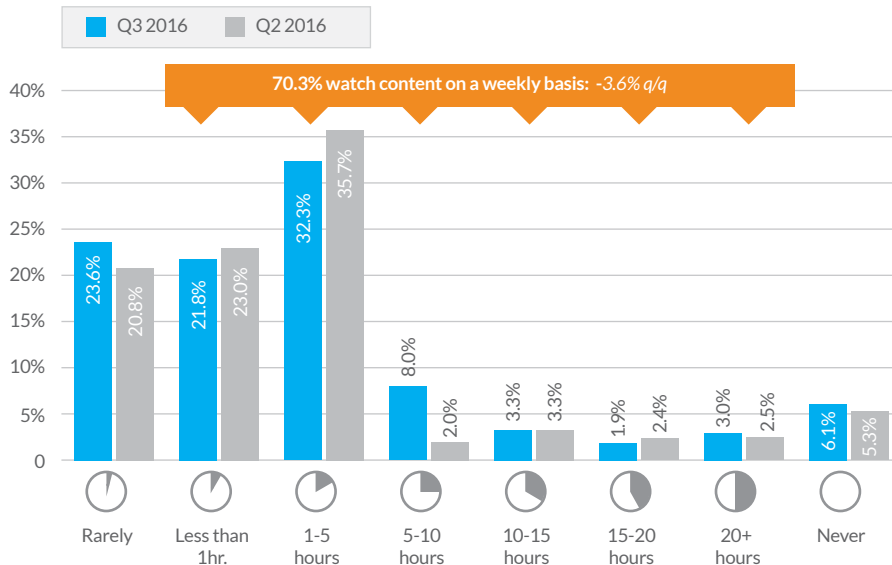
WHY USE OTT SERVICES

Why do you use these third-party rental and/or monthly subscription services like Amazon, iTunes, Netflix, Vudu, CinemaNow, Blockbuster, Redbox, YouTube? (choose all that apply)



VIEW TIME FOR TVOD SERVICES

On average per week, how many hours do you watch content on these pay-per-rental services?





After a deeper analysis of the Q3 2016 survey results, TiVo's Data Science Team discovered a strong correlation between those who want an à la carte pay-TV offering, and those who would like a free OTT streaming service (with commercials) such as those offered by Netflix or Hulu. While it was apparent that a large population (78.0%) of respondents desire à la carte pay-TV, what the Data Science Team found striking was that of those respondents who want à la carte, 75.8% would also use a free OTT streaming service.

TiVo believes this relationship between à la carte and free OTT is interesting. While the industry has talked at length about how cutting pay-TV service in order to bundle various video services can often cost more than a pay-TV package, TiVo's survey reveals that this may actually be what consumers want. Is the winning combination an à la carte package of about 18 channels for \$29.46/per month, plus a free OTT streaming service?

Connected Devices

With the incredible growth of mobile viewing devices (tablets, laptops, phones), households have essentially added multiple TVs to their homes, an opportunity which pay-TV providers, content owners and CE manufacturers can capitalize on. TiVo believes improvements could be made in personalization of recommendations and advertising. More so than any other device, mobile phones tend to be personalized and used by only one person. In addition, the type of content consumed on a mobile device tends to be different than the type of content that same viewer watches from a set-top box.

Therefore, it's important to keep track of the size of the connected device audience as a whole to know the potential reach of these efforts.

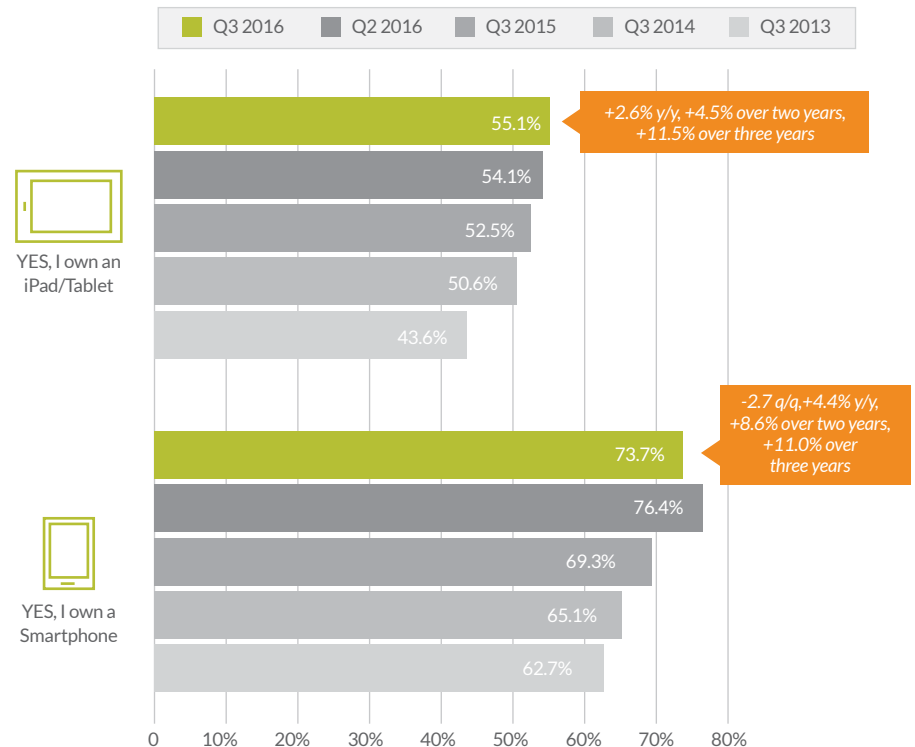
TABLETS AND SMARTPHONES

In Q3 2016, 86.1% of respondents own an iPad/tablet and/or a smartphone. A further breakdown shows:

- 55.1% own an iPad/tablet, a slight increase q/q, 2.6% y/y, 4.5% over two years and 11.5% over three years.
- 73.7% own a smartphone, which decreased q/q, but the data shows a more positive outlook long-term with increases of 4.4% y/y, 8.6% over two years and 11.0% over three years.

TABLET & SMARTPHONE OWNERS

Do you own an iPad/tablet or a Smartphone? (choose all that apply)



Connected Devices



TV-ORIENTED DEVICES

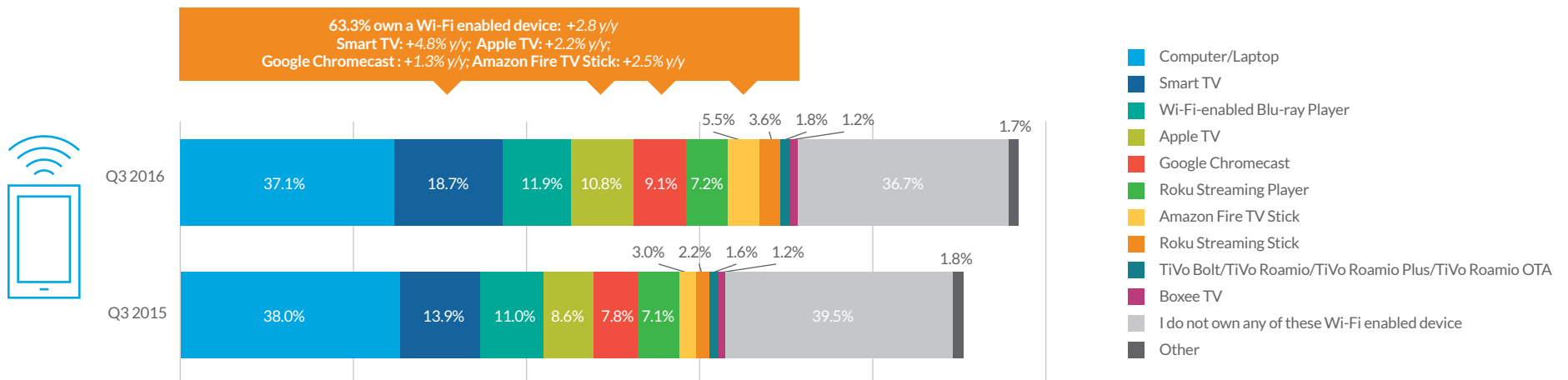
In Q3 2016, 63.3% of respondents own a Wi-Fi enabled device—a 2.8% increase y/y. For the sixth quarter in a row, the top devices owned are:

- “Computer/laptop” – 37.1%
- “Smart TV” – 18.7% (increased 4.8% y/y)
- “Wi-Fi-enabled Blu-ray Player” – 11.9% (increased slightly y/y)
- “Apple TV” – 10.8% (increased slightly q/q and 2.2% y/y)
- “Google Chromecast” – 9.1% (increased 1.3% y/y)

While the Amazon Fire TV Stick did not appear in the five top devices owned, it did experience positive growth of 2.5% y/y.

TV-ORIENTED DEVICES

Do you have any of the following connected devices (Wi-Fi enabled devices)(this question excludes gaming devices, smartphones and tablets)? (choose all that apply)



Pay-TV Providers' TV Everywhere Offerings



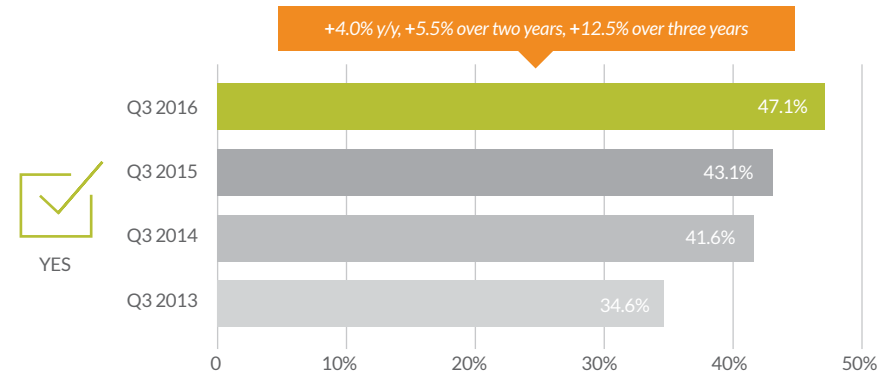
State of Awareness: In Q3 2016, 47.1% of respondents are aware their pay-TV provider offers an app that allows them to watch TV/movies on devices such as a smartphone, iPad/tablet and/or computer/laptop. TVE awareness increased 4.0% y/y, 5.5% over two years and 12.5% over three years.

State of Adoption: 28.1% of respondents use their pay-TV provider's TVE app, an increase of 1.9% q/q, 4.2% y/y, 4.4% over two years and 8.5% over three years.

State of Viewing and Engagement: Of those respondents, 58.4% use their TVE app on a weekly basis, a slight increase q/q, and 16.6% y/y. The category "Four days a week" increased 1.8% q/q, 2.4% y/y and 3.1% over two years.

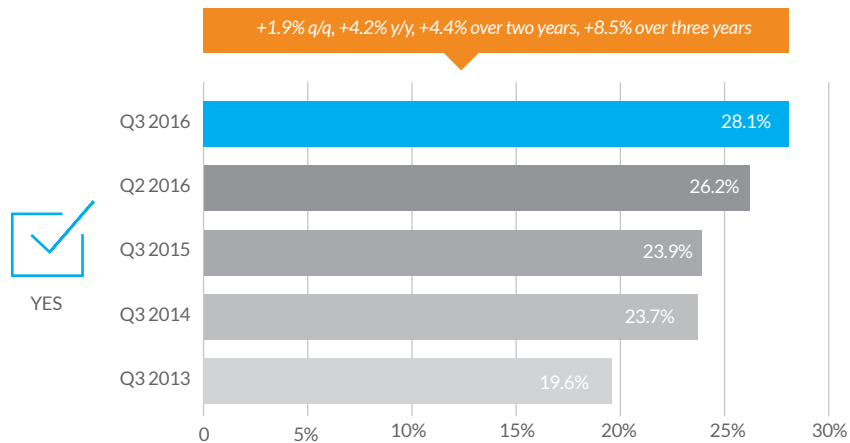
TV EVERYWHERE: AWARENESS

Does your cable/satellite provider offer an app(s) that allows you to watch TV/movies on devices such as a smartphone, iPad/tablet, or a computer/laptop?



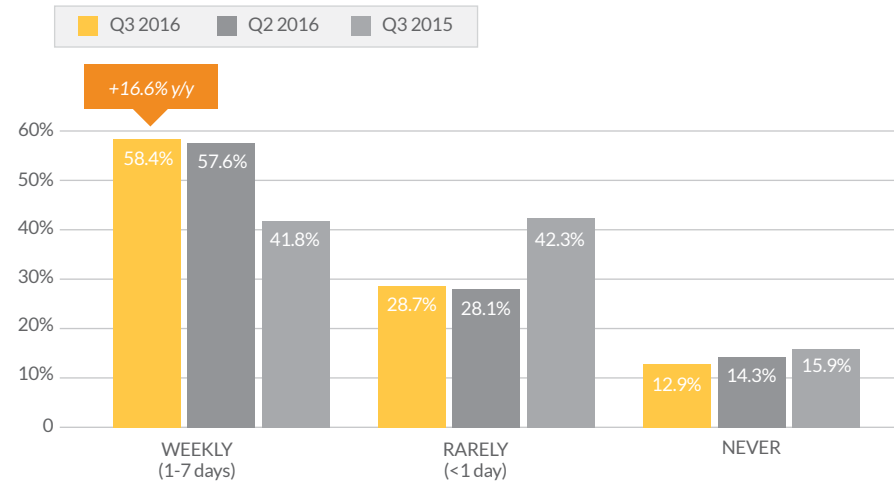
TV EVERYWHERE: ADOPTION

Do you access your cable/satellite provider's TV offering on your iPad/tablet, smartphone, and/or computer/laptop?



TV EVERYWHERE: WEEKLY USAGE

If yes, how often do you use your cable/satellite provider's app, or TV everywhere offering, on a weekly basis?



Pay-TV Providers' TV Everywhere Offerings



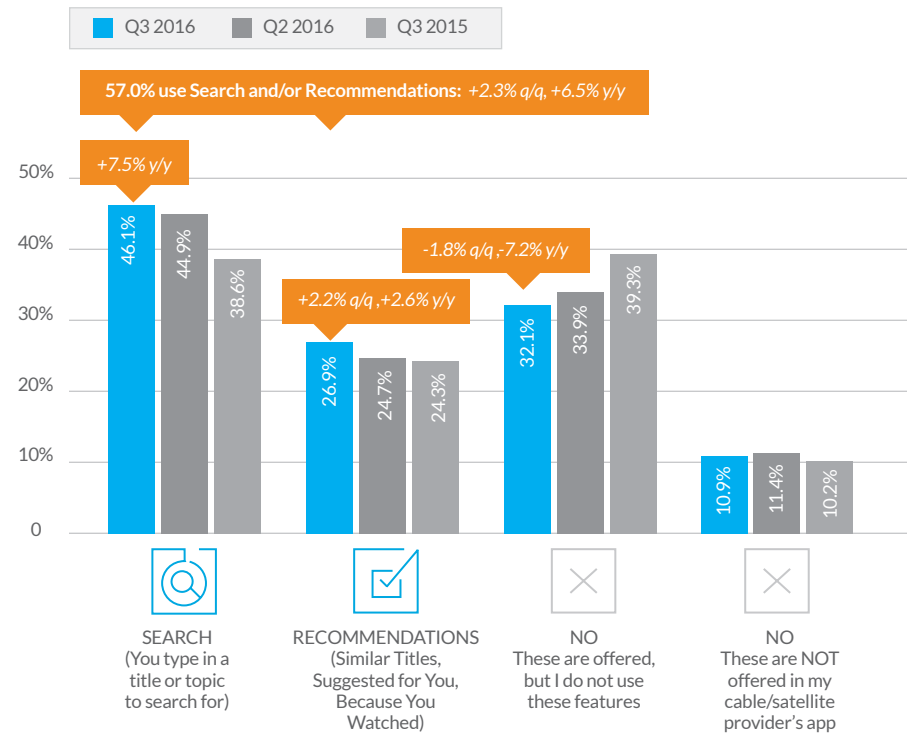
In addition to actual usage, TiVo tracks respondent engagement with functionality created by pay-TV providers to ease content discovery on TVE apps. In Q3 2016, 57.0% of respondents are engaged with the search and/or recommendations provided in their TVE app. Engagement saw positive growth overall of 2.3% q/q and 6.5% y/y. Below is a breakdown of overall engagement with content discovery functionality:

- “Search (you type in a title or topic to search for)” – 46.1% (increased slightly q/q and 7.5% y/y)
- “Recommendations (Similar Titles, Suggested for You, Because You Watched)” – 26.9% (increased 2.2% q/q and 2.6% y/y)

It is worth noting that the answer choice “No, these are offered, but I do not use these features,” which represents those who choose not to engage with the discovery technology offered to them, decreased 1.8% q/q and 7.2% y/y.

TVE: CONTENT DISCOVERY USAGE

Do you leverage any of the following features in your cable/satellite provider's app?
(choose all that apply)



TV Network Apps



In addition to pay-TV providers' TVE offerings, TV networks continue to deploy and update enticing mobile apps that connect the viewer to their content. While many of these apps require the viewer to have pay-TV service in order to view content, the industry is seeing a shift with networks, such as HBO and CBS, launching subscription-based access without the requirement of a pay-TV login.

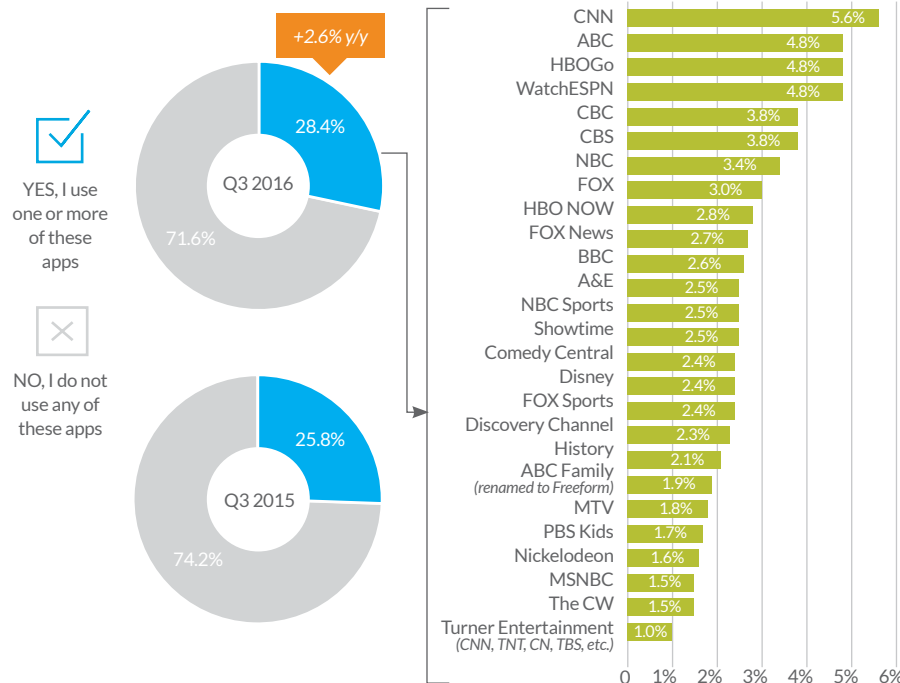
In Q3 2016, 28.4% of respondents use one or more TV network apps, an increase of 2.6% y/y. The top TV network apps respondents use are:*

1. CNN - 5.6%
2. ABC - 4.8%
3. HBOGo - 4.8%
4. WatchESPN - 4.8%
5. CBC - 3.8%
6. CBS - 3.8%

*There was a tie for fifth-most-used TV network app.

TV NETWORK APPS

Do you have any of the following TV/TV Network apps downloaded on your iPad/tablet and/or Smartphone? (choose all that apply)

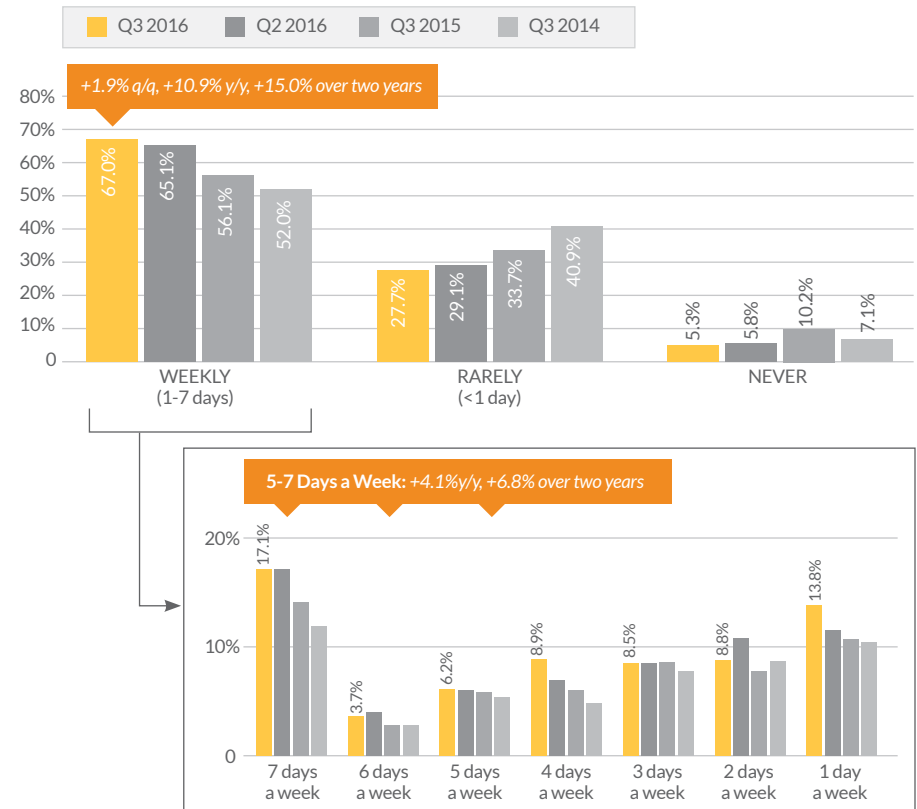


While overall adoption (28.4%) isn't enormous, there is positive growth in weekly usage by respondents who do use TV network apps. Below is a highlight of Q3 2016 usage of TV network apps:

- 67.0% of respondents use these apps on a weekly basis, an increase of 1.9% q/q, 10.9% y/y and 15.0% over two years.
- Additionally, respondents are using these apps more—five to seven days a week, to be specific—increased 4.1% y/y and 6.8% over two years.

TV NETWORK APPS

How often do you use these TV/TV Network apps?



Content Discovery: Search, Recommendations, Social Discovery and Sports Discovery



In Q3 2016, 64.9% of respondents get frustrated “always” or “sometimes” when trying to find something to watch on TV. The positive news for pay-TV providers is that the response “Never, I can always find something” increased 2.5% q/q.

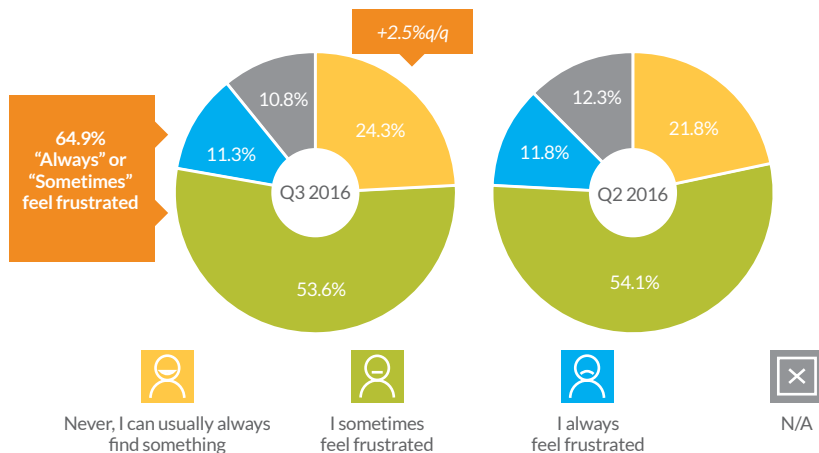
Another source of frustration when navigating the myriad of available content sources and platforms is inconsistency in content availability. As consumers become increasingly connected and mobile, many are discovering that some content is only available on certain services, devices, or platforms, or that specific episodes and seasons are trapped behind additional pay walls.

In Q3 2016, 28.2% of respondents have stopped watching a show they previously enjoyed because it became too hard to access. Below are the primary drivers for why the respondents “show-dumped” and gave up on the content:

- “The content is not available on the streaming services I currently subscribe to” – 27.0%
- “New seasons and episodes were not available on a streaming service” – 24.8%
- “I downgraded my TV package and no longer have access to the channel the content was on” – 21.1%

FINDING SOMETHING TO WATCH

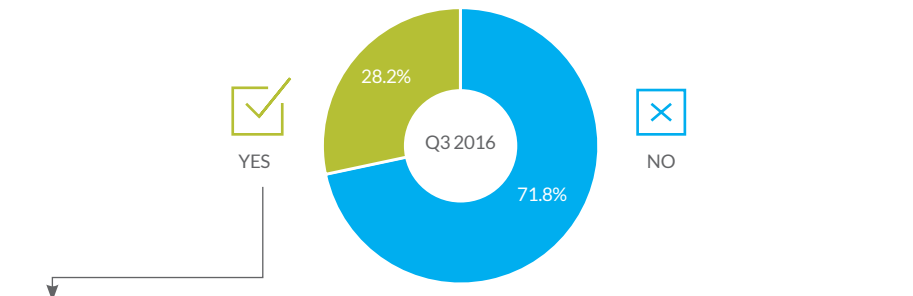
How often do you get frustrated when trying to find something to watch on TV?



This data suggests that content owners must be cautious when implementing fragmented access and pay structures. Long-term viewership and engagement should be considered against short-term licensing incentives which may prevent viewers from watching content in a seamless, continuous fashion.

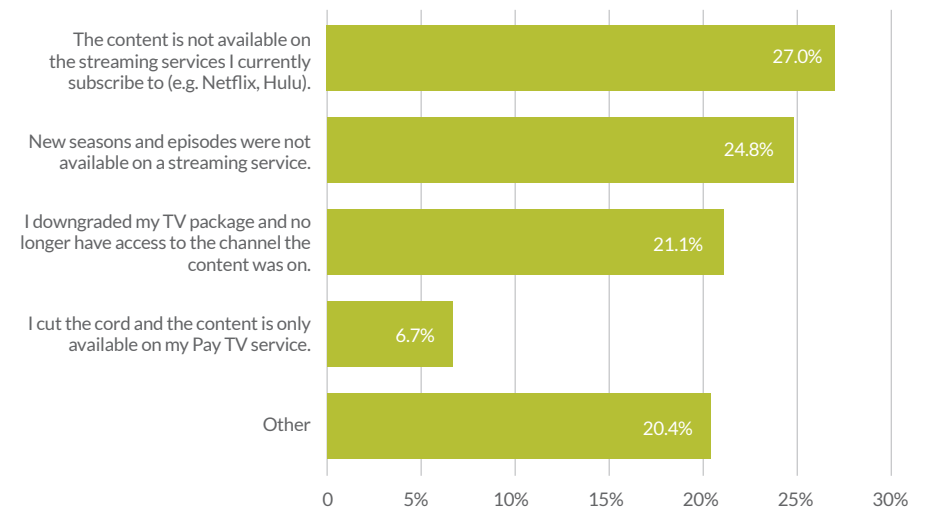
TROUBLE FINDING CONTENT

Have you ever stopped watching a show that you previously enjoyed because it became too difficult to access the content?



IF YES...

From the following list, please select the main reason the content became too difficult to access:



Content Discovery:

Search, Recommendations, Social Discovery and Sports Discovery

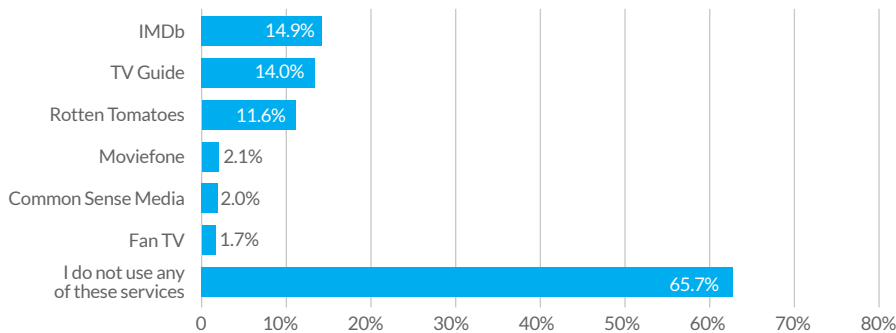


In addition to overall frustration, TiVo seeks to understand whether respondents are leveraging third-party services to find something to watch. In Q3 2016, 34.3% of respondents consult a third-party entertainment source, such as Rotten Tomatoes, Moviefone, IMDb, Fan TV, etc. to assist them in finding something to watch on TV. For the second quarter in a row, the top entertainment services used by respondents are:

- “IMDb” – 14.9%
- “TV Guide” – 14.0%
- “Rotten Tomatoes” – 11.6%

THIRD-PARTY ENTERTAINMENT SOURCES

Do you use any of the following services to find something to watch on TV (not just for movie theater information)?



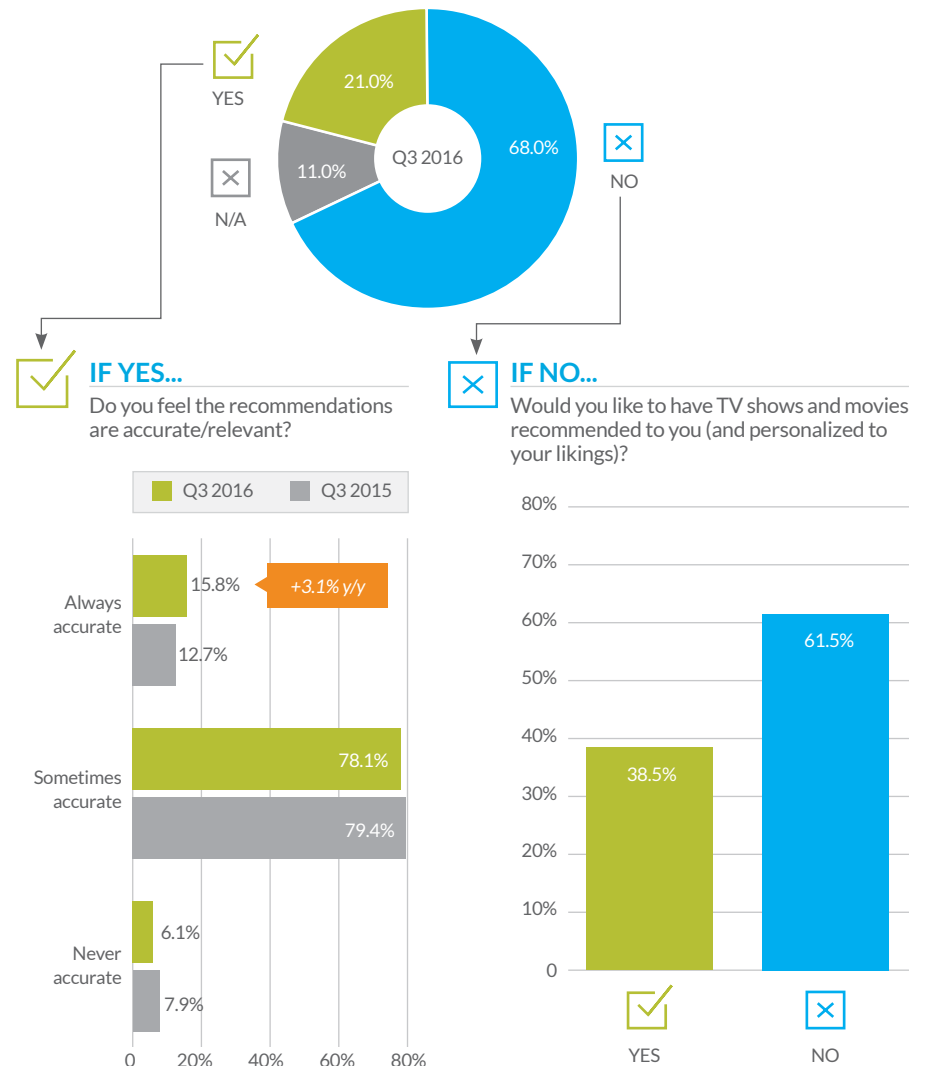
RECOMMENDATIONS

In Q3 2016, 21.0% of respondents answered that their pay-TV provider makes recommendations for relevant TV shows/movies. This remains relatively flat q/q and y/y. Of the 68.0% of respondents who do not receive recommendations, more than half (38.5%) would like this functionality in order to improve the discovery of their TV shows/ movies. Pay-TV providers have made great strides in rolling out this functionality on TVE experiences, but STBs need to be expedited to keep up with the competition.

Equally important to overall usage of recommendations is accuracy of recommendations. In Q3 2016, 93.9% of respondents feel they are “always accurate” or “sometimes accurate.” Pay-TV providers will be pleased to know that the answer “always accurate” increased 3.1% y/y.

RECOMMENDATIONS

Does your cable/satellite provider make recommendations of TV shows and Movies to you based on your interests, past viewing habits, etc. (personalized to you)?





New:

Quarterly Tips Series:

LEVERAGING DATA IMPROVES MARKETING EFFORTS



In early October, HBO shared how the use of data has accelerated its marketing campaign planning from as much as six months in advance to almost real time.² The Streaming Media article described how after the launch of its new offering, HBO Now, the network was able to interact directly with consumers for the first time. According to the article, on a daily basis, the HBO Now team reviews and leverages its subscriber data, and then adjusts HBO's marketing campaign efforts as quickly as the next day.

TiVo has spent a great deal of time educating pay-TV providers, digital publishers and CE manufacturers on how to utilize real subscriber data to deliver targeted content recommendations and promotions, and struggles to understand why many providers are slow to do so. When video service providers are asked about using data to deliver targeted marketing campaigns, feedback varies and includes the following:

- It's a challenge to get all the various data sources combined into one central location.
- The BI team is overwhelmed and does not have the bandwidth to support these efforts within a reasonable turnaround time.
- The resources do not exist to manage large amounts of data.

TiVo feels the video industry must tackle the obstacles holding it back from leveraging subscriber data. Doing so can begin with something simple; for instance, when a pay-TV provider captures every click on the remote, that information alone is enough to segment a subscriber base in order to better target and test various content and promotions.

Capturing subscriber data allows video service providers to identify clusters, or segments of viewers, for similar viewing interests and overlaps in viewing behavior. Thus, video service providers can identify new content to promote as well as subscribers who may be in favor of upgrading to a premium package—both of which should be A/B tested with each of these segments.

Examples of the Power of Data to Deliver Targeted Marketing

1. Launch seasonal promotions: Fall is a great time to leverage data as new series are introduced and existing TV shows have season premieres. For example, when a viewer chooses to set his or her DVR to record the new "Kevin Can Wait" series premiere, the data can be compared to other season premieres in order to provide valuable information back to the network regarding the number of households planning to watch the episode.

2. Conduct tests based on data: The use of data enables testing, which takes the analysis one step further. Not only can video providers test, but they also have enough data to conduct A/B tests, which ensure promotions meet internal expectations before being sent to the entire audience. By leveraging these results, personalized recommendations of new TV shows/series can be boosted or promoted to the correct target audience. For example, TiVo recently completed a multivariate A/B test for a customer, in which the goal was for viewers to click through to the details page of a new series premiering in the coming weeks. This multivariate A/B test ran across the provider's set-top boxes and TVE platforms—plus it included key variables, such as time of day and favorite series. The winning test campaign had an increased click-through rate of 30.0%, as compared to the control group that did not receive the promotion.

² Krefetz, Nadine. "How Data Is Changing HBO." *Streamingmedia.com*. N.p., 4 Oct. 2016. Web. <<http://www.streamingmedia.com/Articles/Editorial/Featured-Articles/How-Data-is-Changing-HBO-113915.aspx>>.



New:

Quarterly Tips Series:

LEVERAGING DATA IMPROVES MARKETING EFFORTS

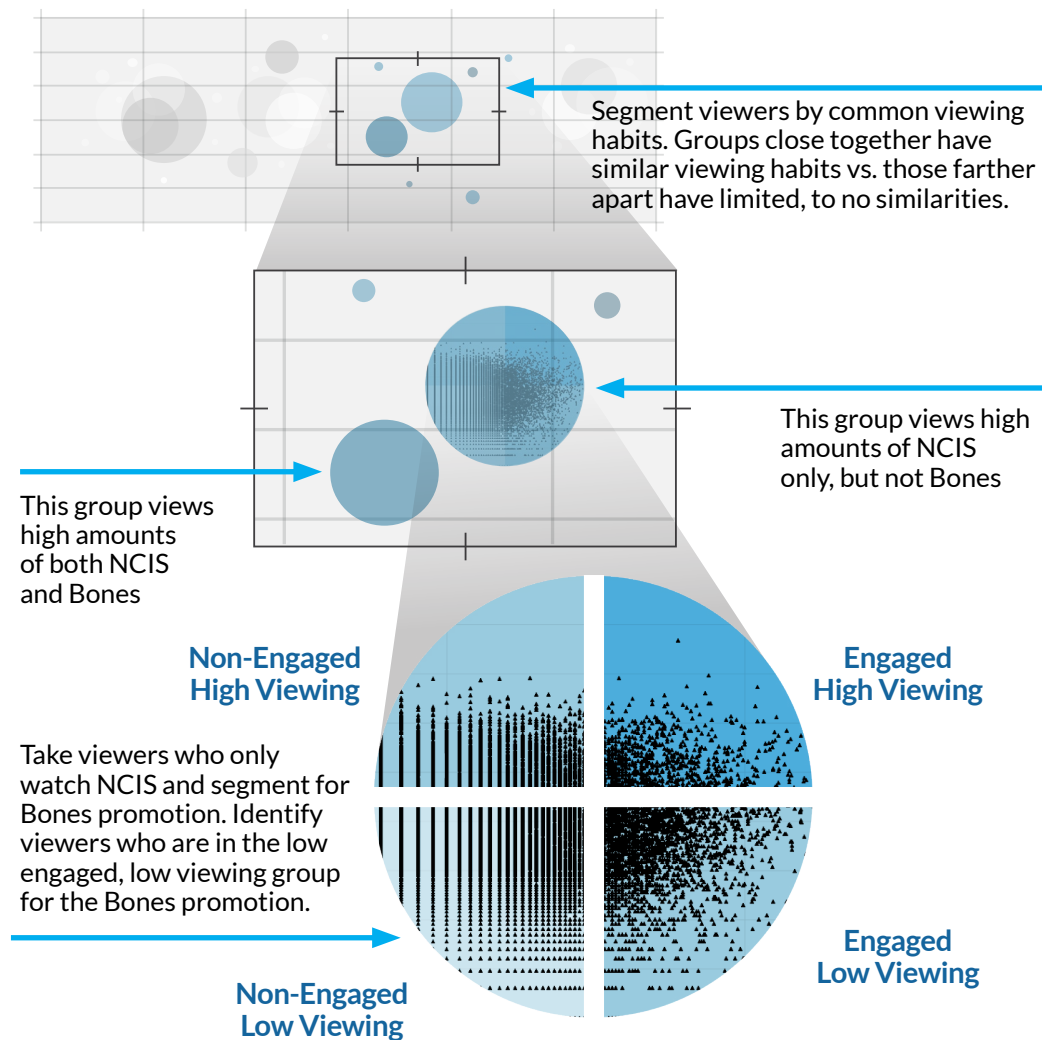


3. Target at-risk subscribers through segmentation: Another area of content targeting is segmenting viewers who are at high risk to churn. Usually this group consists of low-viewing/low-engagement viewers who typically watch a few hours of television per week, and often it's the same two to four shows. Additionally, "low-engagement" means they are not leveraging VOD or TVE offerings. Rather than including this segmentation in "spray-and-pray" marketing campaigns, video service providers can target these viewers based on content watched.

Once this at-risk group is identified and segmented, providers can test various promotions. For example, if a segment of this group watches a considerable amount of "NCIS" on CBS but doesn't watch "Bones" on FOX, boost "Bones" to that group. Another example is to segment viewers who watch "Gotham" on FOX, but do not watch the similar series "Blindspot" on NBC.

When TiVo ran a similar campaign for a customer, the test results showed that more than 10.0% of viewers stuck with the content, thus increasing overall engagement. By leveraging this information as well as running univariate and multivariate A/B tests, video service providers can act on their data to drive engagement, increase viewing, and even grow ARPU (Average Revenue Per User).

The Use of Segmentation for a Targeted Content Promotion



Content Discovery:

Search, Recommendations, Social Discovery and Sports Discovery



SEARCH

Search is one form of content discovery, and like the video industry as a whole, this functionality has evolved over the lifetime of this report. Therefore, this report breaks search functionality into three categories: lists or category searches, text search and voice search.

Lists or Category Searches

Many pay-TV providers offer pre-defined category lists, or genre lists, as another method of search. Therefore, new to the Q3 2016 Video Trends Report is a question tracking usage of this functionality to find something to watch. Nearly 23.0% of respondents use pre-made category lists to search for a specific channel or genre to watch, such as "Family/Kids Shows" or "Lifestyle Channels."

Text Search

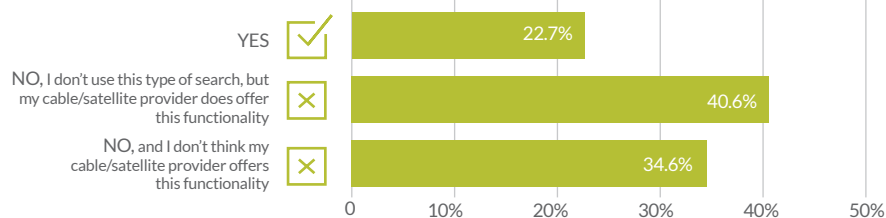
Additionally, 49.0% of respondents type a TV show/movie into the search box of their STB to find something to watch, an increase of 3.1% q/q and 4.7% y/y. Of the respondents who use search to find something to watch, 88.1% feel the results are accurate, which increased 3.7% q/q and 3.4% y/y.

Why are 49.8% of respondents not using text search? The top three reasons respondents do not leverage text search functionality are:

- "I only watch a few channels so no need to search" – 35.2%
- "It takes too much time" – 21.7% (increased 2.6% q/q)
- "I am not interested in searching for TV shows/movies" – 21.5%

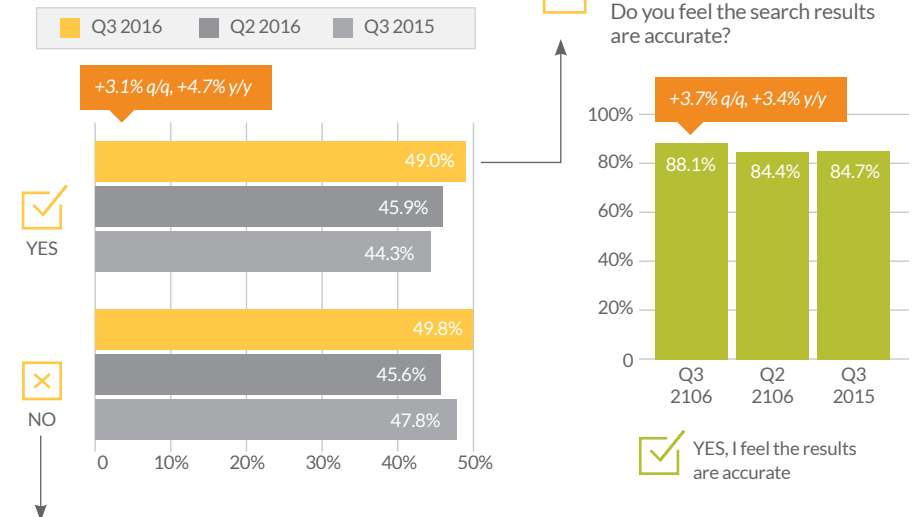
LIST/CATEGORY SEARCH

Do you use the pre-made category lists to search for channels such as "Family/Kids Shows," "Sports," "Lifestyle Channels?"



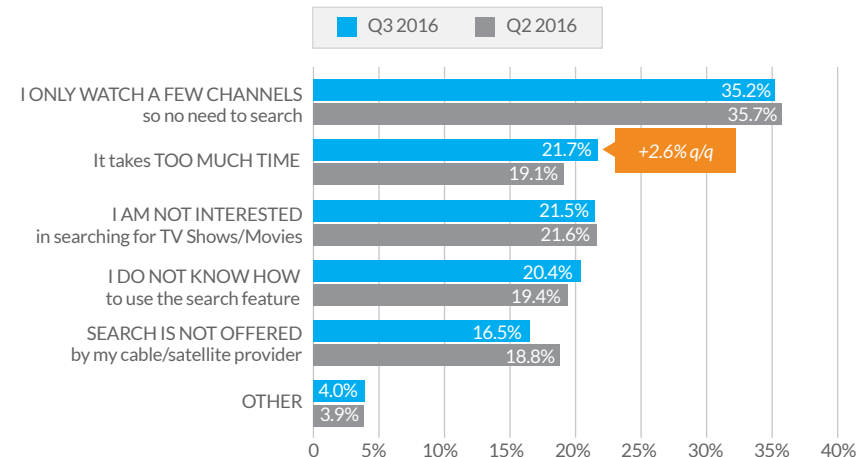
TEXT SEARCH

Do you ever type in a TV show, movie title, or topic into a search box to find something to watch in your cable/satellite guide?"



IF NO...

Why don't you use the search functionality offered to you? (choose all that apply)



Content Discovery:

Search, Recommendations, Social Discovery and Sports Discovery



VOICE SEARCH

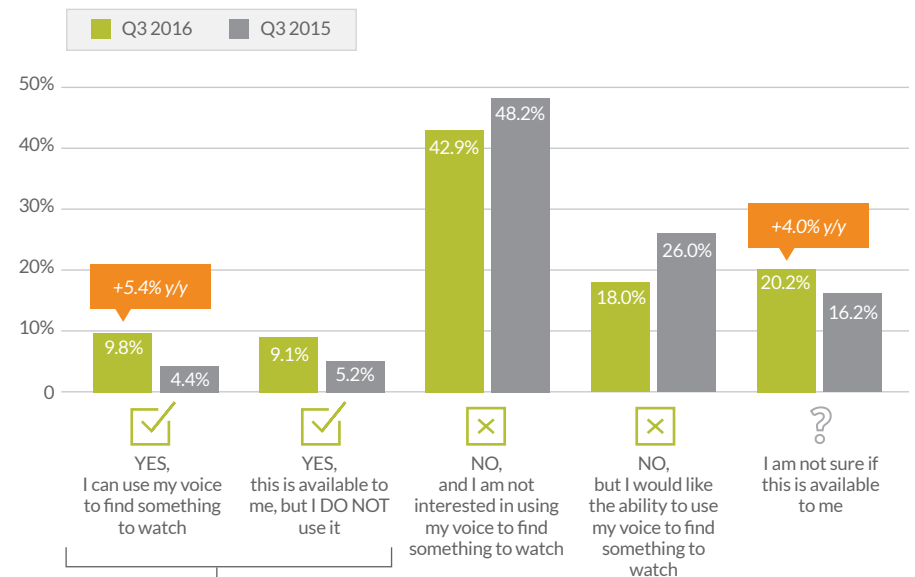
Voice search is the smallest of the three search categories, with 9.8% of respondents reporting the ability to talk into their device to search for a TV show/movie, a percentage which increased slightly q/q and 5.4% y/y.

Of respondents with voice search capability, 76.7% use it on a weekly basis. The largest group (35.0%) conducts one to three searches per week, and the second-largest group (20.1%) conducts four to seven searches per week.

While TiVo is aware that voice search is not yet offered by the majority of pay-TV providers, it's important to track awareness of this functionality. In Q3 2016, those unaware of whether this functionality is available (also the second-largest group at 20.2%) increased 4.0% y/y. This means pay-TV providers need to continue marketing service innovations to build awareness.

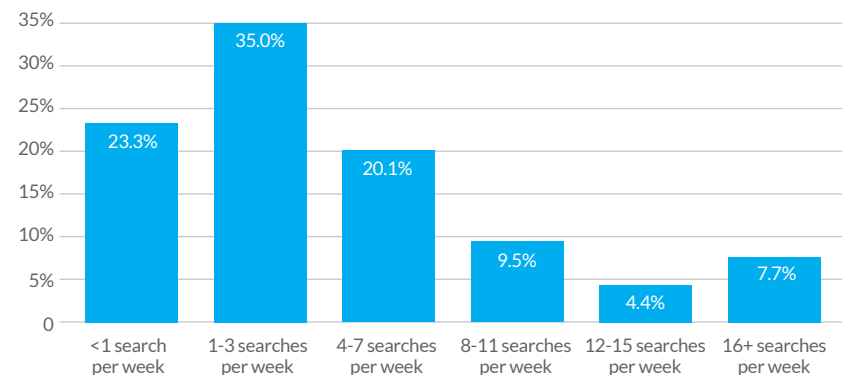
VOICE SEARCH

Do any of the devices you view TV and/or movies on allow you to talk into the device to search for a TV show/movie, or change channels, etc.? (For example, use your voice to say, "Is a scary movie on now?")



IF YES...

How often do you use voice search?



Content Discovery:

Search, Recommendations, Social Discovery and Sports Discovery



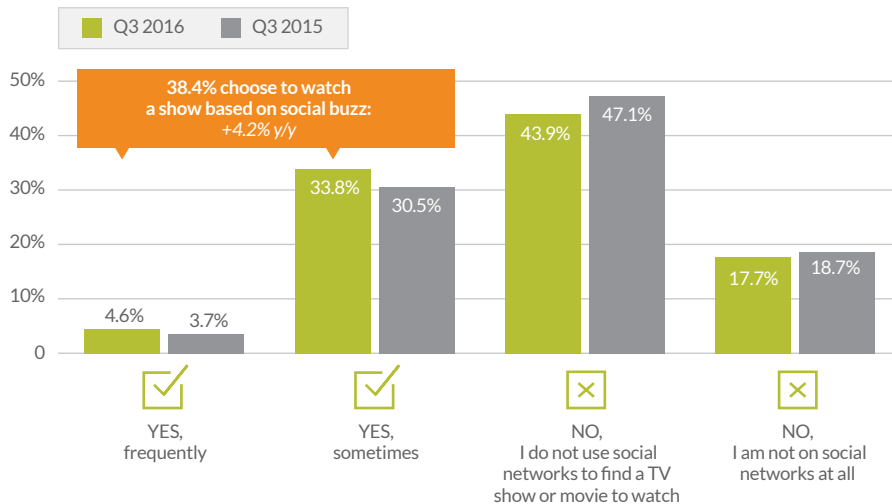
SOCIAL DISCOVERY

Twenty-four percent of respondents post about what they're watching on social media, up 1.8% y/y. Additionally, 38.4% of respondents choose to watch a show based on social buzz, an increase of 4.2% y/y.

While these numbers are promising, TiVo recommends offering an equally enticing social discovery feature that leverages subscriber data and segments groups based on viewing habits in order to suggest content according to what's popular among similar groups.

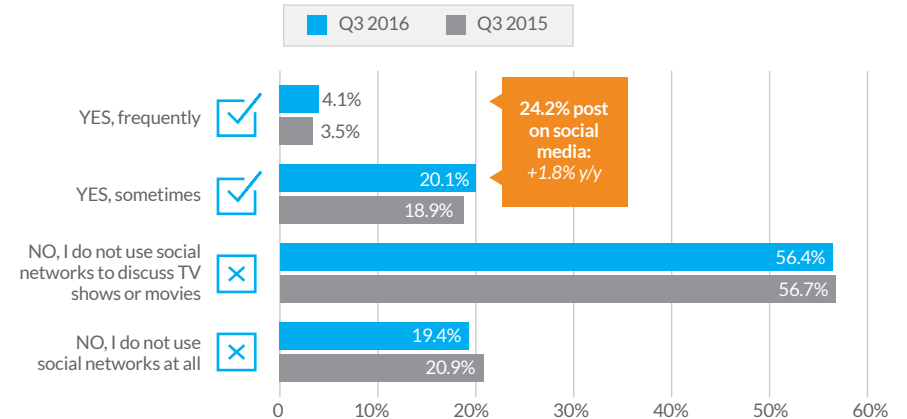
SOCIAL BUZZ

Do you ever choose to watch a TV show or movie because of all the buzz it's getting on Facebook, Twitter, or other social networks?



SOCIAL DISCOVERY

Do you post about what you're watching on social networks such as Twitter, Facebook, etc.?



Content Discovery: Search, Recommendations, Social Discovery and Sports Discovery



SPORTS DISCOVERY

In Q3 2016, 34.0% of respondents have trouble “always” or “sometimes” when trying to find something to watch on TV. Frustration with finding sports content continues to increase, with slight growth q/q, 2.0% y/y and 3.2% over two years.

Pay-TV providers might feel threatened by various sports leagues going direct to the consumer, but this further proves the immediate need to solve viewers’ challenges in finding their favorite teams’ sporting event. For example, the National Hockey League (NHL) recently announced a direct-to-consumer offering, called NHL TV.³ The NHL is offering two packages, one for \$139.96, which allows access to all games, and another for \$24.99, which allows access to subscribers’ favorite team only. Additionally, ESPN recently announced the launch of a direct-to-consumer offering in 2017.⁴ While details are limited, ESPN’s CEO stated that the enormous amount of digital sports’ rights creates a “treasure trove” for monetization.

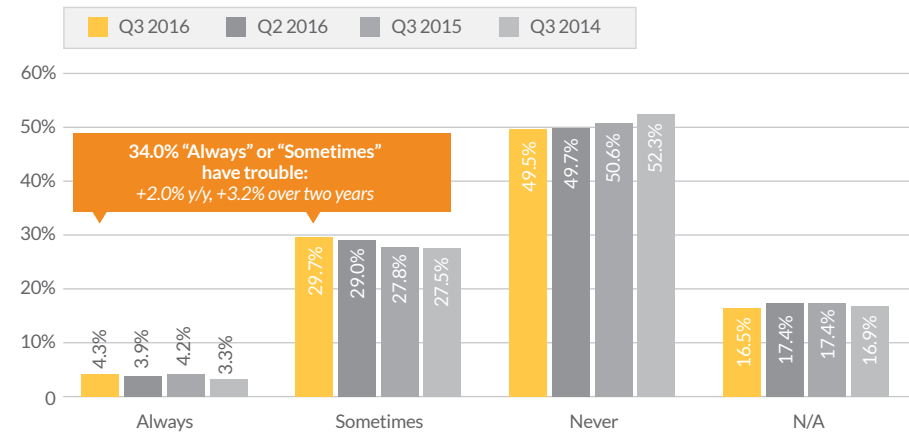
These two offerings demonstrate that the competition to pay-TV providers is strong and growing stronger—so again, improving content discovery of sports content and marketing these improvements to subscribers will remain essential to increasing satisfaction.

³ Umstead, R. Thomas. “NHL Looks To Score With Digital Offerings.” *Multichannel News*. N.p., 12 Oct. 2016. Web. <<http://www.multichannel.com/news/sports/nhl-looks-score-digital-offerings/408387>>

⁴ Farrell, Mike. *Multichannel News*. N.p., 21 Sept. 2016. Web. <<http://www.multichannel.com/news/sports/iger-espn-bamtech-service-will-be-focused/407896>>.

SPORTS DISCOVERY

Do you have trouble finding your favorite sports teams games, or do you ever miss sporting events because it’s on a channel that is far down in your channel guide?



ABOUT TIVO

TiVo Corporation (NASDAQ: TIVO) is a global leader in entertainment technology and audience insights. From the interactive program guide to the DVR, TiVo delivers innovative products and licensable technologies that revolutionize how people find content across a changing media landscape. TiVo enables the world’s leading media and entertainment providers to deliver the ultimate entertainment experience. Explore the next generation of entertainment at tivo.com, forward.tivo.com or follow us on Twitter @tivo or @tivoforbusiness.



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