# TiVo®

Design the Ultimate Pay-TV User Experience

Introduction

Pay-TV subscribers should always be able to find something interesting to watch – at least when the pay-TV user experience presents viewing options intelligently. In this golden age of television, the amount of content available to viewers has never been greater. In fact, according to scheduling data:

- 13,515 pieces of free video-on-demand (VOD) content (10,290 are episodic and 3,225 are movies),
- 1,551 pieces of transactional video-on-demand (TVOD) content (including pay-per-view events), and
- 11,964 free TV broadcast offerings (primarily episodic).

In addition, pay-TV providers are increasingly offering linear episodes on demand, soon after the episode has aired. Adding to the complexity of the content discovery quandary, the default mechanism to find something to watch on set-top boxes (STBs) remains the traditional channel guide – an interface that typically does not incorporate all available content such as VOD catalogs or recorded content. This creates a disjointed content discovery experience that requires viewers to use multiple remote control buttons, screens and user interfaces – all to navigate available content. Content can appear in different formats, too: a grid for linear, a list for DVR and a set of carousels for VOD. An optimized content discovery-focused video experience delivers simplicity despite the complex underpinnings of multiple catalogs, and unifies multiple legacy user interfaces.
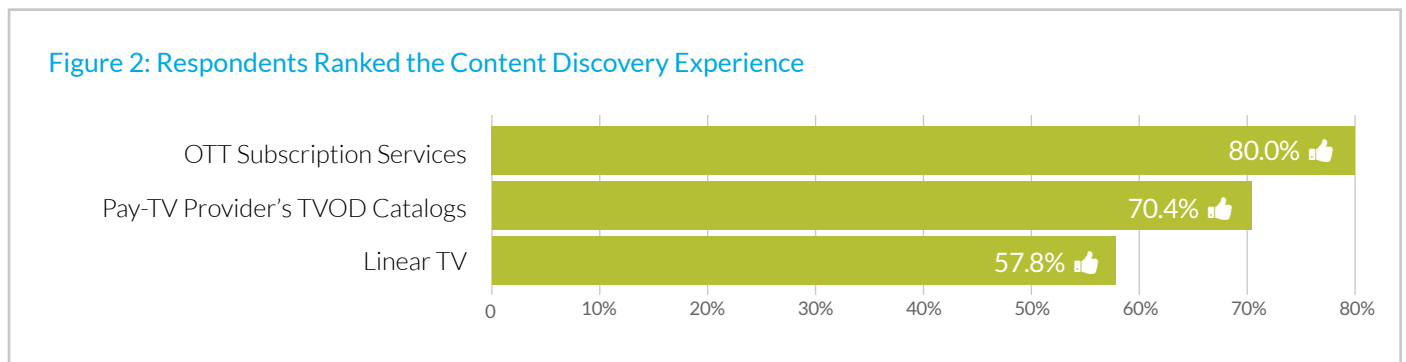

Figure 1:
Respondents: Do you plan to change cable/satellite provides in the next six months?
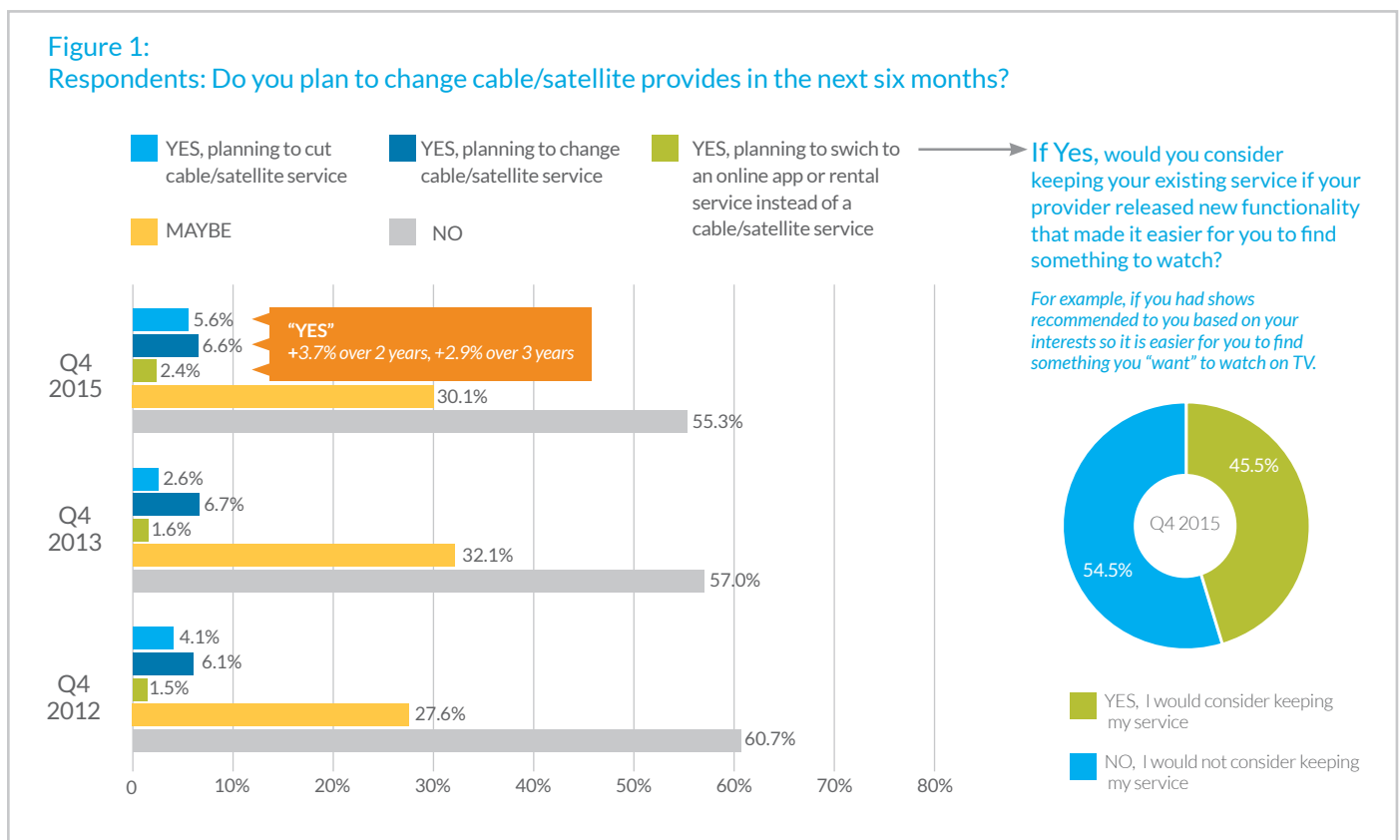
Source: Digitalsmiths' Q4 2015 Video Trends Report: Consumer Behavior Across Pay-TV, VOD, PPV, OTT, Connected Devices, and Content Discovery

According to Digitalsmiths' Q4 2015 Video Trends Report, of the 14.6% of survey respondents who plan to cut or change their cable/satellite service in the next six months, 45.5% of those would consider keeping their service if new functionality made it easier to find something to watch.

Furthermore, TiVo wanted to understand how survey respondents, who are also pay-TV subscribers, feel about the content discovery experience across various video offerings. The results, as ranked in order of favorability among these respondents, are as follows:

1. Subscription Over-the-Top (OTT) services offer the best experiences, with 80.0% of respondents saying these services make it easy to find something to watch.

2. TVOD catalogs of pay-TV providers come in second, with 70.4% of respondents stating they find the discovery experience easy.

3. Linear TV takes third place, with 57.8% of respondents answering it is easy to find something to watch on their pay-TV service.

Figure 2: Respondents Ranked the Content Discovery Experience

OTT Subscription Services	80.0% 👍
Pay-TV Provider's TVOD Catalogs	70.4% 👍
Linear TV	57.8% 👍

Source: Digitialsmiths' Q4 2015 Video Trends Report: Consumer Behavior Across Pay-TV, VOD, PPV, OTT, Connected Devices, and Content Discovery

The Content Discovery Challenge: Understanding How Recommendations Can Affect Viewer Behavior

It will come as no surprise that TiVo suggests pay-TV providers invest resources and money into delivering a more 'personalized' interface. The first benefit of personalized pay-TV interfaces is that they can ultimately reduce channel surfing and help viewers find the most relevant content based on their viewing habits and preferences. Secondly, once personalization is implemented, the pay-TV provider now has the ability to create multiple types of content recommendations that build on this foundation. This functionality is what TiVo refers to as predictive recommendations and "coming soon" recommendations. Both forms of content recommendations provide pay-TV providers a competitive advantage over OTT providers who do not have the ability to offer this type of functionality.

➡ Predictive recommendations allow the pay-TV provider to recommend content based on schedule-driven viewing habits, thereby speeding up the discovery of regularly watched TV shows and sports programming. Predictive recommendations surface content that can be categorized as programs that a viewer is familiar with and watches; however, it may not be apparent to the viewer that the program is currently airing, or that unwatched episodes are available to them in their DVR or via their pay-TV provider's VOD offering.

➡ "Coming soon" recommendations are ideal for pay-TV providers since they have a broadcast schedule component. This ensures that viewers will not miss any upcoming programs that they would be interested in watching, by allowing viewers (a) to set a reminder to watch the program or (b) to set their DVR to record the program.

## Expanding Viewership vs. Predicting Viewership

Enabling all of the approaches listed on the previous page can be challenging, as modeling each can require diametrically opposing methodologies. Many pay-TV providers dedicate only a single carousel, or two, to personalized recommendations, and then rely on editorial or genre-driven lists to surface other content. Doing so misses other critical ways in which viewers find programs to watch. If a single carousel is used, a constant tug-of-war occurs between personalized recommendations that expand viewership and predictive recommendations. When blended in a single carousel, or two, it is difficult to know when to show a viewer which type of recommendation. Models and algorithms optimized to deliver predictive recommendations are fundamentally different from those optimized for recommendations that expand viewership, so each provides a different scale of relevance. Another issue with a blended offering is that it can potentially confuse the viewer. Successful content discovery-focused carousels not only present relevant content, but also — via the carousel title — explain the context of why that carousel is relevant. Thus, blending recommended content into a single carousel can alienate the viewer, when the context of the recommendations is unclear. A more effective choice is to present several carousels, and to state with clear titles why that particular content is being presented to the viewer.

The goal of predictive recommendations is to understand the patterns of the viewer and, to some extent, to keep the viewers within that behavior. The goal of the recommendations that expand viewership is obviously to expand viewing habits. How can pay-TV providers best address all of a subscriber's available viewing patterns and avoid losing the viewer's trust? TiVo believes it starts with pay-TV providers making it their goal to best serve the viewers' needs. That goal can then be accomplished through individual carousels, which are further described on the following pages.

An Example in Powering Recommendations Based on Viewer Behavior

TiVo has found that, on weekdays, approximately 63% of the time a viewer is looking to find content he or she has already watched and enjoyed. This underlies the continued success of the pay-TV model – that weekly repetitive behavioral viewing is still valid. However, this drops to only 40% of the time on the weekends, when generally people have more flexibility to broaden their viewing and to enjoy something new. The following chart shows this pattern over a period of a few weeks, summarized for a sample pay-TV provider with millions of subscribers. With this understanding, a pay-TV provider might even A/B test the position of the viewership-expanding recommendations carousel (higher on weekends, lower on weekdays) and the predictive recommendations carousel (higher on the weekdays, lower on the weekends), in order to optimize and limit the amount of clicking, navigating, or scrolling the viewer is forced to do to find content he/she enjoys.

Figure 3: Viewing Patterns During the Weekdays vs. Weekends
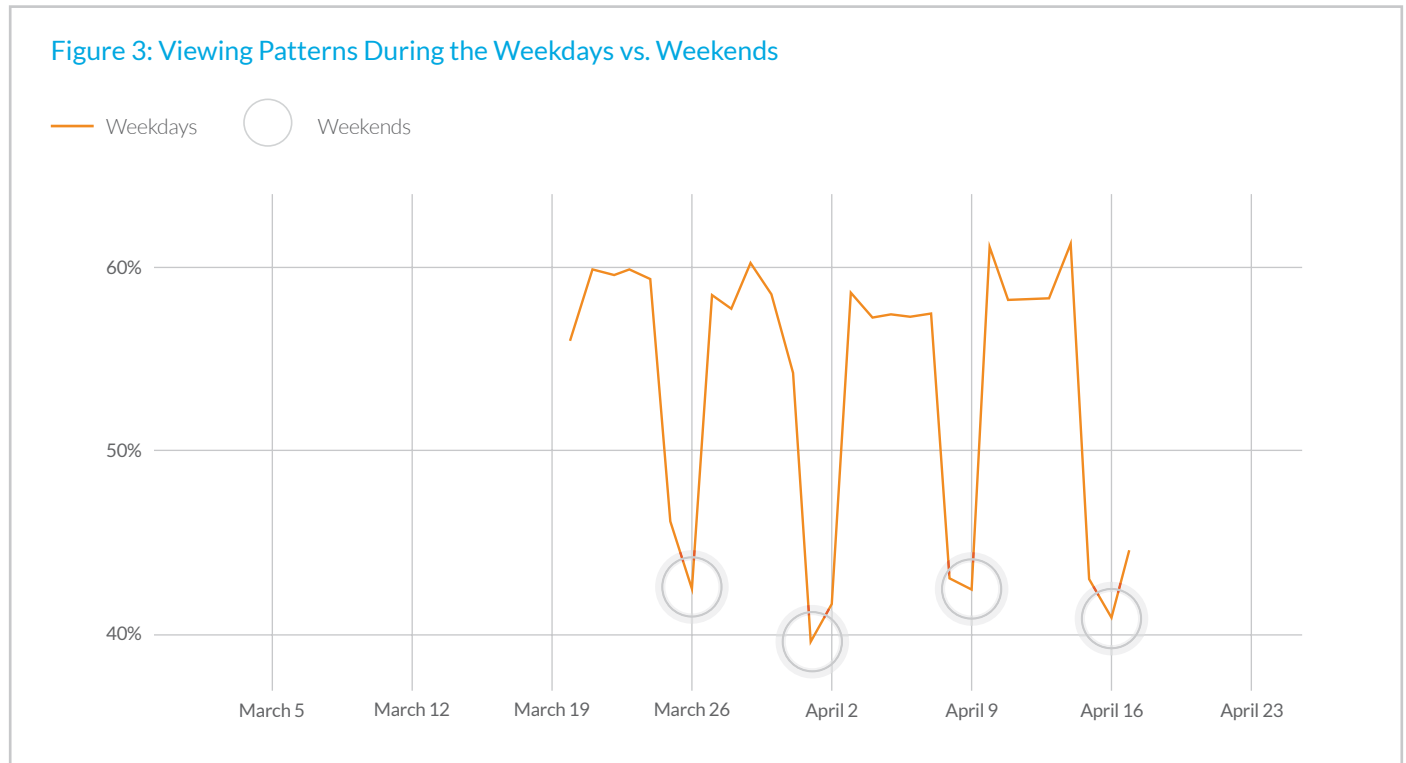
In the end, pay-TV providers now have two goals: (1) broaden viewers' consumption and enjoyment of more content, and (2) get viewers to their content quickly, when they are most inclined to prefer predictive recommendations. In analyzing viewer data from a sample population, TiVo found that 80% of viewing was coming from watching various TV series, which underscores the importance of the second goal. However, no pay-TV provider wants viewers to get stuck in a rut: interest in a TV series can wane, a TV series can be canceled and each sports season will end. Therefore, recommendations that expand viewership should maintain, or even increase, the viewer's interest and engagement, whether for new TV series, movies or other programming. A combination of these two approaches ensures pay-TV providers are showcasing the breadth and variety of their content, which typically dwarfs that of OTT services. When these two goals are achieved, not only are the needs of viewers met, but also the level of viewer engagement increases as subscribers find their current content faster, and discover new and upcoming content more easily.

Addressing Viewer Needs by Creating Next-Gen Pay-TV Interfaces

In order to achieve the previously discussed goals, pay-TV providers must recognize and address the two primary needs of their subscribers when optimizing the viewer experience for content discovery:

1. Instant Discovery: Help a viewer find something interesting to watch right now – as quickly and easily as possible.

2. Future-Proof Discovery: Ensure a viewer does not miss an upcoming TV show he/she would be interested in watching. This type of content discovery ensures viewers are made aware of shows that will be broadcast in the next week, so these viewers can either (a) set their DVR to record the shows or (b) set a reminder to watch the shows.

Using Viewer Needs to Power Content Recommendations

In order to address the two key needs of viewers, through Instant Discovery and Future-Proof Discovery, pay-TV providers must leverage viewer behavioral data to power the following types of personalized recommendations:

1. Recommend programs that the viewer already watches and that the pay-TV provider reliably can predict the viewer would want to watch, for example:

    a. Unwatched episodes of daily or weekly TV series that the viewer watches regularly

    b. The viewer's favorite sports teams or leagues

2. Recommend programs that the viewer does not regularly watch, in order to broaden his/her viewing habits, such as:

    a. Series the viewer has never watched

    b. Movies the viewer has never watched

    c. Live or special events, such as awards shows or presidential debates

From these categories, four distinct content discovery use cases emerge that should be deployed.

	Predictive Recommendations Goal: Get to content you already watch, quickly	**Recommendations to Expand Viewership** Goal: Find new content to watch
Instant Discovery Goal: Find something to watch right now	Watch Now Carousel	New Suggestions Carousel
Future-Proof Discovery Goal: Don't miss upcoming programs that might be of interest	Don't Miss Carousel	Upcoming Carousel

Building the Interface: Carousels Address Viewers' Needs

1. Watch Now Carousel – Viewers can find unwatched, or currently airing programs that interest them.

    a. **TV series the viewer already watches –** For time sensitivity reasons, currently airing episodes that are not being recorded should be emphasized over those episodes that are already set to be recorded, already have been recorded onto the viewer's DVR, or are available via VOD.

    b. **Live sports programs for the viewer's favorite teams or leagues –** This content is also time-sensitive, and typically not already part of a viewer's scheduled recordings.

    c. **Purchased movies (TVOD) –** These typically expire after a relatively short duration; therefore, it is important to give the viewer a chance to watch these movies prior to the expiration date.

2. Don't Miss Carousel – Leveraging predictions, this carousel ensures the viewer knows about upcoming content that he/she previously watched, so that he/she can set the DVR to record the content or create a reminder to watch the content. This content would include:

    a. **TV series the viewer watches,** but is not already recording, when a new episode is airing soon.

    b. **The season premiere of a TV series** that the viewer historically watches, but is not already recording.

    c. **Live sports programs** for the viewer's favorite teams or leagues.

    d. **Pay-per-view events** that the viewer has purchased. Since these programs are extremely time-sensitive and have already been paid for, the viewer does not want to miss them.

3. Upcoming Carousel – This carousel helps to get viewers excited about programs that are upcoming. The programs in the Upcoming carousel are similar to the programs contained in the Don't Miss carousel, except that the content in the Upcoming carousel is based on recommendations that expand viewership rather than predictive recommendations, meaning the content would be items that the viewer has not previously watched.

4. New Suggestions Carousel – Viewers can find something new to watch right now, which allows pay-TV providers to increase the amount of content that a household views, ultimately leading to increased viewer satisfaction. This carousel includes content such as:

    a. **Similar TV series** to those that the viewer currently watches.

    b. **Movies that the viewer would enjoy** based on his/her historical viewing habits.

    c. **Relevant live or special events** being broadcasted.

    d. **Programs which are popular among other households,** but the viewer does not currently watch.

In TiVo's analysis of viewer data, results show that a typical household watches somewhere between 10 and 15 different TV series over the period of a year. Combined with seasonal sports that the household follows, these results suggest that there is plenty of content to easily fill a predictive recommendations carousel for a given household. In addition, throughout the course of a television broadcast season, many new TV series are introduced, and many of these new TV series remain unwatched by a majority of households. Therefore, another recommendations carousel to expand viewership, which includes new TV series, special events, and movies, could interest a viewer at any given time. In sum, it has become clear that a single carousel of 10 items does not represent any meaningful portion of what the full content discovery-focused viewer experience should encompass.

FAVORITE SERIES DISTRIBUTION
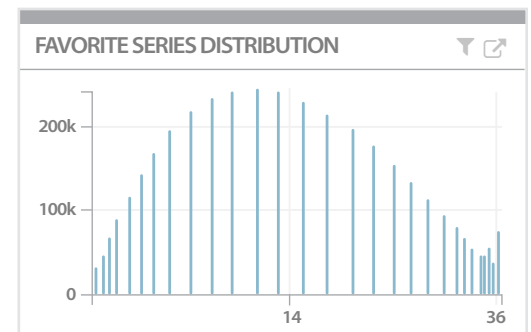
Conclusions

The video industry continues to see a shift in the amount of time consumers watch their traditional pay-TV service, as more content is being viewed on OTT services such as Netflix, Hulu, Amazon and others. Pay-TV providers must focus not only on why consumers are gravitating to these OTT offerings, but also on how these providers can slow and ultimately reverse the trend. Despite having significantly smaller catalogs of content than pay-TV providers, OTT services have been more focused on designing their interfaces to optimize discovery. In order to ease the discovery of content and truly showcase the diversity of their offerings, pay-TV providers need to personalize their product offerings — and surface content in a next-gen user experience, such as carousels, to capture all the methods in which viewers can find compelling content.

Disclaimer: TiVo has found that carousel names greatly affect viewers' sentiments toward the content. The carousel names used in this white paper are sample use cases to show the type of content recommendations pay-TV providers should deliver to their subscribers. It is important to A/B test the use of carousel names to ensure the top performing carousels are released to a subscriber base.

Click here to learn more about TiVo's content discovery platform, Seamless Discovery®, and our analytics platform, Seamless Insight™.

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.