WHITE PAPER

THE VALUE OF VIDEO

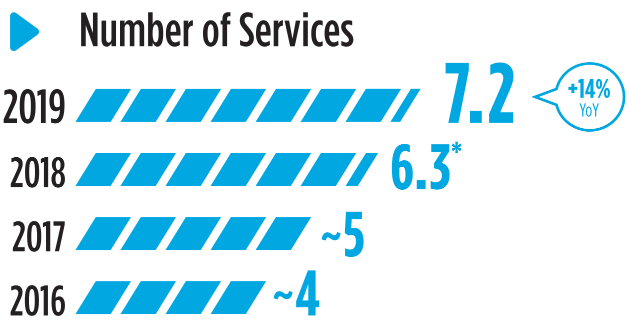
PAY TV'S VALUE IN THE BUNDLE AND HOW TO BOOST ITS CONTRIBUTION

This white paper evaluates three investment scenarios that pay-TV operators can assess for the evolution of their video platform. The paper outlines the value that video can bring to the customer bundle in each scenario to help operators choose a path that makes sense for their business.

WHERE THE MARKET IS TODAY

VIEWER BEHAVIOR IS CHANGING

We can characterize today's TV service market in two words: unprecedented choice. In addition to pay-TV services, consumers can choose from more than 200 subscription video-on-demand (VOD) offerings and an increasing number of ad-supported VOD and linear services online. Little wonder that the average U.S. consumer has access to 7.2 services, up 14 percent from 2018.[i]



Juggling multiple TV services is beginning to take its toll on viewers. Three-quarters say they want universal search, a function that allows viewers to make a single search query across all their TV services. Moreover, two-thirds choose the video service they are going to use based on the ease with which they can find something to watch.[ii]

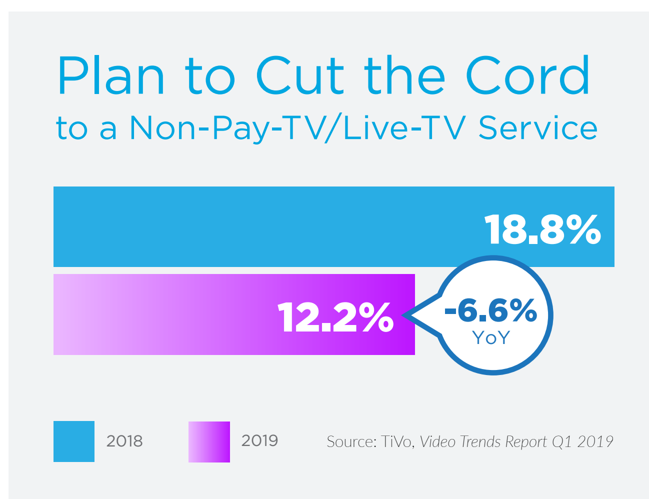
Pay-TV customers, most of whom use streaming VOD (SVOD) services, are also looking for help. 86 percent say they want a single access point for all their video content.[iii] In a sign that consumers are learning to appreciate the simplicity of the big bundle, their interest in à la carte is waning for the first time in years.[1] Between 2017 and 2019, the number saying they wanted the à la carte option took a sharp dip, from 81 percent to 70 percent.

The message is clear. Though consumers like having more choices, they also value simplicity and convenience.

PAY TV REMAINS STRONG BUT FACES CHALLENGES

Despite the massive growth in SVOD services, nearly three-quarters of U.S. homes still have a pay-TV subscription.[iv] What's more, their use of the service far outstrips viewing through SVOD services. The 216 million regular TV viewers watch, on average, 7 billion hours each week. 104 million connected TV users watch seven times less, and 161 million smartphone video viewers watch almost 20 times less.[v]

To be sure, pay TV also faces challenges. Subscriptions to cable, satellite and telco TV services in the U.S. have begun to decline. However, the impact is anything but uniform across the industry. For example, satellite providers lost 857,000 customers (down 3 percent) in the second quarter of 2019,[vi] while cable lost just 455,000 (down 1 percent.)[vii] That said, 80 percent of consumers still have access to pay-TV services, and signs are cord-cutting could be slowing. In 2018, 19 percent of pay-TV customers said they planned to cut the cord, while only 12 percent said the same in 2019.

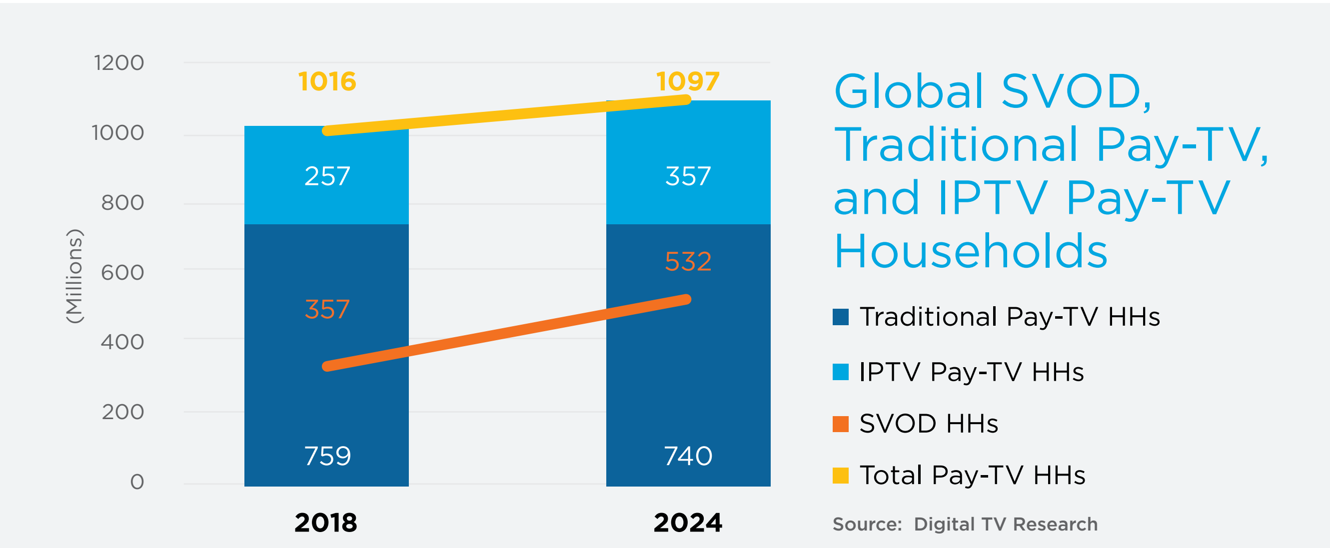


[1] À la carte means a consumer can select the individual channels in his or her pay-TV bundle.

VIDEO SHIFTS TOWARD IPTV DELIVERY

Another major change in the video industry is the shift toward IP delivery. Consider that in 2018 there were 1 billion pay-TV households and 360 million SVOD homes worldwide. By 2024, SVOD households will increase 50 percent to 530 million, while pay-TV homes will grow a scant 8 percent.[viii] Also, IPTV pay-TV platforms, such as vMVPDs, will provide all the growth in the pay-TV sector. They will add 100 million homes by 2024, while the number of traditional cable and satellite homes will decrease by 20 million.

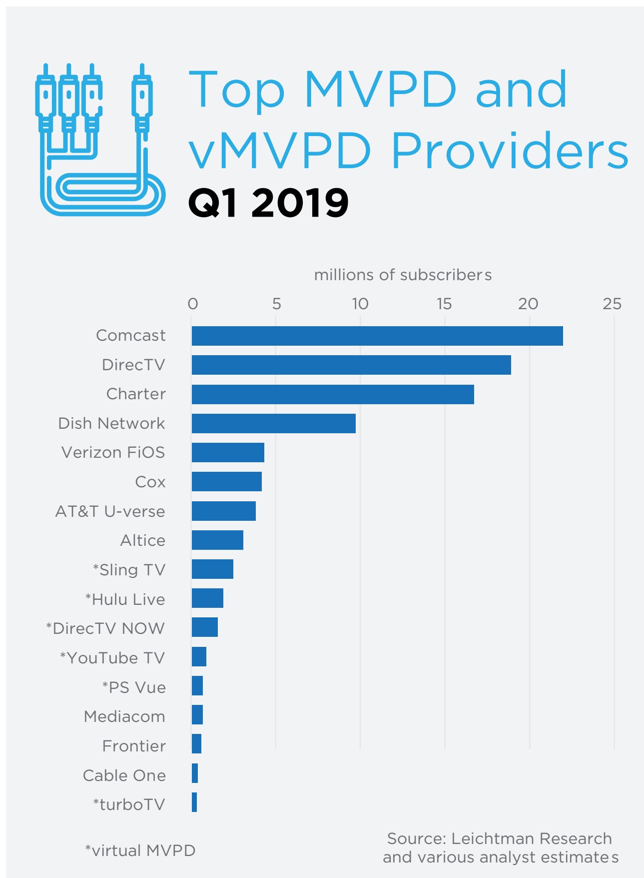
The shift toward IPTV is being driven by factors such as the growth of vMVPDS, operator use of Android TV™, and traditional pay-TV providers embracing bring-your-own-device (BYOD) strategies.



VMVPDS BECOME A SIGNIFICANT FORCE IN PAY-TV

One of the reasons the pay-TV industry is experiencing subscriber loss is because value-driven consumers are looking for cheaper alternatives. The rise of virtual MVPDs (vMVPDs) like YouTube TV and Sling TV gives them that more affordable option. These IPTV services allow consumers to save money while retaining access to some, but not all, of the TV channels they love. They also get built-in portability, another highly desirable feature. Little surprise that vMVPDs are beginning to pose a severe challenge for cable, satellite and telco TV providers.

Today, 8.6 million U.S. pay-TV subscribers are vMVPD customers.[ix] Sling TV is now the ninth-largest pay-TV provider in the U.S., with 2.5 million subscribers. Hulu Live, AT&T TV Now, YouTube TV and PlayStation Vue are the next four largest pay-TV providers in the country.



PAY-TV OPERATORS LEVERAGE ANDROID TV

Many pay-TV operators are looking for options to allow them to combine their physical-based pay-TV solution with IP services at the set-top-box level. Since most of their customers are SVOD users too, they are looking to integrate online TV services into the pay-TV experience. Providing popular SVOD services pre-integrated on the STB enables what many subscribers say they want: a simpler TV experience. It also helps the operator boost the value of the pay-TV subscription.

Increasingly, operators are turning to Android TV devices to facilitate SVOD aggregation. Between 80 and 120 million pay-TV set-top boxes are forecast to be using Android TV by 2022.[x] Operators are turning to the Google operating system because a quarter of them perceive Android TV Operator Tier as providing a significant benefit to set-top box platforms. Just one-fifth of operators say traditional proprietary software solutions do the same, and only one-tenth for RDK.

BRING-YOUR-OWN-DEVICE GATHERS STEAM

The idea of allowing a customer to use a set-top box he or she purchased to receive pay-TV services was once unthinkable. Now, several pay-TV operators enable customers to use a Roku device to control their TV experience. The move reflects the fact that operator benefits, such as not having to install and maintain an STB in the home, outweigh drawbacks like the loss of control of the user experience. In a recent poll of Industry executives, more than half said the benefits of BYOD outweighed the drawbacks.[xii]

OPERATORS KNOW IT IS TIME FOR A CHANGE

The market moves discussed so far indicate permanent changes to the pay-TV business. Service operator executives recognize that, to keep pace with these changes, pay-TV must change too. 85 percent of them believe they must innovate aggressively over the next five years.[xiii]

However, figuring out what investments to make to remain technologically and competitively relevant is difficult.

When weighing the value of video to your organization, start by asking yourself two critical questions:

1. How does video impact my organization today?
2. Why is an investment in video significant to the future of my organization?

To help answer these questions, let's look at what we know about the video business today.

Major Benefits of BYOD

Reduce or eliminate STB cost and maintenance

Leverage rapid innovation in consumer hardware

Access to a wide range of OTT apps

Less likely to rely on call center for support

Major Drawbacks of BYOD

Can't ensure prominence for operator app

QoS is no longer guaranteed

No control of UX

Loss of brand visibility

FOUR PAY-TV MARKET TRUTHS

#1 VIDEO IS VALUABLE

Pay TV generates much revenue for service providers. Last year, consumers spent around $100 billion in pay-TV subscription fees in the U.S.[xiv] That said, it also provides significant value as part of double- and triple-play service bundles. Bundling services increases the length of time a customer stays with an operator, and with it, overall net profit output at the customer level – i.e., customer lifetime value (CLV) – approximately 2.5 times more than single-product customers.[xv]

Double- and triple-play bundles deliver high value to you as an operator, because they provide high value to customers in the form of added quality and convenience. For example, some of the significant benefits bundles offer to customers include:

- The convenience of a single bill
- One provider to call for support
- Unmatched reliability, as pay TV is a managed service
- Cost savings through bundle pricing
- An integrated experience across multiple services

#2: TRADITIONAL PAY-TV VIDEO PLATFORMS ARE EXPENSIVE, INFLEXIBLE

Cable and telco TV video infrastructures are becoming increasingly antiquated and costly to maintain and replace. To change out a single failing set-top box in a customer's home requires:

- A support representative to diagnose the problem over the phone
- A technician to visit the house
- A replacement set-top box

The costs for such an incident can easily be hundreds of dollars.

Additionally, the set-top-box software is often non-standards based. To make even small changes, operators need expensive specialist software engineers and months of development and testing. Add to that, on-premise backend equipment is also non-standards based, making it costly and time-consuming to maintain and replace.

Simply put, although the ability to expand delivery to additional customer-owned devices is becoming more pervasive, traditional cable and telco TV video platforms are too expensive and inflexible to cope with the demands of today's fast-moving video market.

#3 OPERATORS NEED A BETTER VIDEO PLATFORM

To thrive in the new environment for video, you need a next-generation IPTV-based video platform. The solution does not need to replace your existing infrastructure completely. It can, for example, be used only at the set-top-box level in the home. However it is implemented, it needs to bring subscribers the flexibility and speed associated with IP delivery. Only on such a platform can video maintain its positive impact on your business.

An IPTV-based video platform can bring you the following benefits:

1. Maintain, and even enhance, customer lifetime value by introducing operational efficiencies that reduce customer acquisition expense
2. Easily extend video to new platforms, clients and devices
3. Leverage the investment in broadband to support the transition to cloud-based IP video
4. Ease integration of OTT video services into the UX
5. Cable operators can reclaim valuable DOCSIS spectrum, and telco TV operators can push cloud delivery deeper into fiber- and copper-based networks
6. Improve monetization with personalization, dynamic ad insertion (DAI) and ad-performance measurement
7. Present content to users in a compelling and vibrant user interface

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#4: VMVPDS PROVIDE AN ALTERNATIVE TO TRADITIONAL CABLE AND TELCO TV DELIVERY

Like it or not, for an increasingly large group of consumers, vMVPDs are a viable alternative to your pay-TV services. Large parts of the attraction are the low price and flexibility these services offer. Consider that the leading vMVPD, Sling TV, offers an attractive bundle of 30 or so channels, including some of the most popular, for $25 a month. Subscribers can customize their experience by adding $5 a month Xtra Packs, bundles of five to 10 channels in specific genres like sports, news and movies.

Sling TV and other vMVPDs can offer lower pricing for two main reasons:

1. They do not carry the burden of maintaining a network or set-top box in a customer's home.
2. They are prepared to accept much lower profit margins.

Of course, vMVPDs are subject to the never-ending growth in content licensing fees and are much less able to absorb any of these cost increases. In other words, price increases are inevitable. In the first half of 2019, the top four services all increased prices by $5 a month. Some vMVPDs have faced challenges with video quality due to the lack of delivery across a managed network, especially for large, high-profile sporting and TV program events. As operators evaluate introducing a vMVPD-like service, a cloud-based IPTV video platform can provide a key advantage point.

THE WAY AHEAD

So, IPTV is an attractive path to take to create a modern approach to video services. However, before deciding how to use the technology, it's essential to know what you are trying to achieve. To do that, you need some strategic signposts to help establish where your video business is today, and by which to judge potential solutions for the future.

STRATEGIC SIGNPOSTS

The following strategic signposts are designed to help you establish the value of video to your company. They will help measure the contribution, relevance to the market and scalability of your business today, and into the near- and long-term future. The signposts can also help you evaluate future investment scenarios and determine the best strategy to achieve your long-term business goals.

CUSTOMER LIFETIME VALUE

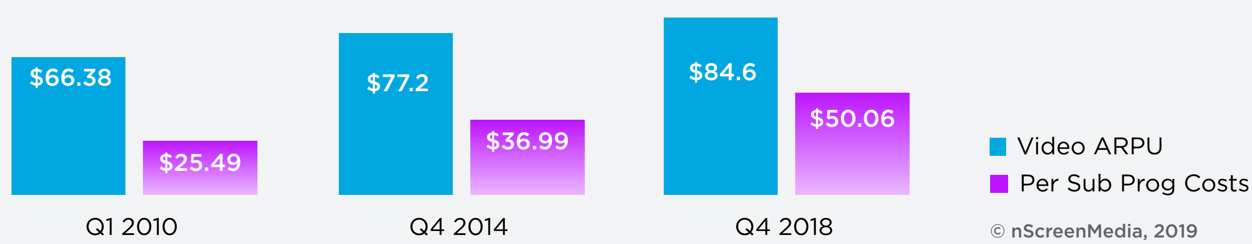
Calculating the value of a video customer over the lifetime of the relationship is a critical component of understanding the overall value of the video business. CLV should not only include the revenue received from the customer, but also encompass:

- Customer acquisition costs
- Customer support costs
- Lifetime expectancy across single-, double- and triple-play bundles
- Churn

CONTENT COSTS AND GROSS MARGIN

Understanding how content costs impact gross margin today and over time are essential in evaluating video business value. Content license fees are the biggest driver of the expenses of a video business. For example, programming costs at a major U.S. pay-TV company were equivalent to 38 percent of video ARPU in 2010. Today, they represent 60 percent of video ARPU.

Video ARPU and Per-Subscriber Programming Costs for a Major U.S. Pay-TV Operator



Signs indicate that content costs will continue to climb faster than inflation. CBS and AT&T recently failed to reach agreement on license fees. CBS stations vanished from DirecTV, DirecTV Now and AT&T U-verse, with the broadcaster warning the blackout could last a long time.[xvi] CBS is now directing viewers to its CBS All Access service to continue watching. Expect disputes between broadcasters and operators to continue and content license fees to increase faster than inflation for the foreseeable future.

CUSTOMER USAGE METRICS

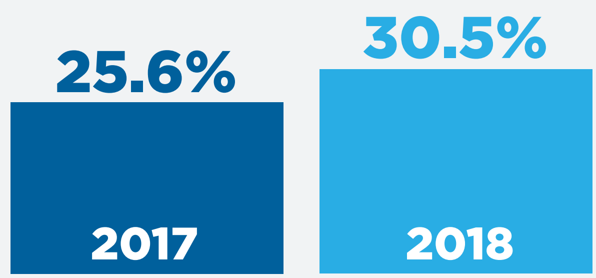
One earmark of the new economy for video is data. Understanding how customers use a service is critical to ensuring it remains a vital part of their entertainment options. For example, popular features such as content recommendations are powered by user data. More than 30 percent of U.S. consumers use recommendations via content carousels in the video guide.[xiii]

However, customer metrics can be used for far more than that. For example, with the right kind of user data, an operator can identify a customer that is at risk of canceling service. A well-timed discount offer or recommendation could remind the customer of the value of the service and keep him or her as a paying customer.

To take advantage of these opportunities, you need a solid understanding of the video adoption and usage behavior of your customers, the quality and quantity of user data available to you, as well as your ability to convert the data into actionable information.

Recommendations Carousel Usage Is on the Rise

More consumers are using pre-made category lists to search. The number of respondents doing so has risen by almost 20 percent since Q4 2017.



PLATFORM EVOLUTION

Traditional pay-TV operator video platforms have allowed services to scale to millions of subscribers. However, we need a new type of scalability for success in today's video market.

As you step up to the challenge of aggregating SVOD, you need a platform that allows easy addition and removal of partner services.

Also, the technological underpinnings of video delivery continue to shift. Examples of continuous evolution include:

- Updates to iOS and Android
- Artificial intelligence and machine learning
- Voice search and control

As new technologies and approaches become available, you must be able to integrate and deploy them quickly. Understanding the strengths and limitations of the existing solution is a necessary first step before looking at alternate options.

OPTIMIZING INVESTMENT

Using the strategic signposts of CLV, content costs and gross margin, and customer usage metrics and platform evolution, you can assess the value of your current video offering to your organization and raise the bar on video's value in general. As you use the signposts to evaluate different investment scenarios, you can better identify the ones that bring the most value in the short- and long-term. They can help you get started along the path that ensures your video service remains not only competitive and relevant to customers but also a potent contributor to the performance of the business.

INVESTMENT SCENARIOS

It is easy to say the way forward for traditional pay-TV operators is IPTV, but it is far less straightforward to see how the transition should occur. There is also the chance that the right approach for you might not work for another operator.

There are many options to consider that may help to improve the performance of your video service. To help you choose the path that makes sense for your business, following are three broad scenarios that highlight the different directions you can take with your video platform. We assess each scenario for its impact on the four strategic signposts described in the previous section.

SCENARIO 1: **VMVPD BUNDLE**

In this scenario, an operator strikes a reseller agreement with a vMVPD and builds service bundles around it – for example, a triple-play bundle of broadband, vMVPD and phone service. Service is delivered to a customer-owned device or off-the-shelf streaming media player, such as Roku or Fire TV. The operator handles billing and customer support, so the customer maintains a unified bill and single point of contact.

Results: Scenario 1 has a mixed impact on our four strategic signposts. CLV is enhanced because the vMVPD helps reinforce the value of the bundle. However, there is a massive loss of video revenue, and you are vulnerable to vMVPD price increases and problems. Gross margin is improved because substantial costs like content licensing fees and capital costs are reduced or eliminated.

The loss of customer video usage metrics means you are going to be less effective at targeting pay-per-view promotions. Finally, you will have a lighter video platform allowing you to leverage off-the-shelf and BYOD options.

SCENARIO 2: **UPDATE THE EXISTING SOLUTION**

For operators that already offer video services, one option is to continue to invest in the current solution. In this scenario, a cable operator maintains its QAM or IPTV service and introduces a customer BYOD companion model combining pay-TV with next-generation delivery and services. Service is delivered in companion mode by the operator to a customer-owned device or off-the-shelf streaming media player, such as iOS/Android mobile devices, Roku or Fire TV.

Results: Updating an existing pay-TV solution maintains the value of your bundle and keeps you on track with current CLV and growth projects. However, you remain vulnerable to overall pay-TV market contraction. Unfortunately, you will also be subject to continued margin erosion and bear potentially massive platform upgrade and subscriber acquisition costs.

Customer usage metrics should improve as you update the platform. However, you will be saddled with higher upgrade costs and slower upgrade cycles than for an IPTV platform.

SCENARIO 3: **CLOUD-BASED IPTV**

In our third scenario, shifting to a cloud-based IPTV system leaves behind legacy pay-TV technology. All the functions of the pay-TV system – including DVR, on demand and the UX – are run from cloud infrastructure. Operators are still able to have service delivered to a managed Android TV set-top box, so as not to lose on that margin contribution. In fact, the customer acquisition assumptions are greatly reduced both in equipment and also installation expense, and the managed nature of the STB still allows for priority of video delivery across the network. This scenario introduces more robust aggregation of OTT content, and can be accompanied by delivery to the same mobile and customer-owned streaming devices such as those mentioned in Scenario 2.

Results: Of the three scenarios, a cloud-based IPTV solution should have the most significant positive impact on CLV. It provides a modern, competitive user experience, maintains the value in the bundle and makes it easier to aggregate SVOD services. The impact on gross margin is not as clean-cut. Switching to the new platform drives increased capital costs in the early years. Additionally, you continue to be vulnerable to increasing content license fees. Lower subscriber acquisition costs and reduced capital expenditure offset the negatives in the long term.

Since you continue to control the customer experience, you will have actionable usage metrics to help upsell other services and content. The shift to cloud-based IPTV enables a flexible, responsive platform allowing you to innovate your service for years to come.

	SCENARIO 1: **VMVPD BUNDLE**	SCENARIO 2: **UPDATE THE EXISTING SOLUTION**	SCENARIO 3: **CLOUD-BASED IPTV**
CUSTOMER LIFETIME VALUE	✔ Maintains churn-busting bundled approach ✖ Operator loses video revenue component ✖ Vulnerable to vMVPD price, problems	✔ Maintains current CLV and growth projections ✔ Maintains current bundle value ✖ Subject to pay-TV market contraction	✔ Modern, competitive UX keeps customers happy ✔ Maintains current bundle value ✔ Easy to aggregate SVOD services
CONTENT COSTS/GROSS MARGIN	✔ Eliminates content costs ✔ CAPEX/OPEX savings as STB, plant costs are cut ✔ Frees QAM bandwidth for high-margin broadband ✖ Potential loss of VOD, STB rental revenue	✖ Margin erosion from increasing content costs ✖ Platform upgrade costs increase ✖ High subscriber acquisition and maintenance costs	✖ Increased CAPEX for CDN upgrades in first three years ✖ Margin erosion from increasing content costs ✔ Dramatically lower subscriber acquisition costs ✔ Reduced CAPEX/OPEX long term
CUSTOMER USAGE METRICS	✖ vMVPD will not share customer usage data ✖ Loss of pay-TV usage data	✔ Maintain ownership of usage data ✔ As the platform evolves, data quality improves	✔ Every aspect of experience can be measured ✔ A complete picture of the customer
PLATFORM EVOLUTION	✔ "Heavy" video platform not required ✔ Leverage off-the-shelf and BYOD devices ✖ Split branding with vMVPD	✖ High upgrade costs for a non-standard platform ✖ Ability to add features slower than for IPTV ✖ Higher maintenance costs	✔ Provides most flexibility/scalability of the three scenarios ✔ Fast upgrades and customization ✔ Fully leverages market shift to IPTV development

FINAL WORDS

Eroding pay-TV margins and customer base are negatively impacting the bottom line for many service operators. They are rethinking their approach in order to maintain and improve customer lifetime value. Despite the negative trajectory of the business, pay TV is too essential to the overall service bundle for operators to contemplate abandoning it. Instead, they must invest in improving the performance of their video service – and determine the investment strategy that makes the most sense for their business.

In this paper, we evaluated three investment scenarios against four strategic signposts: customer lifetime value, content costs and gross margin, customer usage metrics and platform evolution.

Scenario 1, creating a vMVPD bundle, has a mixed impact on our four strategic signposts. It dramatically improves gross margin and provides a stable video platform evolution path. However, there is a loss of customer usage data and negative impact on CLV.

Scenario 2, updating the existing solution, has the potential to improve CLV and provide better customer usage metrics. However, it doesn't offer an answer to gross margin erosion and saddles you with high platform evolution costs.

Scenario 3, moving to cloud-based IPTV, seems to provide the most significant improvement in customer usage metrics and solves the platform evolution problem. It should also improve CLV, though the impact on gross margin is mixed.

Using these strategic signposts, decide for yourself which scenario helps you the most in raising the value of video products for your organization.

Watch for future webinars and white papers, where we will examine unique product offerings enabled by each of the three scenarios covered in this paper. The product examples will help you uncover ways to evolve your video products, so you can keep pace with the market and continue to make a positive contribution to your company's bottom line.

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xiii Proprietary TiVo study of pay-TV operators

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