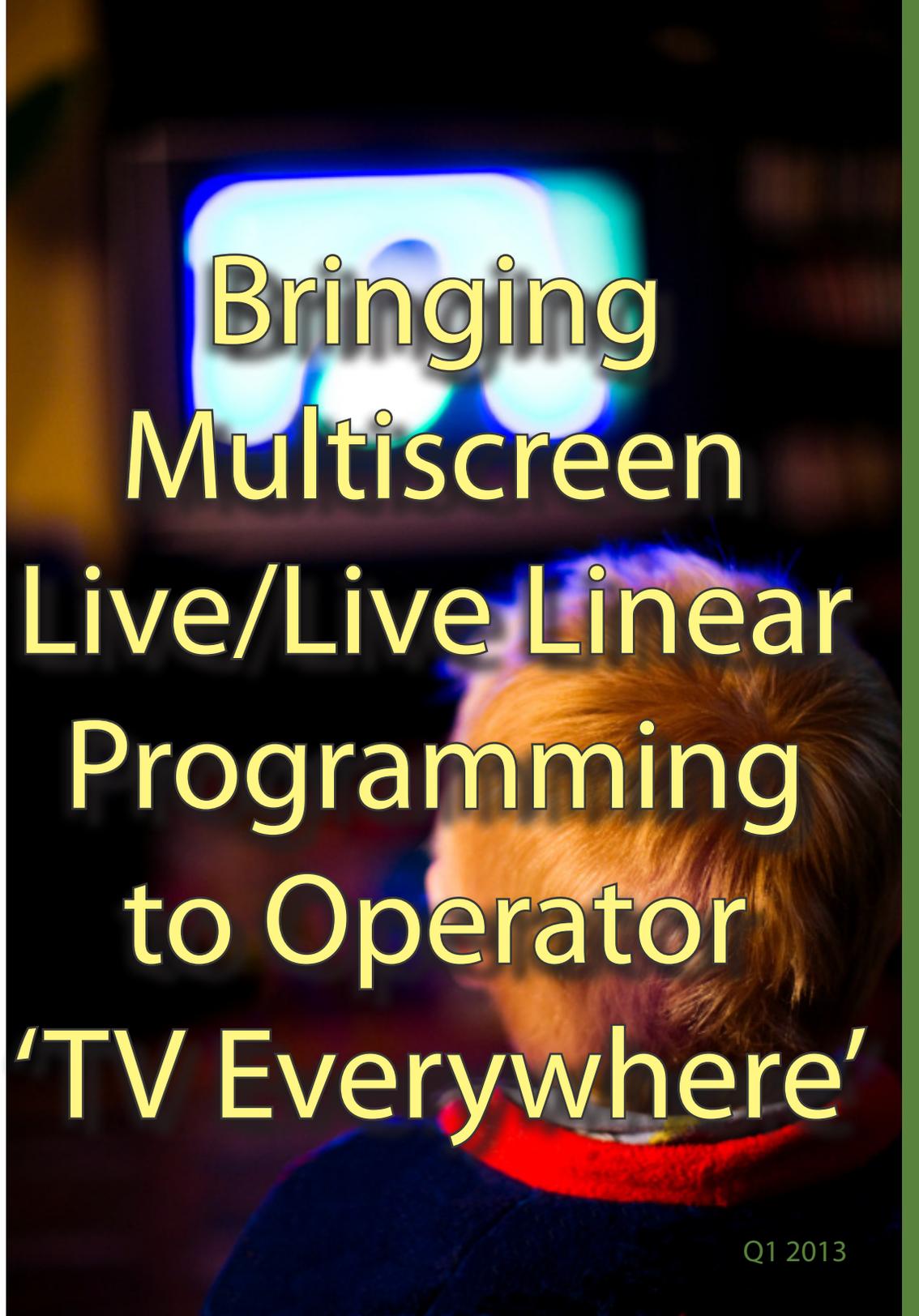


Presented by



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A background image showing the back of a person's head and shoulders, looking towards a television screen. The screen displays a bright blue and white logo, possibly a social media icon. The scene is dimly lit, with the TV screen being the primary light source.

Bringing Multiscreen Live/Live Linear Programming to Operator 'TV Everywhere'

Q1 2013

More than eight in ten adult broadband users (ABUs) now watch online video of some sort, be it short clips or long-form TV shows and movies. This is good news for both OTT (over-the-top) providers as well for integrated MVPDs (Multichannel Video Program Distributors) who are moving into the online space. Online is, after all, the newest beachhead for TV creators, aggregators, and distributors, looking to stake a claim in preparation for a period of swift but sustained growth.

Incumbents have responded—albeit sluggishly—by introducing their own IP-based video services in the form of ‘TV Everywhere’ (TVE), whereby residential subscribers can access many of their favorite TV programs and movies on their net-connected devices.

Unfortunately, today’s TVE services are primarily limited to video on demand (VOD), with little live or linear content offered. True, this in theory matches up well against services like Netflix (an on-demand service), but it is generally viewed as defensive, hardly ahead of the curve and incapable of generating new revenue on its own. Nonetheless, offering IP-based on-demand access was the first step in future-proofing the MVPD service set.

The next step is to add live/live linear TVE access, raising the bar for competitors, both existing (Netflix) and emerging (Microsoft, Intel, Google, and Apple).

Having multi device, on-demand access to one’s favorite TV programs and movies is great, but having live linear access is even better.

There are three primary reasons why now is the time to accelerate live/live linear streaming channels as part of the TVE experience.

1. Live linear access is widely perceived by consumers to have extremely high value, a service they would actually use on a regular basis.
2. Providing live linear service offers the possibility of new revenue and a much stickier service, among other benefits.
3. The technology to distribute and support multiple live linear streaming channels both affordably and reliably is now coming to market.

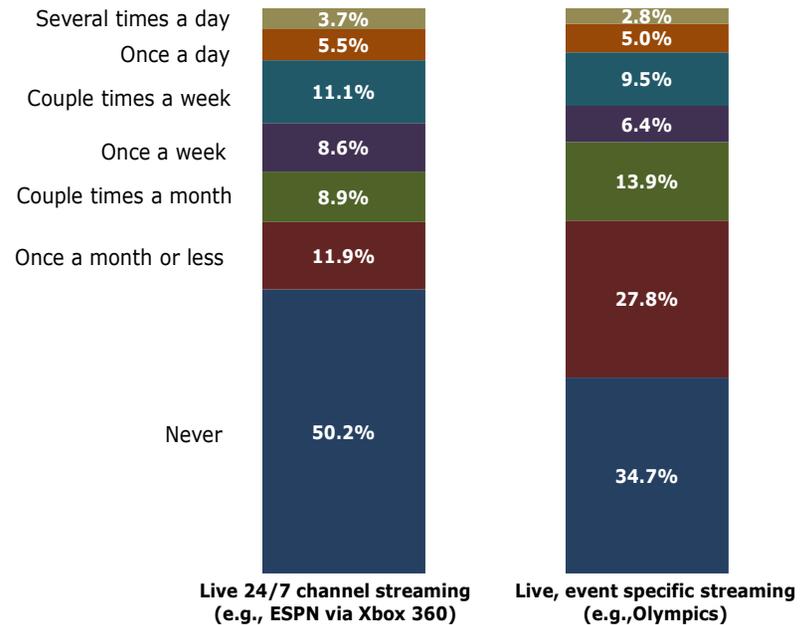
On-demand access has proven valuable to both operators and consumers, but it only scratches the surface of what IP video technologies can today deliver. Offering net-connected consumers anytime/anywhere access to programs best experienced live (especially real-time shows like sports, news, and the hottest TV programs) is an attractive application. But don't just take our word for it.

In January 2013, TDG queried 1,000 US adult online video viewers (ages 18 to 65) as to their use of and perceptions of anywhere/anytime live TV access on all their net-connected devices. The results were overwhelmingly positive.

It was surprising how many consumers are already enjoying live/live linear IP access to TV programming. **Some 50% of online video viewers occasionally watch live linear 24/7 streaming "channels"** like ESPN3 on Xbox 360, and 65% report viewing live one-time events like the Olympics. In other words, viewing live content on the web is nothing new to many online video viewers. One could argue that, beyond just *interest* in live/live linear online

streaming, consumer usage *habits* have quickly evolved to incorporate such content, even with the limited amount of live content that's currently available.

Current Use of Live/Live Linear Streaming
(% of online video viewers, n = 1,015)



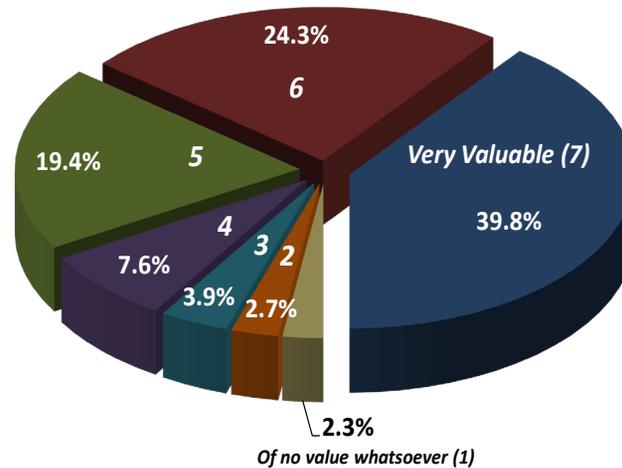
Q12. With these distinctions in mind, how frequently do you view the following types of online video across on any of your net-connected devices, whether your PCs, pads, or smartphones?
(C) 2013 TDG

In terms of online video viewers in general, **64% rate comprehensive access to live TV programming as highly valuable** (“6” or higher on a 7-point scale). Only 9% found the application to be non-valuable (ranking of “3” or lower). This speaks to the universal appeal of anytime/anywhere live access. Because online on-demand has proven so popular with consumers, the burden of proof for live/live linear access has been lightened significantly. People get it – its value is understood, and very strongly so.

It is noteworthy that the value of live/live linear access ranked highly across all age groups, led by 35-44s with 69% rating the application as highly valuable (“6” or higher), consistent with responses from both Millennial segments. The same held for gender, with approximately 65% of both male and female respondents ranking the app as highly valuable. Again, the appeal of this application seems universal.

Value of Live/Live Linear Access to Traditional Pay-TV Services on Net-Connected Devices

(% of ABU pay-TV subscribers, n = 948)



Q5: How valuable would it be if your favorite live TV channels and programs could be viewed on any of your net-connected devices?
(C) 2013 TDG

Regardless of whether they perceive live linear as valuable, would they actually use this type of service? That's the million-dollar question. As illustrated below, the strong value perception will indeed convert to strong use behavior. In fact, **75% of pay-TV subscribers are highly likely ("6" or higher) to use multiscreen live linear if offered by their operator, while 49% "definitely would use" the service** (rating the likelihood at "7").



Likelihood of Using Live/Live Linear Pay-TV Services on Net-Connected Devices



Q16: Now imagine that your pay-TV service included (this type of access). If this offering were part of your regular pay-TV service — at no extra charge — how likely would you be to use it?

(C) 2013 TDG

Aside from significant consumer pull, adding live and live linear programs to TVE offerings is quickly becoming a competitive necessity. Yes, legacy pay-TV providers are finally embracing IP delivery, but today's expression of TVE is primarily on-demand with few live channels. Put another way, today's TVE is a short-term tactic to help minimize the impact of online video services like Netflix (which, by the way, just topped 27 million domestic US subscribers, just a stone's throw from Comcast, the nation's largest MVPD). Add to this development of original content like *House of Cards* and exclusive rights to distribute Disney content during the "pay-TV" window, the competitive threat of OTT becomes more real.

Today's TVE is but a short-term tactic to help minimize the impact of online video services like Netflix.

If thinking strategically (and some are), MVPDs know that they must not only match Netflix, et al, but surpass them; in terms of ease of use, breadth of content, and service reach, all of which are legitimate tactical targets. But adding anytime/anywhere live linear goes beyond the tactical and restructures the rules of the game. While few OTT players have the capacity or relationships to offer live/live linear programming, MVPDs already have virtually all of the pieces in place. They enjoy a relative lock on high-quality TV content; they own the physical infrastructure and many of the content networks; and they enjoy a virtual monopoly in their respective territories. Exploiting these advantages and adding live/live linear TVE access is much more than a tactical win; it's a long-term strategic difference.

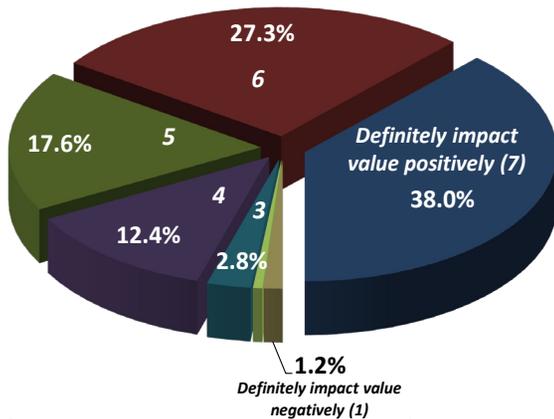


1. Enhanced Operator Value Perception

MVPDs, in general, (and cable operators in particular) unfortunately do not enjoy the highest of consumer ratings, so any effort that can help improve that perception is certainly a worthy investment. As noted below, most pay-TV subscribers believe that having reliable live/live linear access to their favorite TV channels and shows would improve the perceived value of their pay-TV service – a tough-to-come-by benefit for operators.

Impact of Live/Live Linear TVE on Value Perception of Pay-TV Operator

(% of ABU pay-TV subscribers, n = 948)



Q7: What if your current pay-TV service DID provide you anywhere/anytime/any device access to your favorite live TV programs? What impact would this have on how you perceive the value of your current pay-TV service?

(C) 2013 TDG

2. Enhance the Value of Pay-TV Services

According to TDG research, 22% of pay-TV subscribers currently engage a TVE service provided by a traditional pay-TV operator occasionally. This is respectable uptake for a new, advanced video service, but it can hardly be framed as a smashing success.

Why has uptake been so poor? For one, the offerings are primarily limited to on-demand content. Second, the shows offered have been limited in scope and rarely feature live/live linear feeds of high-demand content. This means that operators are generating little in the way of advertising dollars against the new carriage enhancements for which they are paying.

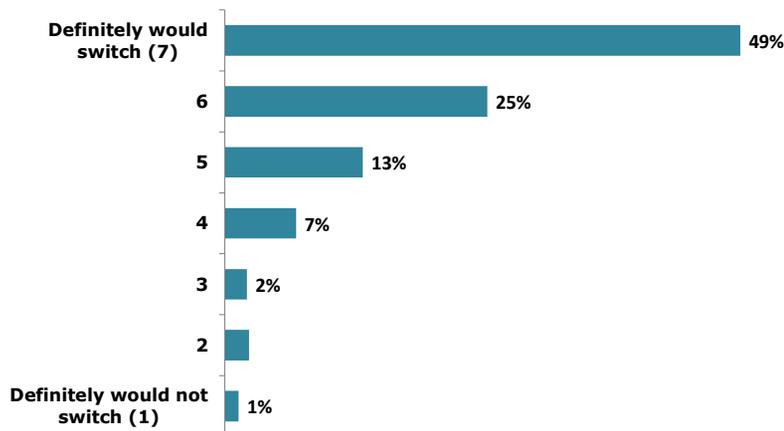
The challenge, then, is encouraging more consumers to use their TVE services, and to do so frequently. Adding live linear access will help in that regard, significantly so, which will in turn help drive advertisers to the medium and enhanced CPMs.

3. Increased Retention/Decreased Churn

Offering a live linear TVE service is also uniquely capable of helping resurrect some of those consumers that may have cancelled their service in the last few years.

Impact of Live/Live Linear TVE on Switching Proclivities

(% of ABU pay-TV subscribers, n = 948)



Q17. Assume your current pay-TV operator provided on-demand access to some TV content but did not offer live access to your favorite channels, shows, or sports content on all your net-connected devices. There is, however, another reputable operator that provides the whole package....Assuming costs were equal, how likely would you be to switch from your current operator to the one that offered the full package of online content options?

(C) 2013 TDG

When asked whether they would sign up for a pay-TV service that included anytime/anywhere live linear access, 30% of Pay-TV Refugees (those currently doing without a pay-TV subscription) responded positively. In other words, adding live linear to the TVE mix enhances the service value such that a third of Cord Cutters and Cord Nevers would consider signing up for a pay-TV service. How many new MVPD applications can make that claim?

As well, the availability of live linear TVE can both lower switching proclivities among existing subscribers, and encourage subscribers to other services to change providers. In fact, **close to half of current pay-TV subscribers said they “definitely would switch their service” if a competitor offered true live linear TVE as part of their service mix.**

4. Generating Additional Revenue

To date, MVPDs have cast TVE as a revenue neutral value addition—that is, a great way to improve the value of the core subscription service without having to increase cost of service. No doubt such strategies will be increasingly needed as traditional pay-TV costs continue to accelerate.

(% of pay-TV subscribers, n = 948)	\$5/month	\$8/month	\$10/month
Likely to sign up ("5" or greater)	60.8%	50.3%	50.3%
Highly likely to sign up ("6" or greater)	38.6%	29.4%	30.4%
Definitely will sign up ("7")	18.4%	12.0%	12.0%

While many on-demand services may invoke expectations of free video, live linear is quite another subject. As highlighted above, a significant number of pay-TV subscribers are willing to spend a few extra dollars per month in order to get multiscreen anywhere/anytime live linear access to their favorite TV channels and shows.

TDG asked pay-TV subscribers how likely they would be to sign up for a live/live linear TV service that fed all of their net-connected devices at three randomly assigned price points: specifically, either \$5, \$8, or \$10 per month above the cost of their broadband or pay-TV service. In other words, it was positioned as a value-added service requiring an additional fee and fees were randomly assigned (meaning no respondent answered the question at more than one price point).

Approximately **61% of pay-TV subscribers are to varying degrees interested in signing up for live/live linear TV service for an additional \$5 per month.** Total interest declines to 50% at \$8/month and holds steady at \$10/month (suggesting lack of price sensitivity/strong price support between \$8 and \$10 extra).

When we move to those highly likely to sign up for such a service (those answering “6” or higher), demand at \$5 drops to 39% but holds about equal at 30% for an extra \$8 or \$10 per month. Most telling, **18% of pay-TV subscribers would definitely pay an extra \$5 per month for such access (answering “7” on a 7-point scale), compared to 12% at \$8 or \$10 extra per month.** for the service.



So let’s assume that MVPDs charged an extra \$8 per month and only 12% of pay-TV subscribers signed on to the new live/live linear TV service (we would expect many more to do so, but let’s be conservative). How much additional revenue might this generate? Comcast has 22 million pay-TV subscribers as of year-end 2012, so at 12% uptake that’s 2.64 million subscribers who would spend an extra \$8 per month. Translation: **\$21.1 million per month or \$253 million in new revenue per year.**

In addition to subscription fees, live/live linear TV has the potential to generate significant advertising revenue. Keep in mind that, while still in its infancy, digital ad monetization is growing quickly. The average CPM for live streaming content is higher than for VOD due to greater value of premium live content accelerated by big multiscreen audiences, especially for live sporting events like the Super Bowl. In 2012, NBC saw \$2 million in digital ad revenue. In 2013, CBS was able to increase that to \$12 million. The potential is present; it is just a question of which operator leads the pack to these new digital dollars.

So why haven't MVPDs and other distributors launched multiscreen live linear streaming channels? To date, the cost and complexity of live linear streaming has been prohibitive with a number of technological hurdles to address in an end-to-end live linear workflow. This issues are discussed below.

1. Challenge: Expensive, Dedicated Hardware Infrastructure

Employing past live/live linear solutions has required that MVPDs make a significant capital investment to purchase expensive, dedicated, hardware-based infrastructure to acquire, process, and deliver live streams. To date, the proposition has proven untenable for many reasons, chief among them that the required hardware is in short order outdated and outgrown as consumer device preferences, formats, and profiles change and consumer **demand grows**.

2. Challenge: Scalability

Delivering one or a few channels of live streaming is already occurring, but with current solutions in place, it has not been possible to deliver the hundreds or thousands of channels that major MVPDs currently offer to their subscribers. Expensive hardware is one hurdle, but the greater challenge is simply processing a high volume of video in high quality, plus scaling security, monetization, and metadata compliance, all critical elements of the live linear workflow and model.

3. Challenge: Reliability

Last but certainly not least is the challenge of solution reliability. In order to meet consumer Quality of Service (QoS) expectations, MVPDs delivering a live linear TVE service will need to manage and monitor these streaming channels in real time and promise a high level of reliability. Today's live streaming takes a team of experts to test, monitor, and manage issues as they arise, and that's not even in a 24x7 mode that's required for live linear channels.

Recent innovations in live linear video workflow solutions are catching up to the opportunity and addressing these challenges. Leading the pack, iStreamPlanet has announced a new live streaming video workflow solution called **Aventus** that is designed to deploy large-scale, live linear, multi-channel TVE offerings both quickly and reliably. In fact, iStreamPlanet is currently powering live linear multi-screen streaming of the Pac 12 Network, which made news last year when it became the first network to simultaneously launch a live linear TVE service at the same time as its traditional broadcast channels.

Aventus is one of the first cloud-based live video workflow solutions to enter the market and promises big cost savings versus today's hardware encoder-based infrastructure. Aventus runs on commodity x86 hardware using virtual machines (VMs) to handle the various tasks of acquiring, processing, and publishing live linear streaming channels.



In addition to significant cost savings, Aventus arms MVPDs with entirely new levels of telemetry and insight into the entire live video workflow—from source acquisition to publishing—providing distributors with the ability to create, configure, manage, and monitor multiple live linear channels from within one platform—and all in real time.

Aventus also provides automated error detection and notification throughout its workflow, as well as full redundancy and automated recovery in rare cases of catastrophic software or hardware failure. These features help distributors maintain a higher QOS and overall reliability, delivering a broadcast-like quality experience to viewers regardless of the device they're using.

The next few years present a pivotal moment for MVPDs.

As this paper has demonstrated, demand for anytime/anywhere live linear access is now a legitimate, tangible phenomenon, a service that consumers desire and for which they will pay. This is due in large part to the widespread awareness and use of online on-demand services.

Consequently, a new multi-screen TV paradigm is streaming across the consumer market, meaning the rules of the game are changing. According to this new worldview, consumers expect and will soon demand the same level of live access they enjoy on their TV across all of their video-enabled devices.

Despite the fact that consumer demand is clearly articulated—and despite the overwhelming advantages that incumbents enjoy—MVPDs have been slow to move on live linear TVE. Cost, scalability, and reliability are key in justifying this reluctance.

Today, however, cost-effective solutions from companies like iStreamPlanet address these challenges, meaning it's now a question of whether incumbent MVPDs will move first or new media market movers (Netflix) or mega-corps like Microsoft,

Intel, and Apple step in to exploit this opportunity. This is indeed an open question.

In TDG's opinion, MVPDs should move first, in particular because of their unique relationships with content creators and their expanding distribution rights. As well, MVPDs will enjoy one or two benefit spheres: new revenue from value-added payments and from additional advertising. Even if an MVPD decides to forgo charging for live linear service, this logic will be handy when consumers are told their annual costs just went up 10% (which is inevitable given recent retrans results).

For MVPDs, live/live linear TVE provides precisely the mechanism needed to both (a) help rationalize increased pay-TV prices, and (b) generate new (high margin) revenue in difficult times (via new subs, value-added spending, and additional ad revenue). As well, live/live linear TVE helps reduce churn, bring Pay-TV Refugees back into play, or keep would-be service switchers from jumping ship.

Virtually any way an MVPD may look at the live/live linear proposition, the outcome is positive. Translation: if you're an MVPD, it is time to get serious about offering live/live linear TVE.

Presented by



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