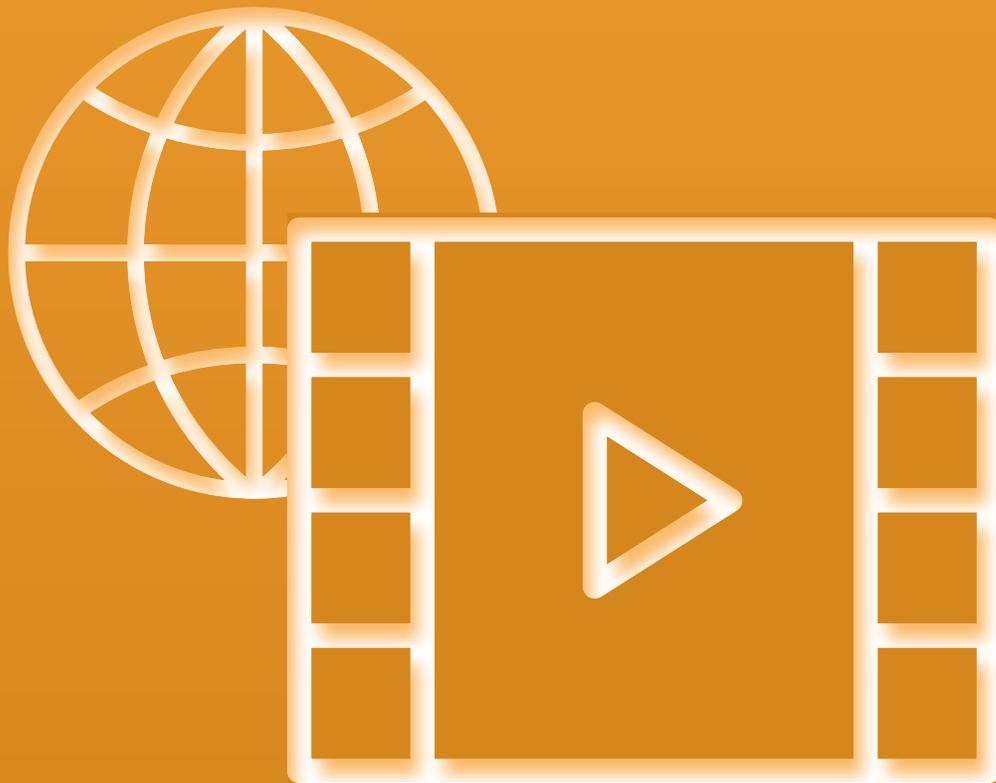


# Scale My Service: OTT Video Providers Closing in on the TV Benchmark

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## EXECUTIVE SUMMARY

For online video service providers (OVSPs), the emphasis has moved away from SVOD services toward live and linear services. Sixty-three percent of the OVSPs we spoke with have live and linear channels as a significant part of their offering.

In the US, advertising is the primary revenue source for services. In the UK, most of the survey participants were from free service providers, like public broadcasters. Pay-per-view and electronic sales are unpopular monetization models on both sides of the Atlantic.

In a clear sign of market maturity, the percentage of US OVSPs that have set key performance indicator goals for their service has increased from 45 percent in 2017 to 65 percent in our latest survey. Over half of UK OVSPs also have KPIs in place. They are setting performance goals in the areas of video resolution, video performance, service uptime, and consumer experience.

Seventy percent feel their service is meeting or exceeding at least some of their KPIs, with 20 percent meeting all of them. Two-thirds of US operators say it's relatively easy to set realistic KPI targets. Operators in the UK are more circumspect: 39 percent find it easy to set KPI targets.

No matter how OVSPs think they're doing against their KPIs today, they are optimistic for the future. Fifty-five percent believe the quality and reliability of their online service already meet or exceed the quality and reliability of traditional television or will do so within the next six months.

A third of OVSPs put their complete faith in their ops teams to monitor the performance of their service. A quarter completely trust their video platform provider to monitor their service. Only 23 percent recognize that monitoring is the joint responsibility of the ops team and the video platform provider.

Nearly half of service managers have an online dashboard that they use to monitor the performance of their service. A third get a regular report emailed to them.

Social media is a critical tool in the monitoring of service performance. Over two-thirds of OVSPs monitor social media at least daily, and a third monitor social sites continuously. Such crowdsourcing of service management is a risky strategy.

Three-quarters of survey participants say start-up time is one of the most important quality parameters, ranking it eight or above on a 10-point scale. The following quality parameters are also critical for participants: buffering (70%), live latency (66%), and bitrate (58%).

Many among our survey group have services that scale to deliver to extremely large audiences. Twenty-four percent of UK respondents and 21 percent of US respondents expect a million or more concurrent users. The US sample included a larger group of smaller services, with 41 percent expecting fewer than 10,000 concurrent users.

Although three-quarters of the respondents say that streaming accounts for 10 percent or less of service costs, nine out of 10 say it's very important to minimize streaming costs. When it comes to paying for the streaming costs, most OVSPs prefer to pay for the bandwidth they use rather than paying on some other basis (for example assets under management.)

## ABOUT THE DATA

To better understand how corporations with media assets are planning to deliver them to end consumers, nScreenMedia partnered with *TV Technology* and *Broadcasting & Cable*, two NewBay Media brands, to field a survey to over 300 company managers with responsibility for the technical implementation of video streaming services. Though all of the respondents are based in the US, 257 work for US companies and 93 are employed by UK companies.. The respondents were drawn from the following groups:

- Broadcast television stations, station groups, or networks (e.g., NBCU, KPBS, Sinclair, BBC)
- Pay television operations/MSOs/MVPDs (e.g., Dish Network, Charter, SureWest, Virgin Media)
- Programmers: syndicators, studios, other license holders (e.g., Syfy Network, Endermol, MGM)
- TV services: producers, distributors, talent, television rep firms or other providers (e.g., Adrenaline Films, BBC Worldwide, Katz Television Group)
- New media: digital, Internet, or interactive companies (e.g., Netflix, Sling TV, AwesomenessTV)
- Other companies with video assets to be delivered to consumers (e.g., American Express, Procter & Gamble).

Survey respondents were all based in the United States and drawn from the following disciplines:

- Corporate management
- Engineering/IT management
- Programming management.

For ease of reading, this report will refer to all survey respondents as OTT video service providers (OVSPs). It will also refer to broadcast TV stations and groups, pay TV providers, and programming and services companies as traditional TV companies.

The report will primarily discuss the survey results for US companies, except where the results for UK companies differ significantly. In this case, the report will highlight and discuss the UK results separately.

## WHAT WE LOOKED AT AND WHY

The objective of the survey was to better understand how companies with a streaming consumer video service are managing the quality of that service. The survey covered the following topics:

- The type and quantity of video delivered
- How the video service is monetized and any other ways it contributes to the company's goals
- The key performance indicators selected to measure performance
- Ability to measure performance
- How the service will scale
- The economics around service scale

# THE DATA

## THE LIVE AND LINEAR PART OF MOST SERVICES

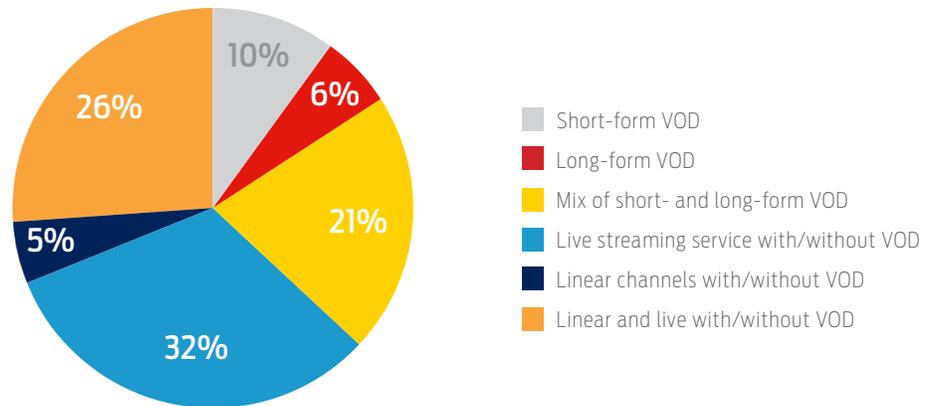
There are more than 200 subscription video on demand (SVOD) services available in the US.<sup>i</sup> Our survey group, however, shows the emphasis has shifted to live and linear channels in online video services. Sixty-three percent of the OTT video service providers (OVSPs) we spoke with have live and linear channels as a significant part of their offering.

Long-form video services dominate the current SVOD market. However, they comprise a small part—just six percent, of our survey group. Most of the on-demand services our group of OVSPs offers—31 percent—comprise short-form video and a mix of program lengths.

Consumers continue to migrate viewing from traditional ad-supported television channels to ad-free SVOD services, particularly during prime time. The trend has advertisers concerned that they

Figure 1

Type of video service



are losing the ability to reach many consumers with their branded messages. They should take heart from the results of our survey.

Fifty-six percent of US survey respondents say that advertising is the main way they receive value from their service. Subscription remains a popular option, with a third of respondents taking advantage of the approach. A quarter of OVSPs say there is no direct monetization of the service at all. Only a few OVSPs are using pay-per-view (15%) and electronic sales (16%).

In the UK, the monetization profile is considerably different. Most of the OVSPs take no direct monetization from their online services, reflecting the dominance of public sector broadcasting, and the BBC, in the country. Subscriptions (43%) remain a very popular option. Advertising is the third most popular monetization mechanism (41%). Pay-per-view is also a much more popular option in the UK than in the US, with a quarter of OVSPs using it.

Figure 2

How technology improves education

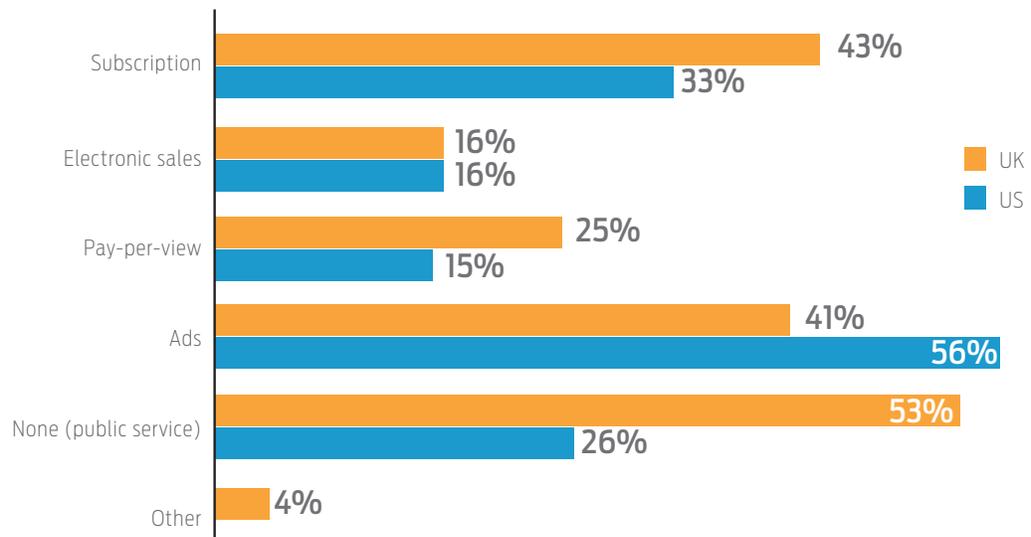
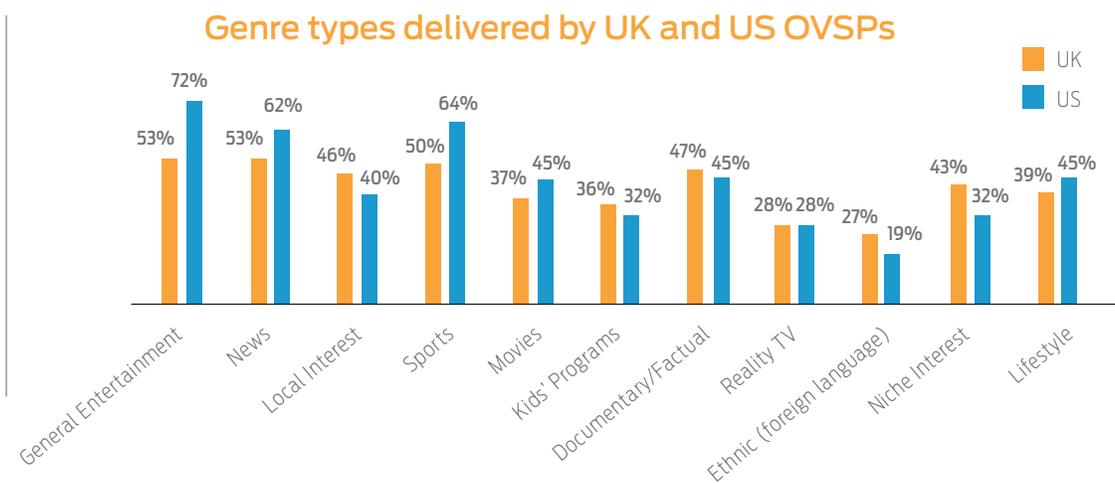


Figure 3



Both in the UK and the US, the most popular genres delivered by services are general entertainment, sports, and news. The least popular are ethnic (foreign language) and reality TV.

The emergence of sports as a leading genre of online video services is relatively recent. There are two primary reasons for this:

1. Many professional sports licenses have been locked up in long, exclusive television deals.
2. Until recently, delivering live sports with quality and at scale has been very hard.

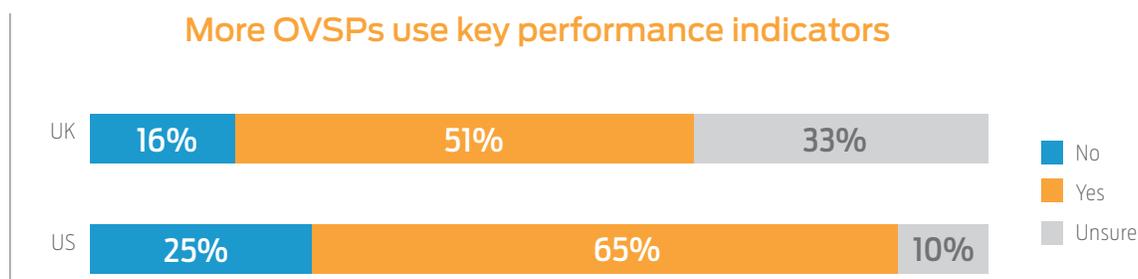
Professional sports leagues are beginning to take online delivery seriously and are licensing games to some online providers. For example, for the last two seasons the NFL has licensed Thursday Night Football to online providers—to Twitter (in 2016–17) and Amazon (2017–18).

Providers are also far more confident in the ability of the Internet to support a great experience. For example, Super Bowl LII was watched live by an estimated four million viewers.<sup>ii</sup> The growing confidence in online services to deliver a great live sports experience was summed up recently by Adam Ware, SVP, head of digital media and new business development at Tennis Channel: “The largest growth in streaming is on connected TVs and devices. It’s not only the largest growth, it has quickly become the dominant streaming platform by time viewed. So, by that definition alone, streaming sports is TV ready, because fans are watching it . . . on their TVs.”<sup>iii</sup>

## SETTING SERVICE PERFORMANCE GOALS

In our report *Alive Online: OTT Service Providers and Live Streaming Services*, released in 2017, we found that just 45 percent of US OVSPs had key performance indicators (KPIs) in place.<sup>iv</sup> After almost a year, our survey group shows a dramatic increase in the adoption of KPIs. Sixty-five percent say they have them in place, 25 percent say they do not, and 10 percent are unsure.

Figure 4



The UK is well behind the US in the use of KPIs. Half say they have set them, 16 percent say they have not. Fully a third are unsure if their company has set KPIs for their video service.

The KPIs that have been set by OVSPs, both in the UK and in the US, cover all the most important parameters of service performance. Approximately 60 percent have set KPI goals in the following areas:

- Video resolution (HD, UHD, etc.)
- Video performance (buffer rate, start-up time)
- Service uptime (availability)
- Consumer experience (engagement time, churn).

Seven out of 10 respondents feel their service is meeting or exceeding at least some of the KPI goals, and two in five think they're meeting or exceeding all the goals. Sixteen percent feel they're not meeting many or any of their goals.

When it comes to setting specific targets or limits by which to judge the KPIs, the UK and US OVSPs diverge in terms of how difficult they find this. Broadly speaking, US respondents appear more confident in their ability to pick targets and quality limits that enable them to manage the experience of their service. Two-thirds of the US survey respondents feel it is easy or somewhat easy to do so. Only 39 percent feel the same way in the UK. Conversely, a quarter of UK respondents say they either can't set realistic targets or find it very difficult to do so. Only 14 percent of US respondents say the same.

Figure 5

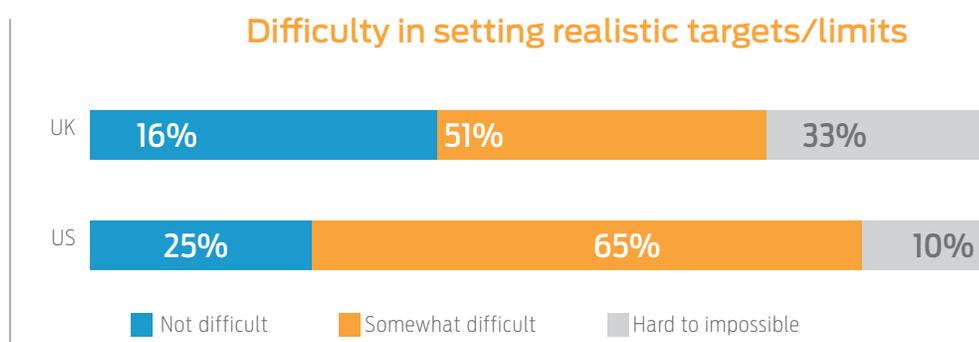
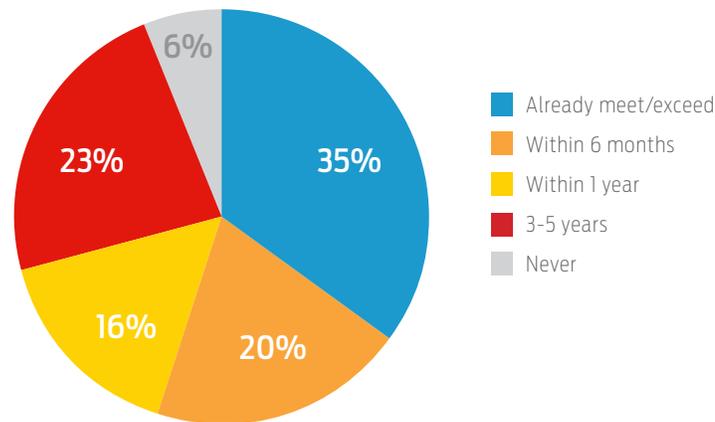


Figure 6

## When online delivery will meet or exceed TV reliability/quality



Regardless of how our survey participants think they're doing against their KPIs today, they're very optimistic about the future. Fifty-five percent believe the quality and reliability of their online service already meet or exceed the quality and reliability of traditional television or will do so within the next six months. Just 23 percent think it will take longer than three years, and only six percent believe it will never match traditional television.

It's a remarkable, though perhaps not unexpected, finding that so many feel television quality is achievable. The switch in focus from SVOD services to linear and live streaming illustrates growing confidence in the ability of online video platforms to handle the rigors of real-time video delivery. Similarly, consumer confidence in the ability of the Web to deliver a television experience is growing. According to estimates, the number of people subscribing to virtual MVPDs like Sling TV, DirecTV Now, and YouTube TV increased by 2.6 million, to 4.6 million, in 2017.<sup>v</sup> During the same period, the top six cable, telecoTV, and satellite pay TV companies lost 2.8 million subscribers.

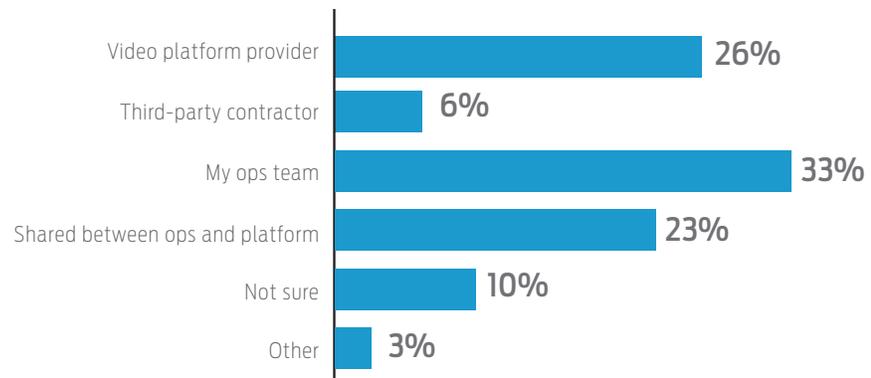
## MEASURING PERFORMANCE

Monitoring the health of a video service can be complicated. In addition, regardless of the size of an OVSP, it does not have complete control of the network that's delivering its service. That means that help from video platform providers, CDNs, and even ISPs is required if the OVSP is to be able to measure the performance of its service.

As in previous years, most OVSPs look first to their own ops teams to do all the tracking of service parameters. A quarter of respondents, up from 18 percent in the previous survey, leave all the monitoring to their video platform provider. Twenty-three percent recognize that the management of their service is the responsibility of both the video platform provider and the ops team. As we found in the previous *Alive Online* survey, few OVSPs hire a third party to manage their service.

Figure 7

## Who is responsible for tracking service performance?



Leaving all the service monitoring to the video platform provider is a risky strategy, since it's like asking the fox to guard the henhouse. More than half of the OVSPs recognize that they must have some in-house technical team to monitor the performance of the service. Maintaining in-house technical expertise is a wise course of action. John Martin, the CEO of Turner, is very clear that this is a necessary course of action for premium video providers:

"We are going to need to be able to control the end-to-end technology experience."<sup>vi</sup> Without the ability to monitor and manage the service, control is simply impossible.

Three in five OVSPs are happy with their ability to monitor the performance of their video service. Forty-six percent keep tabs on performance through an online dashboard that shows them key measurements. One third receive a daily, weekly, or monthly report. Two in five request a status update from their CDN or monitoring team whenever they need a status update. Twelve percent have an app on their PC or mobile device, which they check regularly.

There is one other monitoring tool that our survey participants plan to put to good use: social media. A third of OVSPs say they monitor social media continuously for complaints. Over two-thirds monitor social media at least daily. OVSPs are wise to keep a close eye on social media. Not only will it help them spot service problems early on, but it will also help them keep the service's reputation for quality as untarnished as possible.

Figure 8

## How OVSPs track service performance

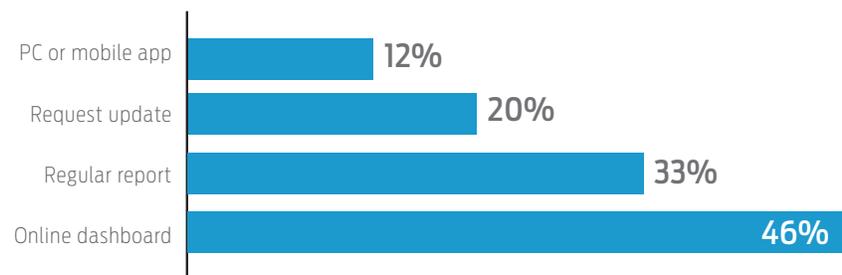
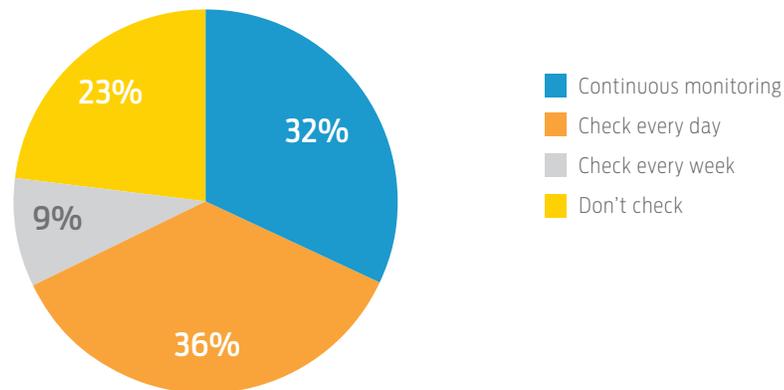


Figure 9

## Frequency of monitoring social media for service problems



However, using social media to crowdsource service monitoring is a risky strategy. It's better for an operator to find out about and fix problems before users experienced them and share them on social media.

Maintaining video quality is of paramount importance if OVSPs are to measure up to TV-quality metrics. We asked our survey group which parameters are the most important to them.

**Start-up time rates are most important quality parameter**

Start-up time, the length of time between when a viewer selects “play” and the video starts, is rated as the most important parameter by our survey group. Interestingly, in the 2017 survey, it was the fourth most important parameter. Three-quarters of respondents scored start-up time as eight or higher (on a 10-point scale) in importance. Fifty-seven percent rated it at eight or higher in the 2017 survey.

Start-up time is a very important parameter for OVSPs. The average video start-up time in 2017 was 4.84 seconds.<sup>vii</sup> However, the longest start-up time was 6.82 seconds. A two-second increase in start-up time can result in as much as 50 percent of the audience giving up on playing the video altogether.

Figure 10

## Importance of various quality parameters to OVSPs



### ***Rebuffering slips behind start-up time in importance***

Rebuffering rate measures the percentage of video streams that were impacted by a rebuffering event. The number of rebuffering events per play tells an OVSP how many times, on average, a video play was interrupted by a rebuffering event. Both parameters are important for understanding the impact on quality. For example, an OVSP specializing in live video might have a very low rebuffering rate, but high rebuffering events per play. In other words, few streams are impacted by rebuffering, but when it happens, there are frequent interruptions in the viewing session. Viewers probably won't put up with this situation if they're affected.

In our 2017 "Alive Online" report, survey respondents thought that rebuffering rate was more important than the number of rebuffering events per play. Seventy-seven percent scored rebuffering rate as very important (a score of 8 or above on a 10-point scale). Sixty-eight percent were most concerned about rebufferers per play.

In 2018, our survey group rated both rebufferers per play and rebuffering rate as equally important. Rebuffering is the second most important parameter OVSPs monitor.

### ***Live latency is the third most important parameter***

Live latency is simply the delay of the live stream behind the actual event. Of course, all live video is delivered a little behind the actual event. However, if most of the audience is watching an event like the Super Bowl on television, those watching streamed content online are acutely aware of how far behind TV they are.

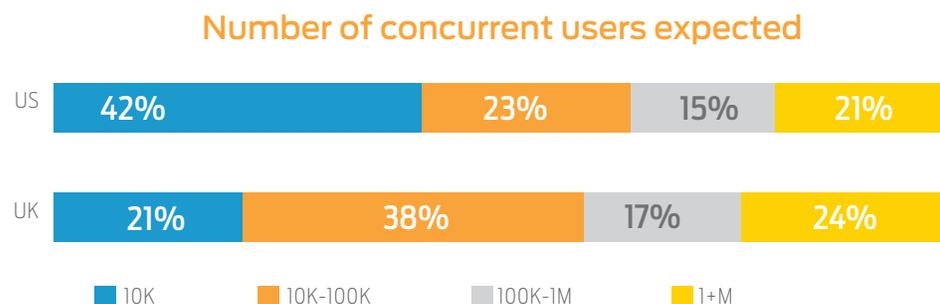
For example, in Super Bowl LII, delays ranging from 20 to 50 seconds behind the TV broadcast were seen in the Yahoo Sports stream.<sup>viii</sup> A 50-second delay is sufficient for everyone to tweet about a touchdown before much of the streaming audience has seen it!

With so many of the survey group delivering live content as part of their video service, it's understandable that two-thirds should be very concerned with live latency.

### ***Bitrate is ranked least important, but still critical***

Bitrate is the fifth most important parameter for our survey participants, with three in five rating it at 8 or higher in importance. Why should bitrate be a concern for OVSPs? Today, most video is streamed using adaptive bitrate (ABR) protocols. When Internet conditions worsen, ABR streaming servers reduce the bitrate of the video being streamed to ensure the viewing session does not stall. Under these circumstances, the lower the bitrate, the lower the picture quality.

Figure 11



## SCALING THE SERVICE

Many OVSPs have had their services in the market long enough for them to build considerable scale. In both the UK and the US, more than 20 percent of respondents have services expecting to deliver a million or more concurrent streams. The services represented by the UK respondents, however, generally deliver large numbers of concurrent streams. Just 21 percent of UK OVSPs deliver fewer than 10,000 concurrent streams, while 41 percent of US respondents are at this scale. Two in five UK providers are already sized to handle between 10,000 and 100,000 streams.

With so many of the survey group already pushing the scale envelope, it's no surprise that most have already formulated a strategy for scaling their service. The most popular strategy, both in the US and UK, is to work with CDNs to meet scale needs. Twenty-four percent of US OVSPs work with a single CDN, and 16 percent use multiple CDNs. Just a quarter of respondents say they do not have a plan for scale. Surprisingly, 19 percent say they will build their cloud server solution to address their scale needs. Those OVSPs tend to be much bigger organizations, with more concurrent users. OVSPs with 10,000 or fewer concurrent users are not sure how to handle their scale needs. Of those smaller providers that do have a scaling strategy, most favor the video platform and single CDN approaches.

Three-quarters of the survey group say that streaming video delivery costs represent 10 percent of the overall business costs. Yet 89 percent say that minimizing streaming costs is somewhat or

Figure 12

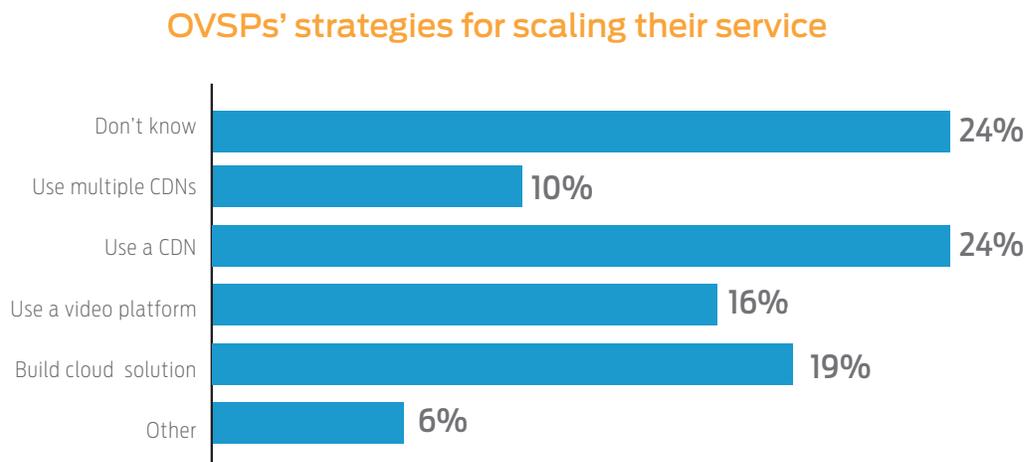
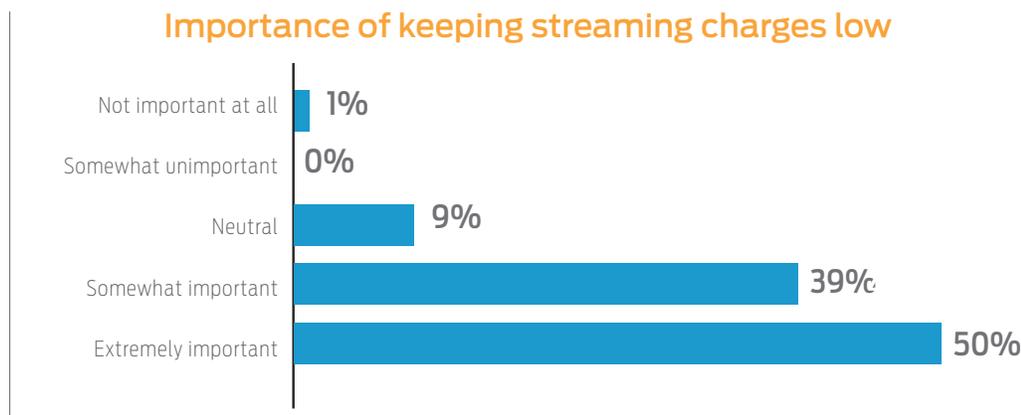


Figure 13



extremely important. Why are OVSPs so focused on reducing streaming costs when they represent such a small part of the business costs?

As the biggest variable cost of the business, streaming is bound to attract the most attention. That said, content creation costs and licensing fees are likely the biggest costs an online video business absorbs. Unfortunately, there's little the operational team can do about them. There's certainly no consensus among survey participants about the preferred pricing model for delivery costs. Most OVSPs want to pay only for the bandwidth they use. However, they're split evenly in their preferences for the following pricing models:

- A pay-as-you-go model where the service only pays for what it uses
- A pay-as-you-go model with an option to switch to a fixed-price contract
- A fixed-price contract where the service buys a block of bandwidth up front.

Few OVSPs are interested in models that charge based on the number of viewers or the size of their video library.

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- ii. Colin Dixon, "4 Million Watched Streaming Super Bowl LII," nScreenMedia, Feb. 6, 2018, <http://www.nscreenmedia.com/4-million-streaming-super-bowl/> (accessed on 3/6/18).
- iii. Will Richmond and Colin Dixon, "Game On! How Streaming Sports Is Heating Up," Akamai, Q3 2017, p. 18.
- iv. Colin Dixon, "Alive Online: OTT Service Providers and Live Streaming Services," NewBay Media, Q2 2017, p. 12.
- v. Daniel Frankel, "VMVPD Customer Base Reaches 4.6M but Has Only Recaptured a Third of Cord Cutters, Analyst Says," FierceCable, March 1, 2018, <https://www.fiercecable.com/cable/vmvpd-customer-base-reaches-4-6m-but-has-only-recaptured-a-third-cord-cutters-analyst-says> (accessed on 3/2/2018).
- vi. John Martin was speaking in the session entitled "Reimagining Television: A Conversation with Hulu and Turner" at CES 2018 on Jan. 10, 2018.
- vii. Conviva, "OTT Streaming Market Year in Review 2017," Conviva, Q1 2018, p. 3.
- viii. Colin Dixon, "4 Million Watched Streaming Super Bowl LII," nScreenMedia, Feb. 6, 2018, <http://www.nscreenmedia.com/4-million-streaming-super-bowl/> (accessed on 3/2/2018).

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#### About the Author

Colin Dixon, principal of nScreenMedia, is a resource to the digital media industry as it transitions to the new infrastructure for multi-screen delivery. Through a mix of informed opinion, news, information, and research, nScreenMedia helps you make sense of multi-screen media. [www.nscreenmedia.com](http://www.nscreenmedia.com)