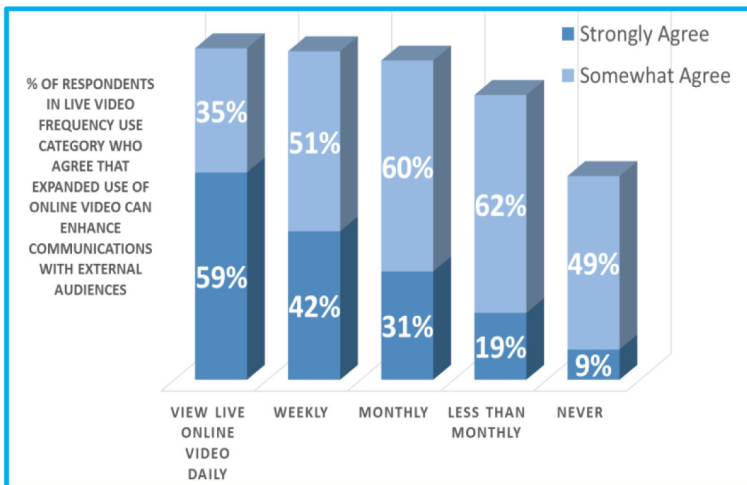


# 3 Best Practices for Video Conferencing, Streaming Media, and Webcasts

By Dave Tidler, Digital Communications Solutions Architect,  
Yorktel Media Services

Among all the communication mediums marketers have to choose from, there's one fact that cannot be ignored: video content — including curated user-generated video and original branded content — is exploding across the internet. In a report published in the Business Video Now series, Wainhouse Research estimated that workers watched 1.12 billion hours of business-related video content in 2013, a trend that's forecasted to more than double by 2016.

Improvements in the availability of broadband Internet connectivity and advances in voice and video communications technologies are leading savvy executives to utilize video and media services to reduce travel costs, stay connected to their increasingly remote workforces, and find new ways to engage customers and prospective clients.



Streaming media/live online video is emerging as a solution to the external and internal communications challenges marketers face among the myriad of competing messaging platforms (e.g. digital signage, SMS, TV, radio and email ads). In fact, according to a 2013 Wainhouse Research Enterprise Web Communications Survey of 1,000 executives, those who used online video reported it as the most effective tool in branding and promotion.

A single live online marketing session has the potential to draw thousands of viewers and will typically generate a larger audience – and longer viewing time – than is possible from an employee-targeted video distributed behind the corporate firewall.

Employee training and executive presentations are also cited in survey results as two more applications of online video that are frequently used. But while this inward-facing content is created most often, it does not lead the pack in generating actual viewership of live business video in the corporate market. Rather, it's the outward-facing applications of video that generate the most consumption of live online content.

### The Face-to-Face Meeting Goes Virtual


Improvements in the availability of broadband Internet connectivity and advances in voice and video communications technologies (see "Is 4K Video Ready For Primetime?") are leading savvy executives to utilize video and media services to reduce travel costs, stay connected to their increasingly remote workforces, and find new ways to engage customers and prospective clients.

While video conferencing, webcasting and streaming media have the potential to play a positive role in addressing these business needs, there is a significant challenge that must be addressed before this medium can become a viable replacement for in-person engagements: audience distractions. Unlike in-person meetings where participants are in the same physical location, video affords people the opportunity to participate in meetings remotely from the comforts of home, which includes distractions from phone calls, emails, instant messages, and social media, outside noise, and pets, just to name a few. Even participants who join from their desk at their corporate office can succumb to these. Before using visual communications as an alternative to a face-to-face meeting, one of the first orders of business is to have a well-prepared presentation with relevant content that will draw your audience in—and keep them there.

Another type of distraction that's just as important as the first one comes from technical problems, such as poor video quality, video and audio stutters, or dropped packets. Any of these issues can alienate your audience and compromise your results.

Assuming you're able to develop a compelling message and good content, below are some helpful tips to ensure your technology doesn't leave you or your audience hanging. Following are three best practices you should follow to ensure your video conferencing session operates smoothly.

**1. Use Adaptive Bitrate Streaming.** In the early days of the Internet, if you wanted to watch a video feed, you had to select a box to indicate your connection speed. At the time everything was hardcoded to deliver the media at a specific bit rate and quality. During this same period, video conference presenters were limited to using very specific (and often proprietary) video hardware, media encoders, and software. As video conferencing technology evolved, so have the delivery methods to carry the content to viewing audiences. Adaptive bitrate streaming technology is now available to help mitigate issues of shard bandwidth and overburdened workstations. Adaptive bitrate technology contains built-in intelligence that can detect the user's bandwidth and CPU capacity in real time and adjust the bitrate of a video stream accordingly. To enable this technology, one must use software and/or hardware to encode a single source video at multiple bit rates and then transport the stream on an adaptive bitrate carrier format, such as Microsoft Smooth Streaming.



An ideal choice for many companies is to leverage a hybrid environment that offers internal multicasting for on-site users and external unicasting for remote off-LAN viewers (national or international)

**2. Multicasting vs. Unicasting.** A common challenge faced by large enterprises that incorporate video conferencing meetings among their remote workers is ensuring their internal network doesn't become overwhelmed by the video packets they're streaming, which can be disruptive not just for the video conferencing participants but other users accessing their network, too. In these situations, multicasting can be used to alleviate potential bandwidth problems.

A unicast presentation creates a one-to-one connection, whereby each viewer is routed back to the presentation origin, no matter where the viewer is located. This means that if there are 50 viewers in an office in California watching a 300 kilobit presentation from an office in New York, each one of those viewers is pulling their own 300 kilobit stream. This is a huge burden to a corporate WAN. (WAN or LAN? Offices are not necessarily wireless. Can we just say network or bandwidth?)

Multicast, on the other hand, uses a one-to-many connection. In the previous scenario, multicast would generate a single 300 kilobit stream between New York and California, allowing the 50 viewers to pull their streams from their local router rather than making 50 separate connections back to New York.

An ideal choice for many companies is to leverage a hybrid environment that offers internal multicasting for on-site users and external unicasting for remote off-LAN viewers (national or international) as shown in Figure 1.

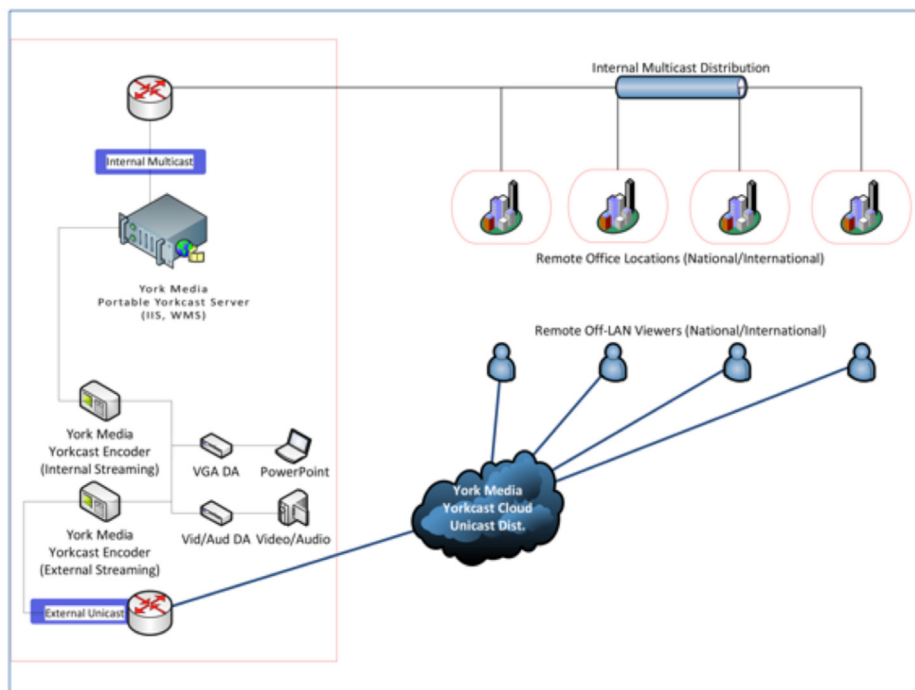


Figure 1

A media and video managed services provider can be a great resource to help your company acquire the video conferencing technologies you need and deliver the quality video and audio experience your audience demands.

**3. Using a Content Delivery Network (CDN).** Depending on the size of your intended audience and the type of content you're delivering, it may not be feasible to deliver your presentation from your on-premises facility. Instead, it may be better to use a CDN Provider (e.g. Akamai, Amazon CloudFront, Windows Azure.) These companies have tens of thousands of web servers located around the world and specialize in delivering video content from the optimal network path to each participant. For example, if a participant in northern Virginia and eastern Pennsylvania are both trying to watch the same webcast/video conference, the geo-location aware CDN may route the presentation simultaneously to its data centers in Washington D.C. for the Virginia participant and Buffalo, NY for the Pennsylvania participant, to ensure the content travels the shortest distance possible over the public Internet. This minimizes latency and packet loss while increasing quality, reliability and scalability, resulting with a consistently high quality end-user viewing experience globally.



Although video conferencing and video streaming have come a long way over the past decade, creating a crisp viewing experience for one's target audience can still be challenging for the average business executive — or even for many IT admins. Fortunately, that doesn't mean you have to postpone using video conferencing solutions or gamble with your video quality. A media and video managed services provider can be a great resource to help your company acquire the video conferencing technologies you need and deliver the quality video and audio experience your audience demands.

## Is 4K Video Ready for Primetime?

Marketers and consumers of HD video are being inundated with waves of messaging telling them to trade in their outdated HD video streaming equipment for the latest in 4K Ultra HD (UHD) technology. This newer technology boasts four times the resolution of current HD along with eye-popping clarity and unmatched color richness.

A recent article appearing on CNNMoney, for example, talks about French broadcaster TDF transmitting programming in UHD for its leading video music channel, a decision it made after its successful live 4K broadcast of the French Open tennis tournament in France.

An article appearing in the July/August 2014 issue of *Streaming Media* magazine titled "Educators, Adopt 4K Video Now and Get Ahead of the Curve," makes the case to educators to be pioneers in video capture by investing in 4K now and getting a head start on this trending video standard.

Adding to the buzz is a recent announcement made by Cisco, predicting that by 2018 more than 20 percent of all worldwide connected flat panel TVs will be 4K. While the promises of 4K technology are covetable, there are a couple of good reasons most marketers — especially those interested in live video/streaming media — should avoid making 4K investments any time soon:

### 1. 4K Networks Are Not Readily Available.

The common consensus is that 4K will demand downstream throughput of around 20 megabits per second, which despite being realistic within the four walls of many enterprises, is rare for remote workers and businesses located in rural areas. If the last mile isn't yet ready for the majority of your audience, it doesn't make good business sense to pay 2x to 4x in 4K display and other hardware costs just to reach a small portion of your target audience.

### 2. Mainstream 4K Use Still Too Far Away.

Companies that prefer to be technology pioneers rather than laggards may opt to replace legacy displays with 4K displays in the hopes of avoiding a massive 4K investment all at once in the future. A look at the research, however, suggests it's still too early to make such a move. The Cisco report mentioned earlier, for example, predicts that UHD traffic will comprise only 11 percent of IP traffic by 2018 — HD will account for 52 percent (up from 36 percent in 2014) and SD will still account for the remaining 37 percent (down from 64 percent in 2014). Although 4K technology is admittedly trending upwards, the reality is that even four years from now nearly 90 percent of all IP traffic will still not be 4K. Marketers that purchase 4K displays now will find that these same displays will be close to end of life by the time 4K video streaming/conferencing is ready for primetime.