How A Hybrid CDN Can Optimise OTT Services

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The explosion of content, channels, platforms and devices is profoundly changing the media industry. Some analysts predict that OTT (over the top) content will surpass over the air (OTA) free television in the next five years. As more content in ever-higher resolutions must be delivered in broadcast quality over IP networks not originally designed for the demands of video, network operators and cable companies must contend with significant new challenges. Expanding services to keep pace with consumer demand and capitalise on the opportunities of online video is a business imperative.

To that end, profitably scaling video and data services, including the most efficient and cost-effective high-quality content delivery to set-top boxes and mobile devices, requires a highly optimised approach. A hybrid CDN may just be the answer.

The quality conundrum

The quality challenge is a pernicious one. IP network bottlenecks and delays, client and player latencies, and the "retry model" for IP delivery all create a less-than-stellar viewing experience. Internet-delivered content should be consistently low latency, in line with what consumers expect and enjoy with their television experience. Content shouldn't pop around in different bitrates, looking good sometimes and bad at others. And when

viewers want to change channels, they should be able to so do relatively instantly and without waiting for a stream to buffer.

Best of both worlds: hybrid CDNs

A CDN is a geographically distributed group of servers that work together to provide fast delivery of internet content. To minimise the time and bandwidth required to deliver content to a consumer, a CDN stores a cached version of

its content, enabling operators to deliver content efficiently to internet-enabled devices. It's an approach that works. An astonishing 337,000 petabytes of video was delivered via CDNs in 2016, representing 67% of total consumer video traffic. And, it's forecast that by 2021, CDNs will carry 1,470,000 petabytes (440% growth vs. 2016), or 77% of total consumer video traffic.

A hybrid CDN is a middle ground between fully using a shared-capacity public CDN and operating a fully owned-and-operated private CDN. While public CDNs provide reach, private CDNs give cost-effective scalability, control and service visibility. A hybrid CDN provides the critical benefits of each and represents a relatively simple operational model for cost-optimised, higher quality OTT content delivery.

A hybrid CDN uses bandwidth more effectively and through smart caching, which places content closer to

the viewers, also reduces network latency and packet loss leading to higher quality of experience (QoE).

At the same time, a smartly designed hybrid CDN increases content availability and redundancy. Sudden spikes in traffic can bring down a company's server. Techniques like load balancing distributes network traffic evenly across several servers, making it easier to scale rapid boosts in traffic.

Live video on the rise

These advantages are all the more essential in the face of the exponential growth of live content. Live streaming puts the most strain on network infrastructure, requiring the lowest possible latency and increasing susceptibility to buffering and loading delays. In 2016 live streaming video was valued at $30 billion and is projected to grow to an astounding $70 billion by 2021. Live content is outperforming the growth of all other types of video by 113%. It's too important not to get right.

Large multinational sporting events draw huge global audiences, garner significant online engagement, and can be high-profile profit centers. They also present a significant risk when trying to scale to meet online audience demand. Remember last year's World Cup? International media rating measurement service Conviva recorded 75.8 million attempts to stream the quarterfinal games of the 2018 World Cup, but over 15% of these attempts failed – more than 11 million unsuccessful attempts.

Scaling into the future

As operators look to transform networks for the future of video, hybrid CDNs provide a more intelligent way to navigate a highly connected online television ecosystem and achieve OTA-quality parity for OTT services. Operators can manage end-to-end service delivery that encompasses content origination, transcoding, caching, storage and session

control, controlling what is cached where, and directly managing the interaction between the consumer's player and the cache to achieve lower latency and cross-device synchronisation.

Hybrid CDNs are a smart choice that work in concert with last-mile broadband delivery networks. Placing private CDN servers inside internet service providers' broadband and mobile networks to overcome peering point contention and serve content from dedicated servers as close as possible to consumers will be a defining characteristic of OTT services. This will deliver a better QoE for OTT consumers and relieve bottlenecks in internet service providers' networks. It's a win-win-win for OTT service providers, broadband operators and consumers.

Staying a step ahead of consumers' unending thirst for online content and improving profitability through more scale and higher quality, requires more intelligent networks that maximise next-generation technologies. It's time to look at hybrid CDNs. ◆