MASTERING THE DELIVERY OF ONLINE CONTENT – A MEDIA AND ENTERTAINMENT PERSPECTIVE

An interview with Adam Karon, Executive Vice President and GM, Akamai Technologies

Q&A

The Media and Entertainment industry has been shaped and reshaped by technology. How do you characterize the effects of digital technology today?

Adam: On the consumer side of media and entertainment, we've seen the technological transformation of the music industry, moving away from anything physical to completely digital. Now we see the same thing happening with the transition of video from physical or even broadcast media into full-blown digital media. And we're starting to see more digitization of production and distribution as well. Where we used to have satellites downlinking to production studios, now upstream content moves over the Internet. So technology is really transforming the entire supply chain of media and entertainment.

The industry has always centered on getting content — be it print, audio, or video — to the consumer. And the objective has been to gain scale, more people consuming more content. Technological capabilities keep opening up new opportunities both to enrich content and to increase scale. Now the Internet has changed the very definition of scale, with the potential to deliver content anywhere, anytime, on any device. Never have content providers been able to reach so many people so continuously and effectively.

Technology has also spawned new kinds of content providers and platforms — YouTube, Facebook, Netflix — that have gained extraordinary scale over the last 10 years. For established media companies, these relative newcomers can be both competition for consumers' attention and channels for gaining it. With so many media and entertainment options at the consumer's fingertips, what does it take to win in this marketplace? Rich content, engaging experience, and increasing personalization.

What are the special challenges when the content is video?

Adam: Customers are expecting what we would call a "TV experience," whether it's online or from their cable box. They expect perfect picture and sound quality, no delayed starts or blank screens or waits for buffering, instant channel changing, perfect play on every device.

The TV cable box experience is extremely challenging to replicate over the Internet. Somehow you have to be able to provide that same level of performance and reliability online to any device — mobile over cellular, mobile over Wi-Fi, a tablet, a laptop, a connected television. It could be the video screen in your car. Customers want their content anytime, anywhere, on any device. And quality is essential regardless of whether the content is monetized through subscriptions or accompanying advertisements.

Continuity of delivery is especially important with video given the nature of the medium. Video delivers a narrative and takes the viewer on a journey. If it stops midstream, that's very frustrating. Without high-performance delivery, the video product is unable to do what it was designed to do. Uninterrupted delivery is part of the product.

What technological capabilities are needed to deliver continuous high performance?

Adam: There are two. First, you need to get the content really, really close to the customer. That minimizes latency and buffering, and simply speeds delivery. It also provides more opportunity to monitor what customers are experiencing on their devices and make adjustments to improve the experience. Akamai's distributed platform aims to put servers at the "edge" of the Internet, in essence in everyone's neighborhood.

Second, you need to navigate the Internet, which includes many, many networks all over the world. Networks have to communicate together to transport content from Point A to Point B. When there are bottlenecks or other problems, you need to be able to route around them instantly. Again, a highly distributed "edge" provides more intelligence and more options for rerouting traffic and maintaining delivery quality.

Please talk about the role of measurement.

Adam: Measurement is critical across the entire digital supply chain for video. Monitoring and measurement are needed from the content origination point, the studio, through every "moving part" in the supply chain, and have to be accomplished numerous times every second. It is a huge challenge to capture and correlate the data, but it is necessary in order to deliver a "better than TV" experience.

This tracking of the quality of content in motion includes a focus on the customer's device. Technology there can tell you, for example, how fast video content is arriving and whether there are interruptions or delays for re-buffering. There's a whole series of real-time measurements trying to make sure that the quality's perfect.

On top of that, media companies want to measure what they would on regular television in order to monetize advertisements and subscriptions. And that's where things get really interesting. Audience measurement by third parties like Nielsen has long relied on sampling and extrapolation, and ads were sold in bulk to reach large audiences. Online, however, we don't need to sample — we can see what's actually happening at the individual device level. We can finally measure audience and experience directly. How many viewers, how long did they watch, what fidelity levels did they have, how did they interact with the app, what did they do next, and were they humans or bots? Advertisers are saying that they want human-verified traffic.

This capability is going to take some time to adjust to. So much data is potentially available that companies are overwhelmed. The smart thing to do is step back and consider that measurements are most directly useful for understanding audiences and selling ads and subscriptions. And keep in mind that this data is going to drive new sales, revenue — even business models.

What special challenges does the media and entertainment industry face in the cybersecurity domain?

Adam: The basic challenges are what you'd see on any commerce website — starting with securely storing and managing personal information about customers, and defending against distributed denial of service (DDoS) attacks that attempt to take down your servers and make your content unavailable.

Some of the special challenges in media revolve around the value of the intellectual property being protected. The Game of Thrones leak was big news. Content may be transported from the content creator to a production house, then to a group of distributors, and then out to affiliates. The content must be transmitted and stored securely at each of the several stops along the way, so no one can listen in or break in and steal the content. When content is pirated for resale, or simply accessed without authorization, significant revenues can be lost.

Media and entertainment companies need to pay special attention to how delivery operations and cyber security interact. The security system helps enforce business rules about access to content and commitments around licensing rights. For example, if a broadcaster has rights to a sporting event only in a specific country, you need geo-based access protection to block unauthorized users. And if a customer has a device-based subscription to content, that has to be managed securely. As the industry runs more and more on the Internet, all these security issues and their potential business impact grow.

With so many kinds of content and destination devices, how does the development of content delivery apps keep pace?

Adam: We want to give the consumer the best possible experience on the chosen device. However, delivery to all possible devices gets impossibly complex, so the foundation step is to determine what major platforms — Android, iOS, and so on — you will develop for. Even then, the device-level operating system can present restrictions around transmission speed or buffering capability that make high-quality video delivery difficult.

The most important thing developers can do is keep their apps as simple and focused as possible. Don't have the app do anything that doesn't belong there — anything that can be handled automatically elsewhere. Video formatting and compression, for example, should be done by infrastructure. The app should focus on the user experience, not the mechanics of technology integration. Yet that's easier said than done when the typical content delivery app has a dozen APIs from a variety of vendors beneath it.

Focusing on the user experience is complex enough by itself when media and entertainment apps are incorporating more personalization and more social experience. The one thing the app should do, as we touched on earlier, is gather the data that lets the experience be measured and improved.

It will be interesting to see how much and how soon content delivery will become more browser-based rather than apps-based, which can lessen the need to develop across devices. That battle has been underway for several years, and HTML5 is a recent foray on the web side. But this remains a space fraught with a lot of questions and not a lot of answers.

How should the broadcast and digital sides of the house be working together?

Adam: Five years ago, digital was still the new kid on the block — little investment, no revenue to speak of, more experiment and hobby than business. Now digital channels are not just here to stay, they're transforming the industry. All of the major U.S. broadcasters have merged the two sides of the house, with one executive managing both. That's essential for a couple of reasons.

One, more content moves across delivery channels. Social media provides a continuous feed into the broadcast newsroom, and then the news is delivered via social media and streaming as well as TV. Content developed for any channel can be repurposed across others, and content is increasingly designed to be multi-channel.

Two, things are fragmented at playback by the proliferation of consumer devices, but the digital technology upstream in the content supply chain is converging. We recommend drawing your content supply chain from concept to consumption. A lot of the chain can take advantage of common technical architecture and workflows. That can lower cost, improve quality, and accelerate cycle time.

All the talk — and consensus — these days is that digital is the future. So the broadcast people have to learn to be digital, be online, in all facets of the enterprise. However, broadcast is likely generating the bulk of revenue and profit, so the transition of its business model must be in measured steps. And digital may have a lot to learn from broadcast about operational discipline and delivering content reliably and consistently at large scale.

To wrap up, what are the top things that technology executives in media and entertainment companies need to know and do to maximize the growing value of the online channel?

Adam: Here are three that revolve around maximizing the ability to distribute content.

- First, focus on the quality of the product. Not just its audience appeal, but the quality of its delivery to customers on their terms. To maintain that quality, configure your infrastructure and application development methods to be agile. Because things are going to change — in technology and in the marketplace.

- Second, make the product ubiquitous. Make it available in as many locations as possible to maximize audience engagement. That means your content delivery infrastructure has to be able to scale, and it needs the smarts to measure and adapt how it uses the Internet.

- Third, make the means of monetization, whether payment or ads, as unintrusive as possible for customers. You want the lowest barrier to entry for the consumer to watch the product because that's going to drive the most aggregate value.

If you've done those things well, you have the opportunity to focus your engineering and technical resources, just like your creative resources, on what makes your product

special. Not on things like network and video operations, but on delivering the consumer experience that pays off.

These are exciting times for the industry. Everyone is experimenting with different models to drive consumer adoption of their product. Netflix and Amazon seem to be succeeding with rather different models. The established broadcast and content players are investing and trying different formulas. But they all ultimately depend on the successful delivery of digital content.

As the world's largest and most trusted cloud delivery platform, Akamai makes it easier for its customers to provide the best and most secure digital experiences on any device, anytime, anywhere. Akamai's massively distributed platform is unparalleled in scale with over 200,000 servers across 130 countries, giving customers superior performance and threat protection. Akamai's portfolio of web and mobile performance, cloud security, enterprise access, and video delivery solutions are supported by exceptional customer service and 24/7 monitoring. To learn why the top financial institutions, e-commerce leaders, media & entertainment providers, and government organizations trust Akamai please visit www.akamai.com, blogs.akamai.com, or @Akamai on Twitter.

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