Deliver The Right Rich Media Every Time
by Mark Grannan
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Why Read This Report
Consumers have an appetite for rich media, and the amount of content out there is exploding in an attempt to satisfy them. Unfortunately, the bandwidth available to your creative team is static and insufficient to support the creation of a myriad of options. Making matters worse, consumers lose patience when experiences are slow to render or play. Application development and delivery (AD&D) professionals need to understand when and how to optimize rich media to create digital experiences that will enable their creative counterparts and delight customers.

Key Takeaways
Content Bottlenecks Are Choking Your Digital Experiences
Consumers have a voracious appetite for content, especially rich media like images and video. But brands struggle to sate this hunger, both in terms of creating and delivering engaging content. Rising endpoint diversity and increasing expectations of fidelity further complicate the creation and delivery of rich media — but relief is in sight.

Tough Choices Surround Image And Video Optimization
To deliver the right content in the right way, you need to decide what content to show on various screen formats and in what format and at what resolution you will render the content. Content delivery involves the difficult challenge of making these decisions in a fraction of a second for thousands of concurrent sessions.

Use Multiple Technologies To Right-Size Your Content Delivery
There is a laundry list of management and delivery solutions that enable for automatic creation and delivery of the “right” content. Adopt a two-stage optimization strategy.
Digital Content’s Explosion Is Bottlenecked

US online adults have a voracious appetite for content on the web: Some 80% of US online adults report that they read newspapers, magazines, and blogs online, while 75% watch TV, films, and videos online in a typical week. Rich media like video resonates with every generation because the human brain is wired to retain visual content. To satisfy consumers’ appetites for content, marketing teams dedicate up to one-fifth of their staff to content production. However, they often fail to reuse that intellectual property; as one senior director of content strategy lamented, “Reuse of our content across channels is the Holy Grail for us.” Two key difficulties plague delivery and effectiveness:

› **The growing diversity and fidelity of endpoints.** Delivery technologies must cope with an enormous variety of endpoints, from wearables to connected televisions. For example, in 2015 there were already more than 24,000 distinct Android devices. And the fidelity of endpoint devices is increasing: Smartphones and tablets now routinely boast resolutions greater than full HD. Virtual reality content demands even higher resolution. However, broadband speeds haven’t kept pace, causing a traffic jam of rich media across the web.

› **The compounding of delivery performance challenges.** The weight of the average web page has increased considerably, passing 2 MB in 2015 and 3 MB in 2017. While some of this is due to the accelerating use of custom fonts and JavaScript, images and video are the primary offenders; video dominated web page growth between 2016 and 2017. This complexity results in a cascade of slower performance, increased bounce rates, and missed customer engagement value.

Image And Video Optimization Require Tough Choices

When it comes to rich media, brands must ideate, create, produce, approve, organize, localize, and deliver content. Unfortunately, it’s now necessary to automate the following decisions:
What to show on different screen orientations. Members of Gen Y — the highly coveted demographic of online US adults aged 29 to 37 — use more than four connected devices on average. The vast majority of smartphone use (91%) is in portrait mode, whereas only 18% of large tablets are used that way. If a content provider makes the choice between portrait and landscape mode at random, it could deliver content with the wrong size for the user’s screen or crop some images awkwardly. Artificial intelligence (AI) can step in to automate this process by detecting the device’s screen size; in more advanced scenarios, it can understand the area of focus and crop the image appropriately. This could accelerate the growth of 9:16 video.

What format to render content in. Many systems can render images in a specified format, such as PNG or JPEG, as needed. However, not all endpoints — like web browsers — support all file formats and compression algorithms (e.g., Brotli). This requires the server, the practitioner, or both to do more work to make these options available. Instead, marketing creatives must consider how to store compound Photoshop files or high-resolution TIFF files as the single sources of truth. AD&D pros need to deliver the correct rendition on demand for thousands of images and videos in hundreds of contextual permutations.

What resolution to use to render content. Desktop browsers can handle almost any image resolution, but only higher-end mobile devices can use full fidelity. Even if a mobile device has a high-resolution screen, mobile network latency and limited data plans are major hurdles for content delivery. Video viewers have no patience for buffering, and buffering challenges go beyond the display. Decoding 4K video requires a lot of heavy lifting, so AD&D pros need to take device processing power into account. Minimizing the device’s workload requires delivering the right rendition from the server.

Combine Technologies To Automate Content Optimization

Determining which technologies and teams should be responsible for content optimization is confusing. The best practice is to think about image optimization during all three phases: creation, development, and delivery. Addressing image-related performance issues in all three areas will complement each phase and reinforce optimization by creating a safety net. To build this safety net, AD&D professionals must embrace three key technology categories (see Figure 1):

AI-infused DAM for creation and organization. Digital asset management (DAM) supports both upstream creative and downstream delivery processes. In addition to features like content creation workflows, DAM supports on-the-fly rendering of images and videos, allowing users and systems like web content management to access various versions of an image. Some DAM solutions, like those from Adobe, Aprimo, and Stylelabs, use AI to automatically detect focal point and crop for a given device, rendering desktop or mobile images without cropping out the main subject.
› **Cloud-based tools for rendering and optimization.** Moving into production environments, delivery tools must sense and respond to browser, operating system, resolution, screen size, bandwidth, and more to optimize content delivery. Digital performance services like Akamai, Fastly, and imgix automate image conversion, resizing, cropping, and rendering tasks. By offloading these workloads to the cloud, AD&D professionals can simplify workflows and lower rendering times, reduce bounce rates, and increase conversion rates.

› **Hybrid tools to combine management and delivery.** Today, solutions like web content management systems (CMSes) and eCommerce suites commonly leverage software-as-a-service and platform-as-a-service delivery models, bundling in performance and security features. For example, IBM uses Akamai’s Image Manager solution within its cloud-based web CMS solution. When video — especially in high-resolution formats like 4K and high dynamic range (HDR) — becomes the focus, hybrid solutions such as online video platforms from Brightcove and Kaltura use adaptive bitrates to adjust the resolution and bitrate based on a viewer’s connection.

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**FIGURE 1** Media Optimization Relies On A Blend Of Technologies Working Together

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<th>Creation/management optimization</th>
<th>Cloud/edge delivery optimization</th>
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**Cloud services**
- Akamai, CDNetworks, Cloudflare, Cloudinary, Fastly, imgix, Instart Logic

**Digital asset management**
- Adobe Assets, Bynder, OpenText Media Manager

**Creation/management**
- Adobe Experience Manager, IBM Watson Content Hub

**Online video platforms**
- Brightcove, Kaltura, Ooyala
Provide A Safety Net With Two-Stage Content Optimization

If you don’t pay close attention to rich media, your digital experiences may not overtly fail, but your customers — and potentially your sales — will suffer. Image and video optimization can make or break a customer’s interest in sticking with your app and doing business with your organization. To boost their rich media optimization strategy, AD&D professionals should:

› **Use diagnostic tools to understand performance bottlenecks.** Content owners and eBusiness pros can use free tools like Google’s PageSpeed Insights, freemium tools like SpeedCurve and Akamai mPulse Lite, and enterprise application performance management solutions from vendors like Akamai, AppDynamics, and New Relic to assess the current performance of a site and get solid recommendations to improve performance. These tools show which resources are causing performance problems and the potential savings that optimization can deliver.

› **Right-size technology investments to solve image optimization.** A little optimization can go a long way. For some companies, the delivery phase provides the ultimate — and only — performance optimization. For others, such as those in the fashion and consumer packaged goods industries, images are core assets to the brand and company; image optimization will require heavier investment during the creation phase with a formal DAM solution.

› **When in doubt, automate both management and delivery optimization.** Agency partners and solution add-ins like user reviews don’t always use the same management processes as you do. In those cases, it’s a no-brainer to enable DAM solutions to automatically create renditions when the agency uploads them, or cloud delivery services to create and deliver the right format of that user-generated content.

› **Communicate with third parties about brand and performance guidelines.** While this is a strong safety net, recognize its limits. For example, JavaScript-inserted assets such as personalized promotions are commonly still outside of any control, unless that solution is also managed with a DAM-like service or backstopped by an edge optimization service. Thus, AD&D professionals and their marketing counterparts must insist on these capabilities when working with third-party content sources.
Supplemental Material

Companies Interviewed For This Report

Akamai

Cloudflare

Endnotes


For more information, see the Forrester report “Marketers Must Focus On The KPIs That Count.”

2 For more information, see the Forrester report “Vendor Landscape: Video Platforms For Customer And Employee Experience.”
For more information, see the Forrester report “Content Gets Its Feet As An Enterprise Marketing Function.”

For more information, see the Forrester report “Omnichannel Strategies Demand A New Content Approach.”


For more information, see the Forrester report “Brief: Don’t Ignore 4K Like You Did 3D.”


For more information, see the Forrester report “Marketers Must Focus On The KPIs That Count.”


The vast majority of video today is produced in 16:9 format for widescreen displays, meaning that users must rotate their phones for the video to fill the screen. A video in 9:16 format would play normally in portrait mode.
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