

Unifying Playback in a Hyper-Fragmented World

Selecting a media player solution to simplify and amplify video reach and engagement

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Introduction

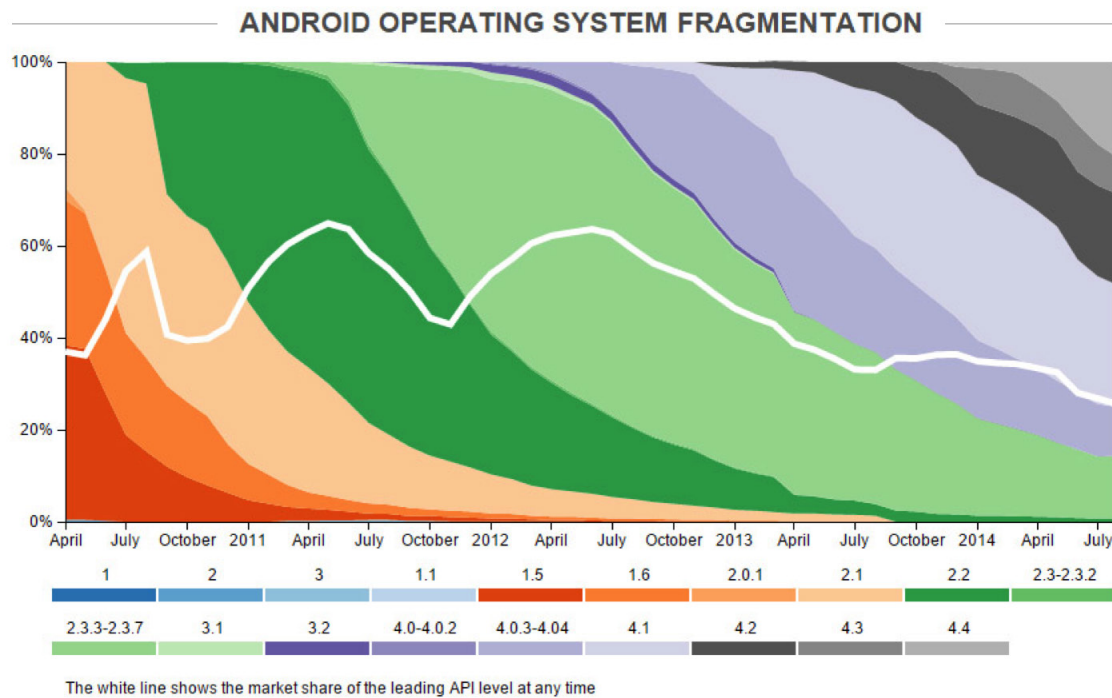
Every three seconds, nearly a million minutes of video travels the Internet, reaching users across a dizzying array of online devices.¹ From laptops to smartphones to TVs and consoles, the vast proliferation of connected screens brings both unprecedented opportunity and extraordinary challenge for companies looking to engage and entertain their audiences.

To capitalize on this opportunity, publishers need a video platform that enables the robust, high quality delivery of video across all devices. While there are several components to such a platform, ranging from content management to delivery to monetization, a core tenet of the strategy is the media player—the audience touchpoint. In addition to directly informing the viewer experience, media players also play important behind-the-scenes roles—executing the intelligence behind adaptive bit rate streaming, for example, as well as providing granular data for enhanced viewer analytics and sophisticated ad decisioning.

Thus, as the online video ecosystem grows more sophisticated and the device marketplace becomes more fragmented, the choice of media player becomes increasingly critical to the near and long-term success of any online video strategy. In this white paper, we look at the most important factors to consider when choosing a media player as part of that strategy.

Reaching Every Viewer, Every Time

As the number of devices in use now exceeds the world population, mobile is leading the charge in the online video consumption boom.² Mobile viewership has increased more than 400% in the past two years and now accounts for more than a quarter of all online viewing, reflecting audiences’ desires to consume video, wherever they are, on whatever screen is in front of them.³ For media companies, the ability to satisfy those audience desires—by delivering high quality video experiences to every viewer across every device—is a baseline tenet for success today, but this fundamental objective is getting harder and harder to achieve.



Android market fragmentation continues to get more severe.

The key obstacle is the severe fragmentation of the mobile marketplace—an issue that is continually worsening. Though iOS commands mindshare, Android dominates the market, representing nearly 85% of smartphones and 66% of tablets shipped worldwide.^{4,5} Six different Android versions each claim significant market share, while OEM firmware and software customizations create further device divergence. Unfortunately, the trend shows no signs of abating, as carriers and manufacturers try to differentiate themselves while competing to expand both the high and low ends of the marketplace. The perversely heterogeneous Android landscape now includes nearly 19,000 distinct devices, quadrupling the number of devices seen just two years ago.⁶

Device fragmentation brings tremendous complexity to the video player environment, as each device, browser, and operating system carries different video capabilities and limitations. On the browser side, for example, Flash-based video is supported on most desktops but very few mobile devices. Its successor, the HTML5 <video> tag, still suffers from uneven support of codecs and streaming formats across different browsers and devices—and isn't supported at all on older ones. Furthermore, HTML5 video, by itself, does not often provide for adaptive bit rate streaming—a key technology in optimizing delivery of high quality video. The newer HTML5 Media Source Extensions (MSE) specification does support adaptive bit rate, but is not yet widely implemented.

The complexities don't stop there. Competing streaming protocols—Apple HTTP Live Streaming (HLS), Adobe HTTP Dynamic Streaming (HDS), Microsoft Smooth Streaming, and the emerging MPEG-DASH—further segment the market, each working only with certain systems or browsers. In addition, different devices may only work with specific codecs and containers. And even when a protocol is supposedly supported, bugs and poor implementations can cause unexpected problems in reality. For example, although Android versions from 3.2 onward officially support HLS, in practice there are numerous well-documented issues, ranging from crashes to deformed images to loss of seeking capabilities.⁷ To make things worse, carriers and operators often add their own customized software to devices, creating inconsistent behavior and divergent UIs. Issues like outdated graphics drivers can cause problems as well. Finally, all of these factors are constantly changing: support for a technology might be added, dropped, or modified at any time—so keeping up is nothing short of all-consuming.

Other video-related requirements, like the government-mandated closed captioning support, can create additional complexities, due, again, to divergent constraints across different devices and media types. There is no standard location for the captioning text, for instance; it might be found in sidecar text files, or within the media container, or directly integrated into the encoded stream, making it challenging to display correctly.

Some companies may build native iOS and Android applications for their video in order to gain greater control over the video experience. But while this removes the browser from the equation, all the other issues above—ranging from protocol and codec support to hardware, firmware, and software compatibility—still abound. In addition, managing separate iOS and Android video players can be a headache.

Either way, the video player is central to the process, making the key decisions that govern playback. To even begin rendering a video, the player must determine the correct playback technology based on the codecs, containers, and streaming protocols supported by the device and its software. Then, the player must select an appropriate stream based on factors such as screen resolution, network speeds, and device capabilities. Adaptive bit rate technologies should be leveraged whenever possible, to enable optimal stream quality while minimizing start up times and buffering delays.

This means the choice of video player is paramount: a well-implemented player can deftly navigate device, OS, and protocol incompatibilities, as well as bugs and unexpected behavior, to deliver high quality video regardless of the situation. But while it is easy for media players to claim multi-device, multi-platform support, the reality of robustly delivering quality streams across devices is far more complicated. To help ensure success, publishers should look for several key traits:

- **Proven success.** Unexpected behaviors and undocumented issues are commonplace in the mobile marketplace, so breadth and depth of real-world experience are critical. Look for a player that has a proven track record of successful deployments, backed by an organization with deep expertise in video delivery at scale.
- **Optimized for quality.** Research has shown that video failures and delays increase abandonment, diminish engagement, and reduce return visits, so the playback experience is critical.⁸ Intelligence built into the media player can strongly affect the quality of playback, so choose a company with a reputation for prioritizing quality and reliability.
- **Topflight support.** As a mission-critical component of video delivery, the media player demands top notch, specialized support. Troubleshooting in a fragmented marketplace can be complex, and given that many issues can involve interaction between multiple third-party components, it is easy to point the finger elsewhere when problems arise. Thus, it is important to select a technical support team that is not only highly experienced in player-specific issues, but is also committed to being responsive and finding solutions, wherever the problem may lie.

Maximizing Audience Engagement and Value

While a robust media player makes it possible to deliver high quality video across diverse devices, the player is far more than just a playback device. Serving as the touchpoint between viewers and content, the media player also plays a critical role in increasing audience engagement and value.

One key role of the media player is in advertising playback. Predicted to grow 19.5% annually over the next three years, the U.S. video ad market will far outpace traditional online display ads, growing at a meager 3% a year.⁹ Mobile video advertising in particular is poised to explode, as analysts expect an astounding growth rate of 73% a year through 2018.¹⁰ As a key monetization channel for many publishers, it is essential that video ad playback work smoothly and without error, every time. Playback problems mean a direct hit to revenue, in addition to driving viewer dissatisfaction and abandonment.

Unfortunately, ad integrations are challenging, due in part to the number of third party players involved. Technology from the media player, ad vendor, and ad decision engine all must work together seamlessly across many different hardware and software platforms. Each component can be enormously complex even by itself: a single ad decision may involve multiple ad networks in a bidding process, for example, or an ad creative might incorporate code invoking interactive controls that conflict with the player. Moreover, each native and browser-based platform is different, exhibiting its own quirks and limitations. Bugs can be subtle and difficult to diagnose: an ad may load correct the first time, but not the second or third time, for instance, or resuming video playback may hang after the ad plays correctly.

Another key role of the media player is in providing analytics data, allowing publishers to better understand their audiences and optimize their offerings. Analytics integrations are similarly complex, requiring implementation across multiple platforms to support both web and native applications, as well as careful integrations with ad playback in order to accurately report content and ad viewership. Moreover, as the role of analytics in business strategy continues to grow, demands for more granular and more accurate data increase, in turn propelling changes in their integrations. Traditionally, analytics companies used simple beacons to collect data, but as intelligence requirements grew more sophisticated, many have moved to formal SDKs, which in turn continue to change over time, requiring concomitant changes in the media player.

These challenges again highlight the value of choosing a robust media player solution—one that can shield publishers from a great deal of headache and complexity by handling these integrations seamlessly. In evaluating solutions, the following characteristics are important:

- **Workflow independence.** Publishers gain flexibility when their media player is not tied to a single workflow solution, giving them the flexibility to choose content management, storage, transcoding, and delivery systems that best meet their needs. In addition, changing or adding a new advertising or analytics service should be seamless and easy.
- **Rigorous integrations.** The complexity of ad and analytics integrations means that while it may be relatively straightforward to get an integration working nominally, it is far more difficult to get it working robustly across different device scenarios. Look for an organization with depth of experience, proven integrations, and a commitment to keeping those integrations up-to-date as they evolve.
- **Cross-platform simplicity.** Managing different solutions across native and browser-based worlds creates unnecessary cost and complexity. A media player solution that unifies and simplifies integration and configuration is vital to reducing both time-to-market and maintenance overhead.

Future Trends: Protecting Your Investment

There are few, if any, industries that evolve as quickly as the online video landscape. On the player side, in the span of a few short years, we have already seen a seismic shift from a near monopoly of Flash-based video to the opposite—the dominance of mobile devices with no Flash support—leading both to the rise of native iOS and Android players, as well as to the adoption of HTML5—and eventually, HTML5 with Media Source Extensions—as the new “universal” in-browser playback standard.

Likewise, video protocols have also evolved tremendously over the last few years, shifting from competing proprietary streaming protocols to competing HTTP-based protocols. Now, just as HLS and HDS have become mainstream, there is yet another shift towards a new industry standard, MPEG-DASH, that is meant to be interoperable across platforms, protocols, operating systems, and codecs.

At the same time, online video ecosystem technologies like ad insertion, analytics, and security services are continuing to evolve, as are hardware ecosystems—not just mobile devices, but set-top boxes, connected consoles, and stream casting devices like Google Chromecast.

While these evolutions will ultimately lead to greater opportunities for publishers—to deliver more brilliant viewer experiences, inhabit more screens, engage more viewers, and gain greater audience insights, in order to take advantage of the opportunities, companies must successfully navigate a complex and constantly shifting landscape. This requires not only a constant learning curve of new technologies, but the ability to gracefully handle competing standards, uneven adoption rates, specifications in flux, third-party bugs, and other messy realities of a dynamic landscape.

Because of its central role in the video delivery workflow, a lot of the responsibility to navigate these changes falls upon the media player, requiring it to make intelligent decisions to take advantage of the latest capabilities where available, while supporting a diverse set of older and transitioning technologies. A robust media player solution can do so without disruption to a publisher's existing workflow, effectively shielding it from the headache and complexity of a fast-evolving marketplace. For this reason, it is important to choose a forward-looking media player company with active involvement in emerging standards, providing not just a solution that will work for today, but one that is future-proofed for tomorrow.

Akamai Adaptive Media Player

Designed to be the simplest way to deliver the best possible experience to every user, every time, on every device, the Akamai Adaptive Media Player (AMP) is a robust, workflow-independent player that enables publishers to quickly and confidently deliver brilliant, fault-free video to online and mobile audiences worldwide. With more than 100 million viewers per month, AMP is a time-proven solution, built based on Akamai's 15 years of experience delivering high quality, cross-platform video at scale, and trusted by the world's top publishers.

Because the Adaptive Media Player is workflow independent, publishers can leverage its capabilities without being locked into any specific online video platform. Companies can choose their own preferred solutions for content management, transcoding, delivery, advertising, and analytics, using different components as best fits their business. AMP is easily extensible and tightly integrated with leading ecosystem providers, including VAST, Double Click, and Freewheel for ads; and Nielsen, Comscore, Adobe, and Akamai for analytics. By simply setting parameters in a single configuration file, the relevant functionality is automatically made available across the media player on all devices across all platforms—no coding, workflow modifications, or multi-platform changes required. Thus, providing a simple, unified solution across web (Flash and HTML5), native Android, and native iOS, AMP minimizes complexity without sacrificing flexibility.

The Adaptive Media Player is also a fully integrated part of Akamai's end-to-end solution for media delivery, designed with the same emphasis on quality, performance, scalability, and security that Akamai has long been known for. Using AMP enables publishers to get the most out of Akamai's high performance delivery, storage, transcoding, and analytics solutions right out of the box.

In addition, AMP customers enjoy the highest level of support from Akamai's Advanced Media Development team, a group of deeply experienced engineers and support specialists dedicated to quickly resolving playback issues and ensuring a smooth media player implementation each and every time.

Finally, Akamai is committed to keeping AMP up-to-date with evolving integrations as well as emerging standards such as MPEG-DASH, ensuring that its customers are insulated from the complexity of ecosystem changes while allowing them to be at the forefront of technological advancements. With AMP, Akamai helps publishers move faster forward, enabling them to take full advantage of the tremendous opportunities ahead, while protecting them from the complexity of a hyper-fragmented marketplace, both now and in the future.

Sources:

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Akamai® is a leading provider of cloud services for delivering, optimizing and securing online content and business applications. At the core of the company's solutions is the Akamai Intelligent Platform™ providing extensive reach, coupled with unmatched reliability, security, visibility and expertise. Akamai removes the complexities of connecting the increasingly mobile world, supporting 24/7 consumer demand, and enabling enterprises to securely leverage the cloud. To learn more about how Akamai is accelerating the pace of innovation in a hyperconnected world, please visit www.akamai.com or blogs.akamai.com, and follow @Akamai on Twitter.

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