Transitioning Video Ads from Flash to HTML5/JS

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This document has been developed by the IAB Digital Video Technical Working Group

The following member companies are part of this working group:

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Xaxis
XUMO
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This document is on the IAB Tech Lab website at: https://iabtechlab.com/html5videotransition

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Executive Summary

HTML5 is replacing Flash as the default media playback option on all major browsers, with most browser vendors announcing plans to implement opt-in-only support for Flash over the course of the next few months. The IAB Tech Lab working with the Digital Video Technical Working Group recommends that Publishers and Agencies/Advertisers start implementing plans to replace Flash-based solutions with HTML5-based solutions, targeting the complete elimination of Flash video ads by **July 2017**. This paper and the supporting checklists are aimed at helping organizations implement this transition smoothly and effectively.

The Challenge

While Flash has been instrumental in delivering video and gaming content over the web, it has also had issues with stability, performance, security vulnerabilities and power consumption. For these reasons, Flash support on mobile devices has been wholly deprecated by the industry already. Now all major desktop browsers have announced plans to default to HTML5 media playback.

A (Non-Comprehensive) List of Announcements:

1. Google Chrome
    - Flash and Chrome blog post
        i. https://chrome.googleblog.com/2016/08/flash-and-chrome.html
        ii. Chrome will de-emphasize Flash in favor of HTML5. Starting with Chrome 55, releasing in December 2016, the browser will require an opt-in to enable Flash playback on certain sites.
    - Intent to remove tiny content exception
        i. https://groups.google.com/a/chromium.org/forum/#!msg/chromium-dev/QL2K4yFVg_U/vj44YWOaAwAJ
        ii. This removal will affect Flash-based Pixels that have been used by many verification technologies. The Google Chrome team recommends the use of Intersection Observer for viewability.
2. Safari
    - Flash opt-in on Safari 10
        i. https://webkit.org/blog/6589/next-steps-for-legacy-plug-ins/
        ii. Starting September 2016, with the launch of Safari 10, opt-in is required when a page loads Flash content. Safari gives users the option to save this viewing preference on a site-by-site basis. For Flash-based websites, Safari offers HTML5 implementation recommendations and tests.
3. Firefox
    - Reducing Adobe Flash usage in Firefox
        i. https://blog.mozilla.org/futurereleases/2016/07/20/reducing-adobe-flash-usage-in-firefox/

ii. Firefox has already been blocking some types of Flash content. Content viewability will be blocked later this year. In 2017, Firefox will also require click-to-activate approval.

4. Microsoft Edge
    - Putting users in control of Flash
        i. https://blogs.windows.com/msedgedev/2016/04/07/putting-users-in-control-of-flash/
        ii. Microsoft is adding a feature to its Edge browser that will automatically pause unnecessary Flash content. Peripheral content – ads, random animations, etc. – will be paused until a user actively clicks on it
5. Google Ad Exchange
    - Flash ad serving
        i. https://support.google.com/adwordspolicy/answer/94230?hl=en
        ii. AdWords will not allow the upload of Flash creatives starting in June 2016; any Flash creatives uploaded prior to June will stop serving in January 2017
6. DoubleClick
    - DoubleClick Digital Marketing transitioning to HTML5
        i. https://support.google.com/richmedia/answer/6358463?hl=en
        ii. https://support.google.com/richmedia/answer/7193493?hl=en
        iii. DoubleClick Digital Marketing is transitioning to HTML5 for video ads in 2017. From April 3, 2017, new Flash video creatives will no longer be accepted. Starting July 3, 2017, no Flash video creatives will be served, and their Active View and Verification measurement solutions will no longer use Flash.

These announcements from the browser providers mean that very soon, when users are presented with Flash content, they will at a minimum be forced to go through an additional step of approving the use of a Flash plugin to be able to view the content. Google's announcements also mean that Flash ads will be throttled and then blocked within their ad products in 2017.

Impact on Video Advertising

Wide Usage

Currently Flash is used in a variety of places in video advertising:

1. To render/playback video ads in publisher players consistently and reliably across all browsers using a single technology (the exception being mobile)
2. To build interactive ad experiences that either work with a video ad or are overlaid on top of the video content
3. For viewability / measurement purposes – as a wrapper around a video ad and/or as Flash pixels fired to help with measurement
4. To perform client side ad arbitration (client side targeting / ad managers)

HTML5 and JavaScript can enable the video-related functionality listed above, and do so with additional technical and user experience benefits, including lower resource consumption, better stability, and reduced security vulnerability. All browser vendors and the industry as a whole have accepted this as fact, and are moving to eliminate the use of Flash for online video playback. Publishers who continue to rely on Flash can expect an increasingly disrupted user experience that is likely to ultimately hurt their ability to retain an audience. In this light, eliminating Flash becomes important as a defensive maneuver. However, there is a positive aspect as well: moving to HTML5/JS will likely result in agencies building ads that work across both desktop and mobile, resulting in a better cross-platform workflow.

User Experience

Requiring user action to accept Flash adds an additional step and breaks the user experience on the page. That said, if the page is playing in-stream content over Flash, the ad will not request user access separately. This is a bigger problem for non-instream video ads.

Inventory Demand and Availability

One of the biggest challenges with video ads making a move from Flash to HTML5/JS technologies is one of timing. Advertisers worry about the availability of HTML5/JS based ad inventory while publishers worry about demand if they make a move before advertisers are ready. The recommendations included in the checklists (available at http://www.iabtechlab.com/html5videotransition) provide assistance with this problem by suggesting a phased approach for moving away from Flash and where possible supporting hybrid tags.

Technical Challenges

Currently there is no good technical means of distinguishing between Flash and HTML5 inventory outside of OpenRTB. The only reliable method is in direct conversations / agreements between publishers and agencies. Without such agreements in place, problems could arise when the inventory is Flash and the ad is a HTML5 VPAID (Video Player Ad Interface Definition) package, or when the inventory is HTML5 and the ad is in Flash format. These mismatches would just result in errors and potentially result in a bad user experience.

Two potential approaches have been proposed to address this challenge. The first is to provide a “hybrid” VAST tag with both Flash and HTML5 media files, so that the player could pick the one it supports instead of failing at the first tag it encounters. The challenge with this approach is that there is no guarantee that the player will handle these tags correctly.

The second approach is to build hybrid tags with the Flash or HTML5 VPAID node with a pure media file only alternative, so that the player can at least run the plain media file in case it doesn’t support the type of VPAID delivered. This approach shares the technical challenge of uncertain support within the player. In addition, there is a business challenge: advertisers will likely be unhappy about losing expected measurement information or interactivity in spite of having paid a premium for such features.

Tools for Creatives

Creators have been used to a rich set of tools with Flash and now need to switch to HTML5 tools. Luckily there have been a number of HTML5 tools released. In addition, ad tech companies have been sharpening their HTML5 support with useful tools, utilities and templates.

Viewability and Measurement

One of the main use cases for VPAID currently is around viewability and measurement. There is a concern that the move to HTML5 will result in a reduction of inventory that gets measured. This might be true for an interim period if we support hybrid tags with pure media files as an alternative, but over time it should not be a problem because most verification vendors have already built support for HTML5/JS based measurement.

Cost

There are a number of components that need to be changed including the video player, measurement libraries, ad server SDKs, etc. These changes will require a focused effort to complete a successful migration to HTML5/JS, with development, test and operations all demanding time and resources. Smaller publishers in particular might find these demands difficult to meet. Unfortunately, given the roadmap established by the browser vendors, the only

way to mitigate their difficulty is to provide a reasonable off-ramp, and time to make the changes, rather than requiring an immediate switch.

Recommendations

Considering the direction browsers are headed with Flash and the associated user experience, we believe that it is imperative that the advertising ecosystem also move away from Flash.

As of **January 2017,** Flash should be considered as "**deprecated**" across all of IAB's standards and guidelines. This includes VAST, VPAID, Digital Video Ad Format Guidelines and OpenRTB. All new IAB standards will not refer to Flash.

We also recommend that Flash should be completely **eliminated** from video ads **by July 2017.** Display ads have already made that shift over the course of the last year. We are aware that there are more complexities in making such a move for video ads, which is why we are providing some recommendations around timing, technical and operational options in two checklists (available at http://www.iabtechlab.com/html5videotransition) that will help publishers, tech vendors, agencies, and advertisers make the move. The most important highlight of the checklists is that publishers and agencies both take steps to shift the mix of ads from Flash to HTML/JS based ads over the course of the first six months of 2017.