Choosing Between VPAID, MRAID, and SafeFrame: Moving towards cross-platform delivery

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The delivery of digital advertising is underpinned by complex technologies. Disparate systems must interoperate seamlessly in real time to deliver the rich consumer advertising experiences that have become commonplace on the Web. Without common standards, interoperability between systems is impossible. One of the most valuable functions of the IAB is to bring its members together to share common practices and develop technical specifications and guidelines that help the marketplace function smoothly.

With all the various technical operations that take place in digital advertising, the lines between some operations begin to blur. One such area where technology becomes a bit gray is the serving of expanding rich media ads to consumer devices that can support rich interactions (e.g. computers, smart phones, tablets and certain connected televisions).

When rich media ads are served, the ad content delivered to the device's screen requires a line of communication with the system that hosts the content. This communication is different with different systems. In a video player, the player must be able to understand and process the ad's request in order to display smooth operation. For mobile in-app environments, the mobile app must be programmed to recognize the ad's requests. In a webpage where the ad code is hosted in an iframe, a line of communication is needed between the webpage and the iframe hosting the ad.

For each of these cases, the IAB and its members have developed distinct technical specifications to help systems operate more efficiently. These specifications have been adopted, or are in process of being adopted, widely and have made significant impacts in reducing the friction associated with buying and selling advertising in web, mobile, and video advertising.

But what do you do when you want to develop and serve an ad to both web and mobile-app or run and measure video within a mobile rich media creative? What if you want to take that same ad and run it within a video player without incurring extensive overhead costs to create, manage, and track performance for the different formats? A common cross-platform approach should be possible given that the underlying technology for running all three types of ads is quickly converging to common web standard: HTML5.

Is A Convergence of Technology Standards the Answer?

Before we bring the question of convergence to the floor, let's take a look at the three specifications developed by IAB to handle ads in digital video (VPAID), mobile apps (MRAID), and in secure cross-domain iframes (SafeFrame). We'll provide a high-level overview of each specification and its purpose, and then we'll unpack the common threads between all three specifications. We'll also examine the challenges we see companies face as they try to work with digital ad campaigns that deploy across video, mobile, and web platforms.

Commenting on these three specifications are the IAB members who co-chaired the technical specification development for each:

- Prabhakar Goyal, Microsoft: co-chair on VPAID 3.0 and SafeFrame initiatives
- Nathan Carver, Crisp Media: played a leadership role in the MRAID 2.0 initiative
- Sean Snider, Yahoo: co-chair on SafeFrame initiative

Overview of VPAID, MRAID, SafeFrame

Three technical specifications designed to handle engaging rich media are VPAID, MRAID, and SafeFrame, presented here in the order of their introduction to the marketplace:

VPAID

VPAID stands for Video Player-Ad Interface Definition and specifies an API to manage interactive creative in video players. VPAID implementers can use whatever code they like, using the protocols defined in the spec. Originally developed in 2009, version 3.0 was released in the spring of 2012. VPAID is widely adopted in some version or another among the digital video community.

MRAID

MRAID stands for Mobile Rich media Ad Interface Definition and specifies an API for managing interactive creative within the mobile in-app environment. MRAID solves an analogous problem to VPAID, and was launched when the problem of managing interactive ads in a mobile environment became apparent. MRAID defines a general approach for HTML ads that display in any kind of container, but in practice applies to apps developed for mobile. The IAB currently supports two versions of MRAID: version 1.0 was released in 2011 while version 2.0 was released in 2012. Today, most native mobile apps implement one of these two versions.

SafeFrame

SafeFrame is a managed API-enabled iframe that opens a line of communication between the publisher's page content and the iframe-contained external content (the ad). Content served into a SafeFrame is afforded data collection and rich interaction, such as ad expansion, that is unavailable in a standard iframe—especially when protection of user data and publisher page security requires the ad content to be isolated from the page content. Released in 2013, SafeFrame 1.0 was designed to

deliver rich media ads more efficiently and securely on the publishers' pages, and supersedes previous recommendations like the IAB Friendly iFrames or other pub-side frame busters.

Three Solutions, with a Common Thread

An overview of these three ad technology specifications reveals an apparent common thread. "Each of the three specifications solve a common issue—to provide a standard runtime environment for the ad within a constrained environment, a container which is built by somebody other than the ad developer," states Goyal.

In each case, the ad is contained and a line of communication is developed between the ad and the environment to which it is being served.

Going a little further into the background for each specification, you find that each was developed to enable a common technology to proliferate interactive ads across platforms of a specific kind. In each case, containing the ad content protects the hosting content from possible malicious or nefarious ad code, or ad code that might otherwise conflict with the hosting content inadvertently.

"As we move forward, we can work to unify the namespaces, interfaces, and methodologies into a common 'container' specification. While the underlying implementations would obviously be different, the core functionality from the ad unit perspective would be the same, allowing developers to potentially build a single creative that can be deployed across all environments," notes Snider.

Carver adds, "There is nothing explicit that says MRAID must only be used in-app. The same definition could be used as an interface any time an ad is delivered to a constrained space. There are examples of people using MRAID for Web as an alternative to standard iframes. Others have been known to include MRAID ads in VAST definitions."

Challenges

While VPAID, MRAID and SafeFrame have each solved significant problems in digital advertising, challenges have also developed. Today the lines between Web, video, and mobile ad creative are becoming more and more blurred. The ultimate goal of digital advertising technology is to reduce the cost of distribution, so it should come as no surprise that the buy-side is demanding better integration between technology standards. Build once, deploy everywhere is the goal, but we are far from realizing its achievement.

Those intimately familiar with the three specifications are asking interesting questions about the convergence of these standards:

- How can VPAID and MRAID best be used together?
- While MRAID was developed for in-app experiences, what about browser-based apps?
- Should SafeFrame be the sole solution for browser-based experiences?

Based on what IAB hears from members, the area of overlap that is most prominent and most pressing currently involves the desire to deliver video in the context of a mobile in-app rich media ad. How do you take advantage of VPAID's capabilities in the context of an MRAID ad? We also hear about the desire to use a single creative in both mobile web and mobile apps, which might require an MRAID implementation that works in-browser, possibly via a bridge or integration between MRAID and SafeFrame.

Today, some of the challenges that arise from trying to use one solution in conjunction with another involve conflicts with naming conventions. For example, "expand" in VPAID is used to express that the video player pane expanded. In MRAID, "expand" is used to express that the ad creative has expanded. In mobile, the video player and apps are always at full screen size and cannot expand, so relating "expand" to the player or app was never considered.

Another issue raised by inconsistency in each spec is range of events covered. Each spec only covers events specific to the platform it supports. Events made available in VPAID are video player specific, while in MRAID, events include tracking device orientation, creating calendar events, and other device-specific variables. SafeFrame, on the other hand, has events that are mostly about resizing the container for expanding ads and reporting geometry that can be used to determine how much of the ad container is in view.

It's clear that these specifications have helped in their respective domains, but when advertisers are developing for cross-screen deployment, what API solution should they use? Unfortunately, today, it involves cobbling together these specs, in ways that could be made more efficient through alignment.

Next Steps

These are exciting times in digital advertising. The medium is experiencing tremendous growth and technology is making it all possible. Despite the challenges, these three ad technology standards still enable significant interoperability. When compared to using proprietary solutions, using an industry standard is usually the right choice.

"Starting with MRAID doesn't limit you. It is an essential decision for anyone delivering rich media ads to mobile devices," says Carver. The same is true when you start with VPAID or SafeFrame. Your choice of technology standard should first be informed by your deployment focus: is your primary target platform Web, video or mobile? But these choices should not limit extending to other platforms.

Our key challenge in the industry is to maintain interoperability while looking at the next steps we can take to further a more cross-screen environment for digital advertising.

We've outlined some of the challenges we've seen when choosing ad technology standards here, but we'd also like to know what your challenges are: how do you handle campaigns that might use more than one of these specs? How do you make them work together today?

"The time is now to align these API specifications, taking the ad portability across publishers one step further: ad portability across devices and formats. Think of developing and deploying a single ad that runs across all supply, on every publisher, across web, mobile and video!" exclaims Goyal.

"You can imagine a scenario where the data model is simply just extended for MRAID or VPAID use-cases, and then the functionality of the API is extended as well, allowing a unification, and making the lives of developers who build ad units much easier," adds Snider.

With this article, the IAB has started to lay the groundwork for a long-term plan to bring these specifications into alignment with one another. We intend to establish a roadmap for that converged future, starting with taking a close look at capabilities and naming conventions.

In the short-to-medium term, the IAB will work with the industry to define best practices for effectively using VPAID and MRAID together. We could also envision projects (depending on need and interest) that link VPAID and SafeFrame or SafeFrame and MRAID. We are looking forward to helping the industry take these next steps.

Contact Information & Acknowledgements

To share your perspective on the evolution of the IAB's creative specifications, to contribute work that you're already doing along these lines, or to get involved in these projects as they move forward, please email mobile@iab.net or adtechnology@iab.net.

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