

# Overview

Large numbers of Web sites - likely a majority - are funded in part or wholly by advertising. The largest Web advertising company (already a W3C Member) has annual revenues of close to \$100Bn USD and growing. There are lots of smaller companies, or large companies making less revenue, in the industry. So there are some opportunities and some challenges.

## Opportunities

There's scope for improving the Web experience for everybody. Improved coordination can enhance the security, privacy, performance, analytics, and ultimate utility of the web advertising ecosystem.

Being a recognized player in the advertising industry may strengthen our position in other areas, such as Web payments.

There's scope for new Members and new work.

## Challenges

There are already established standards organizations in this space. However, they are limited because they have the idea that they *use* the Web, whereas we can *change* the Web.

The biggest obstacle is that people notice, can't help noticing, and hate, obnoxious overuse of advertising. It's sleazy and unpleasant. So people tend to say they hate *all* advertising. There are risks here: that people say W3C is promoting advertising, that we're selling out, that we're doing for-profit work. A possible mitigation is to be careful to say everywhere that the work we're doing is (if it's true) cleaning up the sleaze, improving security, safety and privacy, helping accessibility.

## How Web Advertising Commonly Works Today

Web Publishers (also known as Web site owners) sell "ad slots" on their Web pages. An "ad slot" is a place where a complex mechanism will put zero or more ads automatically whenever someone fetches a page with slots in it.

When a Web page is displayed a sequence of events happens.

1. The User's browser contacts the Publisher's Web server and requests a page;
2. The Web server builds the page (or serves a static file); this may include ad fulfillment;
3. The Browser receives HTML that might already contain some ads from step (2), and might also contain some JavaScript to get more ads;
4. The JavaScript contacts the ad channel's sever, from Chitika or Doubleclick/Google, with information identifying the publisher, the URL, and the user. (this is an obvious privacy problem);
5. The ad channel typically runs a virtual auction, where each advertiser has said, This is how much I'm willing to pay to have my ad shown on a page with words like this to a user interested in so-and-so, of this age and income range. So the highest (or, for Google, second-highest) bidder wins

and the ad channel's Web server returns ad code (a mix of JavaScript and HTML, possibly calling on Flash and/or images) that will display the ad in that one ad slot on the Web page that the browser was displaying back in step 3.

6. Step 5 is repeated for each different ad-slot on the page.
7. If there are no bids you get a blank region; early on Google used to put an ad for a charity, but once they gave up the "do no evil" pretence that seemed to stop.
8. The ad channel charges the advertiser for each ad that's actually shown. This is where analytics comes in, as if you don't scroll down to reach an ad it wasn't shown, was it?
9. In some cases, showing the ad is enough to earn the Publisher money, and in other cases the user has to click on the ad; the ad channel gives some of that money from the advertiser (step 8) to the Publisher. Again, there's a need to detect honest clicks.

Directly negotiated ads, or ads the Publishers put on their own pages directly, such as "buy this book on Amazon" affiliate links, cut out the ad-channel, but are massively harder for the publisher to administer than just making blank spaces on their Web pages and out-sourcing the selection of ads.

There are already companies selling ads that get past AdBlocker, and of course server-side ads can't easily be blocked today as there's no "advert" HTML element :)

## Some Technical Areas (The Big Gap)

### Analytics: Who Saw My Ad? Did you click? Did you buy?

We have a first draft of the Intersection Observer specification, <https://www.w3.org/TR/2017/WD-intersection-observer-20170914/> edited by Google in the Web Platform Working Group; this spec provides a new JavaScript way to see which areas of a document have been exposed to a user.

There's currently no safe protocol for a client to report back; it's possible something could emerge out of Web Payments or even Verifiable Claims at W3C.

So there's scope for future work both in shaping Intersection Observer to advertising needs and in multi-party secure communication.

Conversion tracking, especially for affiliate links, has also been a subject of fraud in the past; the "ads.txt" initiative may be helping. Google has tried analysing credit card purchases and we can expect this trend to continue. Users may find being able to make third-party assertions about specific purchases less invasive.

### Demographics and Privacy

Most people don't want to be tracked and monitored. They don't want their private details and interest to be bought and sold. But they click on ads, and they want to buy stuff, and they want ad-funded Web sites to stay in business.

In the EU, GDPR (General Data Protection Regulation) compliance has a May 25, 2018 implementation deadline and hefty penalties for non-compliance.

Maybe a way forward could be for third parties, Preference Providers, to store users' profiles and only forward non-identifying information for advert selection purposes? This is similar to models being developed elsewhere at W3C, for example in Web Credentials, Web Payments and Verifiable Claims groups, and could increase effective targeting without violating privacy, and still report back analytics.

## Embedded Content and Security

An ad is typically an HTML/JavaScript fragment that will load media - it might be a video or Flash, or it might be plain text with links. It's not unknown for malicious people to pay for ads that will attack users' computers, e.g. using vulnerabilities in Flash or the browser itself. So ads (like any other untrusted third-party content) should be displayed in a sandbox. But, see Blending, below.

We need to work on trust levels within documents.

## Accessibility and the Auction

If you run a site that has to be accessible you need to restrict the ads which the ad channel sends back to your visitors to be ones that are accessible - for example, they can't rely on playing video or sound, and they can't use images without alt text. There's no standard way to express that need today. A related problem is that if you have large text set in your browser, a text ad might not all fit into its ad slot, and will be clipped so it can't all be read. This sort of problem causes Web sites to fail accessibility audits, as well as losing sales for the advertiser stuck paying for ads that couldn't be read.

## CSS, iframes and Blending

A common and effective strategy for ads is to make them look so much like the main text of an article that people click on them by mistake. This is called "blending" and how far you can go e.g. with Google ads is subjective: if Google objects they will just drop your entire Web site from their search results until you fix things, showing that the advertising and search parts of Google are not independent. But the limits are not very high.

Unfortunately, CSS style rules don't inherit into iframes, so as a Publisher you set the fonts and colous and sizes of your ads in a Google panel and if you support "theming" you need to rename the ad slots e.g. with different HTML or with JavaScript. There's no way to get a textured background into an ad either. I don't know if this is good or bad but it leads to people not wanting to use textured backgrounds. So we could consider supporting a way to control inheritance of specific properties, to help ads match the feel of surrounding content.

Performance of embedded content is also critical, and of course avoiding a browser page reflow even when ad sizes are responsive.

## Web Payments

Blurring the distinction between an ad and a storefront - an ad that lets you buy something without taking you away from the original page? Chitika and others have experimented a little, but the infrastructure

wasn't in place. We're much closer now, both on the desktop and on mobile, and maybe it's time to experiment with the latest generation of Web technology, while there's still time to change the Web.

Re-targeting, where someone who browsed or researched an item goes to another site and gets shown advertising for that or similar items, could be combined with enhanced association and even on-page ads.

## Next Steps

At TPAC in Burlingame CA in November, W3C created a Business Group with a mandate to explore brave new worlds and to spawn off one or more Working Groups for technical work as needed. This is in the process of getting started.

It's likely that if people in the BG can identify technical areas we'd all benefit from a public Workshop to get increased visibility.

The public-facing emphasis throughout the work needs to be one of draining the swamp, of improving accessibility, of improving the user experience, of ending the adblock battles without putting small Web sites out of business, in other words a "positive advertising experience", so as to continue to attract participation e.g. from open source browser vendors.

We should reach out to...

### standards orgs and People:

- 4A's - American Association of Advertising Agencies, <http://www.aaaa.org/>
- IAB - Interactive Advertising Bureau (already talking) IAB's tech lab - Jennifer Derke and Dr Neal Richter of Hebbian Labs iabtechlab.com
- Canadian and European branches of IAB (and Asia??)
- AAF - American Advertising Federation
- ANA - Association of National Advertisers
- DMA - Data & Marketing Association
- NAI - Network Advertising Initiative

### channels/networks

There's tons of these. Here's a few of the better known

- AdCash
- Adsterra
- BuySellAds
- Chitika (I've used Chitika since their launch but lower RPM than Google)
- Clicksor (Canada)
- Facebook
- Google Adwords and Adsense (duh) also known as DoubleClick
- Infolinks

- Max Bounty
- Media.net (includes mobile docked ads. yummm?)
- PropellerAds - <https://propellerads.com/>
- Revcontent
- RevenueHits
- ShareASale
- TribalAdNetwork

## advertisers

Some of the larger advertisers might be interested in participating directly.

I can see people like Comcast, AT&T, Tencent, Netflix, Facebook, being interested in solid Web platform approaches to solving some of their problems.