DPOG’s focus areas

A collection of the latest advances in the Display adtech

Siddarth Nuti

2017

Table of Contents

[Viewability 3](#_Toc494916960)

[What is Viewability? 3](#_Toc494916961)

[How to measure Viewability? 3](#_Toc494916962)

[Issues with Viewability 4](#_Toc494916963)

[Sources 5](#_Toc494916964)

[Native Advertisements 6](#_Toc494916965)

[What is Native Advertising? 6](#_Toc494916966)

[Different Type of Native Advertisements 6](#_Toc494916967)

[Future of Native Advertisements 7](#_Toc494916968)

[What is the future of Native in Microsoft 8](#_Toc494916969)

[Issues with Native Advertisement 8](#_Toc494916970)

[Sources 9](#_Toc494916971)

[Video Advertising 10](#_Toc494916972)

[What is Video Advertising? 10](#_Toc494916973)

[Different Types of Video Advertisements 10](#_Toc494916974)

[The Future of Video Ads 10](#_Toc494916975)

[What is VPAID? 10](#_Toc494916976)

[What is Microsoft doing when it comes to Video Advertisements? 11](#_Toc494916977)

[Sources 12](#_Toc494916978)

[Global Ad Spending and Dynamics 13](#_Toc494916979)

[What is the current Ad spending scenario? 13](#_Toc494916980)

[What is the Ad spend by Channel? 13](#_Toc494916981)

[Growth of Mobile spend leading the digital charge 14](#_Toc494916982)

[Sources 15](#_Toc494916983)

[Key players in the Display Marketing Landscape 16](#_Toc494916984)

[Agencies 16](#_Toc494916985)

[Agency Trading Desks 17](#_Toc494916986)

[Creative Optimization Agencies 17](#_Toc494916987)

[Retargeting 18](#_Toc494916988)

[Ad Servers (Marketer Side) 18](#_Toc494916989)

[Verification and Privacy 19](#_Toc494916990)

[Demand Side Platforms (DSPs) 19](#_Toc494916991)

[Media Planning and Attribution 20](#_Toc494916992)

[Tag Management 20](#_Toc494916993)

[Measurement and Analytics 21](#_Toc494916994)

[Ad Exchanges 21](#_Toc494916995)

[DMPs (Data Management Platforms) and Data Aggregators 22](#_Toc494916996)

[Data Suppliers 22](#_Toc494916997)

[Ad Network 23](#_Toc494916998)

[Media Management Systems & Operations 24](#_Toc494916999)

[Sharing Tools / Social Tools 24](#_Toc494917000)

[Supply Side Platforms (SSPs) 25](#_Toc494917001)

[Publisher Tools 25](#_Toc494917002)

[Ad Servers (Publishers) 26](#_Toc494917003)

[Sources 27](#_Toc494917004)

[Standard Ad Sizes and Formats 28](#_Toc494917005)

# Viewability

## What is Viewability?

Viewability is a metric in Advertising which aims to capture the impressions which have actually been seen by the User. This provides the advertisers the opportunity to optimize their marketing spend by focusing on the impressions which can actually be seen by the user.

Thus there is an increase in the advertisers seeking viewability metrics and this has made it a necessity for a commonly accepted definition of Viewability.

Currently, IAB (Interactive Advertising Bureau) and MRC (Media Research Center) have decided that an Ad is viewable if 50% of the ad was in view for at least 1 second in the case of display ads and at least 2 seconds in the case of video ads.

Based on a [study](https://www.thinkwithgoogle.com/marketing-resources/data-measurement/5-factors-of-viewability/) done by Google on it advertising platform and DoubleClick, below are few metrics which try to give an idea about the importance of Viewability and why advertisers are pushing for it:

* A small number of publishers are serving mist of the non-viewable impressions: 56.1% of all impressions, but the average publisher viewability is 50.2%
* The most viewable position is right above the fold, not at the top of the page
* The most viewable ad sizes are vertical units, while the most popular ad size is 468\*60
* On an average, 68% of the ATF(Above the Fold) ads are viewable and 40% of BTF(Below the Fold) ads are viewable
* Viewability varies across content vertical with reference and online community sites having served the most number of viewable impressions

## How to measure Viewability?

Since Google said that ~ 56% of the Banner ads are never seen, there has been a huge focus on viewability and has led to increased adoption of various viewability techniques, and some of the more prominent ones are:

### Page Geometry Method

The oldest and most commonly employed technique for measuring viewability is to compute it directly from geometric information gathered from the page, including the size and relative placement of the page, browser viewport and ad. While simple, this approach suffers from many technical limitations, particularly if the impression is delivered within nested cross-domain iframes. These iframes are very common, and are used by both publishers and ad servers to prevent ads and other external content from intentionally or inadvertently interfering with websites. As a side effect, they restrict access to the geometric data needed to compute viewability, leading to huge gaps in data collection.

### Browser Optimization Method

This is one of the early methods which depends on most browsers having an optimization tool built in to stop animation from playing once it goes out of the viewport. The same technology is used to calculate the Viewability of an ad. This is done by deploying 1\*1 pixels with animation across the site and also in the middle of the ad to measure the 50% mark of the ad. Based on the activation and de-activation of these pixels the Viewability is calculated. The drawback being this optimization tool requires flash to run and since flash is being disabled in most of the browsers, this method is going out of use.

### The JavaScript Throttle rendering pipeline approach

Certain browsers have released an optimization for HTML5 content that works very similar to the Flash optimization. It’s called Throttle rendering pipeline based on viewport visibility. It doesn't work with a collection of Flash elements, obviously, but relies on JavaScript's requestAnimationFrame. This is currently live for Safari version 9+, Firefox and Chrome version 52+. A huge advantage of this method is that it also works on mobile. On mobile, AppNexus moved from measuring 50% of mobile web traffic to 93% after switching to from Flash to JavaScript browser optimization method.

### IAB’s SafeFrame

According to IAB, SafeFrame technology is a managed API-enabled iframe that opens a line of communication between the publisher page content and the iframe-contained external content, such as ads'. This communication happens in a specific format, so the publisher only needs to give the creative the data and options it really needs, and thus this creates a controlled flow of data. SafeFrame is used for rich interaction, such as ad expansion, but it can also send viewability data from the publisher's site to the ad. But the current utilization of this technology is low.

### IntersectionObserver API

According to its documentation, the Intersection Observer API provides a way to asynchronously observe changes in the intersection of a target element with an ancestor element or with a top-level document's viewport. This has been adopted by AppNexus for its platform. This technique promises accurate calculation of viewability and can reduce the difference between the Publisher and Viewability Vendors.

### In-App viewability

The methods mentioned above are not useful when it comes to calculating the in-app interaction of apps and ads. Luckily, there are SDKs like the MRAID, which allow communication between the app and the ad. And with MRAID 3.0, it is possible to measure the percentage of ad shown thus allowing to calculate based on MRC standards. Similar SDKs are employed by 3rd party viewability vendors which allow to calculate viewability. An example of the same is MOAT, which Microsoft is currently working with to calculate viewability.

## Issues with Viewability

As the demand for viewability increases, publishers are trying to incorporate it into sites as this will help quality publishers increase the cost charged for a guaranteed by a human.

But before we reach there, the current infrastructure present poses problems leading to a difference in the % of viewability offered by the publisher and that of a visibility vendor. And although the difference is 3-5% it make a huge difference in terms of impressions and revenue.

Also, since big advertisers insist on their private vendor verification the problem is a big one for most publishers. The current MRC approved Viewability Vendors are: RealVu, comScore vCE-Validation, DoubleVerify, Google Active View, spider.io, Integral Ad Science, Alenty, Sizmek, Moat, WebSpectator for Publishers and Glam Media.

## Sources

<https://digiday.com/media/wtf-viewability/>

<https://www.thinkwithgoogle.com/marketing-resources/data-measurement/5-factors-of-viewability/>

<https://www.themarketingtechnologist.co/the-history-and-future-of-display-ad-viewability-tech/>

<https://digiday.com/media/transacting-viewability-publishers/>

<http://www.adageindia.in/digital/brands-to-publishers-let-us-check-your-viewability-rates-or-well-stop-buying-ads/articleshow/47432298.cms>’

<https://adexchanger.com/online-advertising/mrc-gives-its-blessing-to-viewability-vendors/>

<https://adexchanger.com/data-driven-thinking/a-viewability-technology-primer-part-1-promises-pitfalls/>

# Native Advertisements

## What is Native Advertising?

Native advertising is a type of advertising, mostly online, that matches the form and function of the platform upon which it appears. In many cases, it manifests as either an article or video, produced by an advertiser with the specific intent to promote a product, while matching the form and style which would otherwise be seen in the work of the platform's editorial staff. The word "native" refers to this coherence of the content with the other media that appears on the platform.

Popular examples include, Twitter's promoted Tweets, Facebook's promoted stories, and Tumblr's promoted posts. The most traditionally influenced form of native marketing manifests as the placement of sponsor-funded content alongside editorial content, or showing "other content you might be interested in" which is sponsored by a marketer alongside editorial recommendations.

Due to the nature of the disguised advertisement, in 2009, the Federal Trade Commission released their Endorsement Guideline specifically to increase consumer awareness of endorsements and testimonials in advertising given the rise in popularity of social media and blogging.

The American Society of Magazine Editors (ASME) released updated guidelines in 2015 reaffirming the need of publishers to distinguish editorial and advertising content. The ASME approach recommends both labels to disclose commercial sponsorship and in-content visual evidence to help the user distinguish native advertising from editorial.

## Different Type of Native Advertisements

The Interactive Advertising Bureau (IAB), the primary organization responsible for developing ad industry standards and conducting business research, published a report in 2013 detailing six different categories for differentiating types of native advertisements:

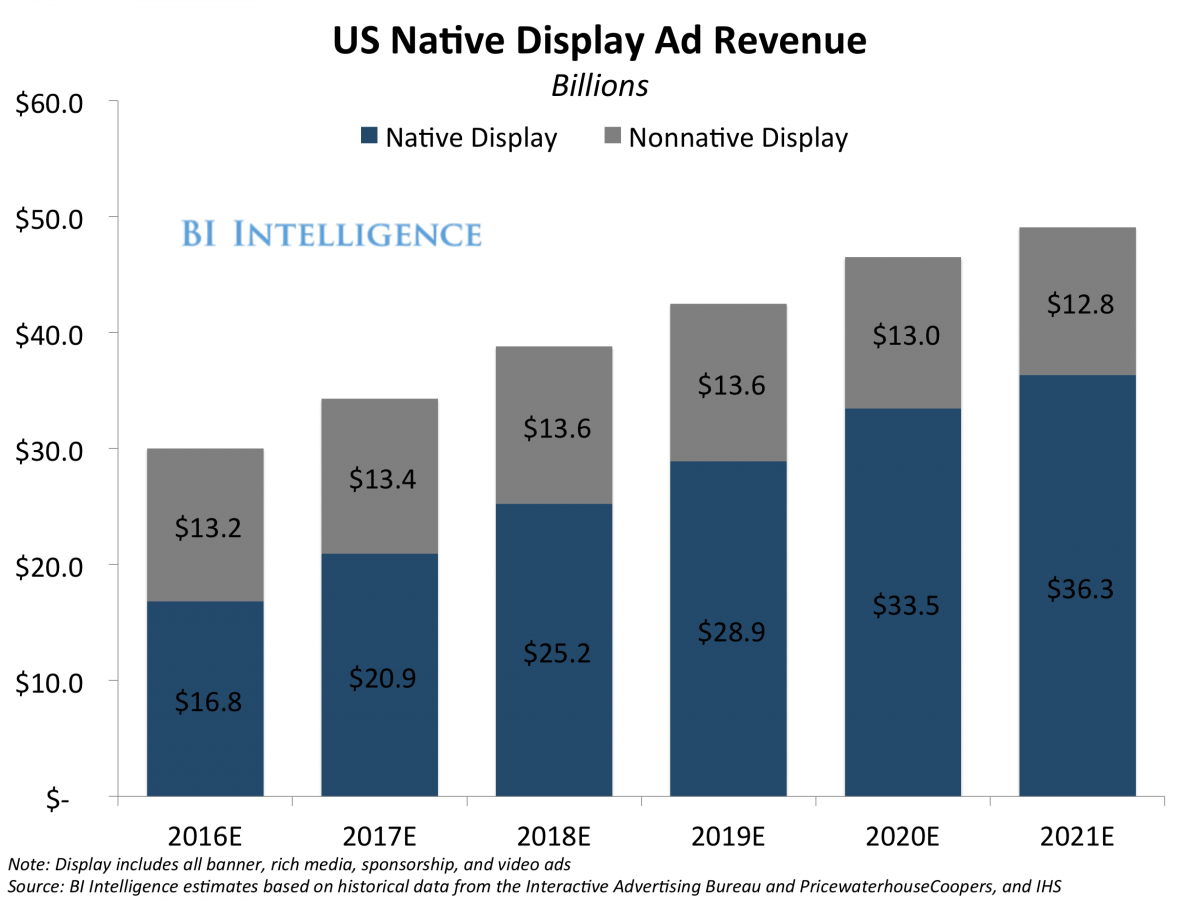
* In-Feed Ad Units: As the name denotes, In-Feed ads are units located within the website’s normal content feed, meaning they appear as if the content may have been written by or in partnership with the publisher’s team to match the surrounding stories. A category that rose to popularity through sites like Upworthy and Buzzfeed's sponsored articles due to its effectiveness, In-Feed has also been the source of controversy for native marketing, as it is here the distinction between native and content marketing is typically asserted.
* Search Ads: Appearing in the list of search results, these are generally found above or below the organic search results or in favorable position, having been sold to advertisers with a guarantee for optimal placement on the search engine page. They usually possess an identical appearance as other results on the page with the exception of disclosure aspects.
* Recommendation Widgets: Although these ads are part of the content of the site, these do not tend to appear in like manner to the content of the editorial feed. Typically delivered through a widget, recommendation ads are generally recognizable by words which imply external reference, suggestions, and tangentially related topics. "You might also like"; "You might like"; “Elsewhere from around the web"; "From around the web"; "You may have missed", or "Recommended for you" typically characterize these units.
* Promoted Listings: Usually featured on websites that are not content based, such as e-commerce sites, promoted listings are presented in identical fashion with the products or services offered on the given site. Similarly justified as search ads, sponsored products are considered native to the experience in much the same way as search ads.
* In-Ad (IAB Standard): An In-Ad fits in a standard IAB container found outside the feed, containing "...contextually relevant content within the ad, links to an offsite page, has been sold with a guaranteed placement, and is measured on brand metrics such as interaction and brand lift."
* Custom / can’t be contained: This category is left for the odd ends and ads that do not conform to any of the other content categories.

## Future of Native Advertisements

Native Advertising is one of the fastest growing areas in the online ad world. This can be attributed to 3 simple reasons: -

* Native ads are an effective way to get an advertising message around ad blocking software
* Native ads are proven to have higher levels of engagement than traditional non-native ads
* And perhaps most importantly, for many of the fastest-growing social media applications, like Twitter and Instagram, native advertising is the only way to reach their audiences

Due to these driving forces, Native Advertisement industry is expected to outperform non-native display ads



## What is the future of Native in Microsoft

With the more mainstream use of Native advertisement and RTB, the advertising landscape is changing and with it all the Publishers want to control and optimize their revenue as much as possible.

For Microsoft, its priority lies in creating a marketplace for Native Ads using header bidding. Doing this Microsoft wishes to achieve the following:

1. Simplified and speedy access to Bing, LinkedIn Native Ads Demands
2. Uniform mediated ad services for 1stand 3rdparty Native Ads Networks (AppNexus, Taboola, Outbrain, TripleLift, Media.Net)
3. Centralized place to handle monetization strategy (user targeting, traffic allocation etc.) by leveraging Microsoft Audience and Intent Graph
4. Yield Optimization for O&O properties
5. Full transparency on ads bidding and serving with actionable analytics

This will be done in 3 sprint stating in Q1 2018.

For more details please refer to the document attached below:



## Issues with Native Advertisement

Despite the immense potential that Native advertisement present there are a few challenges present.

A major issues lies in the fact that Native tries to provide the user with localized and custom content but this level of customization hampers scale and thus hitting the ROI

Other issue lies in the user feeling conceited, though customer won’t mind is the ad is providing an interesting story.

## Sources

<https://en.wikipedia.org/wiki/Native_advertising>

<https://www.entrepreneur.com/article/290186>

<http://www.businessinsider.com/native-advertising-is-the-future-of-internet-marketing-strategy-2016-5?IR=T>

<https://www.slideshare.net/tkawaja/content-marketing-31091520?from_action=save>

# Video Advertising

## What is Video Advertising?

The term video advertising encompasses online display advertisements that have video within them, but it is generally accepted that it refers to advertising that occurs before, during and/or after a video stream on the internet.

The advertising units used in this instance are pre-roll, mid-roll, and post-roll and all of these ad units are like the traditional spot advertising you see on television, although often they are "cut-down" to be a shorter version than their TV counterparts if they are run online.

## Different Types of Video Advertisements

According to Interactive Advertising Bureau (IAB) guidelines, there are three types of video ad formats:

* Linear video ads - the ads are presented before, in the middle of, or after the video content is consumed by the user, in very much the same way a TV commercial can play before, during or after the chosen program
* Non-linear video ads - the ads run concurrently with the video content so the users see the ad while viewing the content
* Companion ads - commonly text, display ads, rich media, or skins that wrap around the video experience

## The Future of Video Ads

With the growing consumption of media and information on Mobile platform, mobile devices present a huge opportunity for Video ads.

Mobile video advertising presents many of the same targeting and delivery options as desktop, with two distinct advantages. First, studies from Google and Ipsos have found that mobile video holds more attention and provides additional opportunities for real-time engagement.

Second, 68% of video on mobile devices is non-skippable, according to the Mobile Marketing Association. This means your mobile views are more valuable and present the opportunity for higher completion and click rates.

To take advantage of this opportunity, keep your videos actionable, between 16 and 30 seconds long, and develop content that adapts to different screen sizes. Additionally, coding videos in HTML5 VPAID allows marketers to run interactive pre-roll/mid-roll/post-roll video regardless of device, screen size or most in-application environments.

## What is VPAID?

VPAID stands for video player ad-serving interface definition. It was first introduced by the Interactive Advertising Bureau back in 2012. While it is not new, it is gaining importance in programmatic today because of its viewability benefits and the rise of video header bidding.

VPAID is a script that instructs a video player on what ad to play, the length of the ad, when to surface the ad and where to place the actions: play, pause or whatever it is.

VPAID has two big advantages compared to the standard VAST video script: Interactivity and measurement. “VAST is for your vastly vanilla type of creatives, whereas publishers that adopt VPAID will get paid because it allows their video players to accept more ad types,” said Rick Abell, VP of global publisher development for ad intelligence firm Exponential.

For instance, VPAID allows a viewer to click on a pre-roll to know more about the content. And if a brand wants to serve the same video ad in Boston and New York City, and shows viewers in the two regions two different offers at the end of the ad, it can do so through VPAID tags.

## What is Microsoft doing when it comes to Video Advertisements?

Currently, even though we have separate delivery systems for video and the process is being held differently, Microsoft is adopting the Superauctions platform provided by AppNexus to consolidated the inventory for display and video ads and hold a single auction for them.

This technology enables multiple media types to participate in a single unified auction to drive increased demand for each advertising placement and improve monetization.

"Since implementing multimedia superauctions on MSN inventory globally, we've seen revenue lift of as much as 60% in select markets," said David Carkeek, Principal Program Manager Lead, Microsoft. "The performance, quality and user experience is better than any unified solution we have tested, and allows us to benefit from combined display and video demand to drive superior monetization."

For a more detailed understanding of the Video Advertisement Landscape, please refer to the PDF below:



## Sources

<https://en.wikipedia.org/wiki/Video_advertising>

<https://www.ama.org/publications/MarketingNews/Pages/video-marketing-moves-into-the-future.aspx>

<https://finance.yahoo.com/news/appnexus-launches-multimedia-superauction-technology-140000580.html>

<http://www.businessinsider.in/Online-Video-Advertising-Is-Growing-Many-Times-Faster-Than-TV-Search-And-Most-Other-Digital-Ad-Markets/articleshow/35689866.cms>

<https://digiday.com/media/what-is-vpaid/>

# Global Ad Spending and Dynamics

## What is the current Ad spending scenario?

Based on the Group M’s report of the current Ad landscape, total advertising spend worldwide for 2017 is predicted to be $547 billion, up 4.4% from $524 billion in 2016. The U.S. and China will be responsible for half of the net growth this year and next year

While 2016 was a great year for ad sales in North America, with a $191 billion spend boosted by the Olympic Games and US Election campaigns ($3.5 billion), 2017 will see the region's growth rate slow to 1.8 percent, the most significant market slowdown.

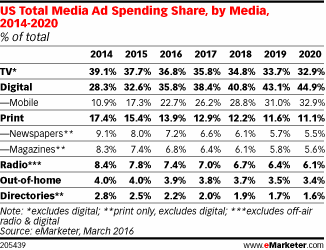
Western Europe will see a noticeable drop in growth in 2017 to 2.4 percent among uncertainty post-Brexit and the general elections in France and Germany, while Central and Eastern Europe will both grow by around 5.6 percent, a similar pace to 2016.

Asia-Pacific is forecast to see a growth rate of 5.4 percent, which is similar to this year's figure. Meanwhile, Latin America's ad spend is set to grow the most, at 6.2 percent, helped by the 2016 Olympic Games and a general economic recovery.

## What is the Ad spend by Channel?

According to eMarketer report, in 2017, TV ad spending will total $72.01 billion, or 35.8% of total media ad spending in the US. Meanwhile, total digital ad spending in 2017 will equal $77.37 billion, or 38.4% of total ad spending, marking the time where digital might probably overtake TV medium.

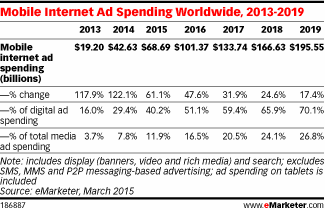
In the long term, TV ad spending will continue to grow by about 2% a year. But by 2020, TV ad spending’s share will drop below one-third of total media ad spending for the first time in the US, with digital capturing close to ~45% of the Ad spend.



Not surprisingly, mobile continues to drive growth within overall digital ad spending as consumers continue to increase engagement with mobile devices for daily activities and content consumption, marketers will further integrate all marketing activities including advertising to the mobile category

## Growth of Mobile spend leading the digital charge

The global Mobile ad landscape growing rapidly, according to eMarketer it will surpass $100 billion in spending and account for more than 50% of all digital ad expenditure for the first time in 2017.



Growth in mobile ad spending is being driven by consumer adoption of mobile devices. Next year, eMarketer estimates, there will be more than 2 billion smartphone users worldwide, over one-quarter of whom will live in China alone. Especially there and in other emerging and developing markets, many consumers are accessing the internet mobile-first and mobile-only, so leading advertisers allocate their digital expenditure to mobile accordingly.

The number of tablet users worldwide, while growing more slowly than the smartphone audience, is still expected to eclipse 1 billion in 2015. The proliferation of these mobile devices across the world is driving the shift in advertising from the desktop to reach these untethered, always-on consumers.

In the short term, the leading global markets, particularly the US and China, will drive mobile ad spending growth. In 2016, US advertisers will spend $40.24 billion to reach consumers on tablets and mobile phones, more than doubling the total from 2014, while those in China will invest $22.14 billion—nearly triple the amount they spent in 2014. Both of these countries will see mobile become a majority of digital ad spending next year.

Rounding out the top five countries, the UK, Japan and Germany also will see significant increases in mobile ad spending next year, but in all three markets, a majority of digital ad spending will be on mobile devices in 2017 for the first time.

While the top five countries will maintain their positions throughout our forecast, there are other markets on the move. Next year, Canada and Australia will surpass South Korea to become the sixth- and seventh-largest mobile ad markets globally, respectively.

By 2018, several of the top growth markets will have made significant gains. That year, Brazil will jump three spots from 2015 to become the ninth-largest mobile ad market globally, and Indonesia will make the largest gain, rising from No. 21 this year to No. 12. Notably, however, despite India’s massive mobile audience, the market will continue to lag in mobile ad spending, failing to eclipse $1 billion by 2018.

## Sources

<https://www.cnbc.com/2016/12/05/global-ad-spend-to-slow-in-2017-while-2016-sales-were-nearly-500bn.html>

<https://www.emarketer.com/Article/Mobile-Ad-Spend-Top-100-Billion-Worldwide-2016-51-of-Digital-Market/1012299>

<http://www.adageindia.in/sponsored-content/vocus/Digital-Share-of-New-Ad-Dollars-to-Reach-77-Next-Year-GroupM-Forecasts/articleshow/55805070.cms>

<http://content.warc.com/hubfs/Global_Adspend_Outlook_2016-2017.pdf?hsCtaTracking=20808ab0-39a9-4136-a10d-5cc42ea2f78c%7Cde56b115-478f-4c07-a820-57e13c80e570>

<https://www.emarketer.com/Article/Digital-Ad-Spending-Surpass-TV-Next-Year/1013671>

# Key players in the Display Marketing Landscape

The Display Advertising LUMAscape –



The display LUMAscape provides an in-depth view of the complexity of the Display landscape and gives a sense of the fragmentation inside the Display marketing landscape. Below are the categories of the stakeholders in the Display marketing:

## Agencies

An advertising agency, often referred to as a creative agency, is a business dedicated to creating, planning, and handling advertising and sometimes other forms of promotion and marketing for its clients. An ad agency is generally independent from the client; it may be an internal department or agency that provides an outside point of view to the effort of selling the client's products or services, or an outside firm. An agency can also handle overall marketing and branding strategies promotions for its clients, which may include sales as well.

Typical ad agency clients include businesses and corporations, non-profit organizations and private agencies. Agencies may be hired to produce television commercials, radio commercials, online advertising, out-of-home advertising, mobile marketing, and AR advertising, as part of an advertising campaign.

On the LUMAscape there are the massive, global holding companies like WPP and Omnicom which can and do handle anything and everything to do with advertising for the biggest brands in the world, as well as smaller operations like MediaSmith, which focuses exclusively on media planning and media buying in digital, or ReachLocal, which is also a strictly digital operation built to service independent, local businesses.

## Agency Trading Desks

According to Forrester Research the description of Agency Trading Desk is as follows:

A centralized, service-based organization that serves as a managed service layer, typically on top of a licensed demand-side platform (DSP) and other audience buying technologies; manages programmatic, bid-based media and audience buying. Works as an agency’s internal “center of excellence,” supporting agency teams wishing to tap into this new buying model on behalf of agency clients.

Agency trading desks have also been described as:

* A dynamic way to purchase audiences, allowing media to be purchased in real time rather than from pre-procured inventory
* Takes search (an auction based model) and applies that to display media; in a real time fashion like a stock exchange
* An audience-buying company
* A platform that uses data and technology to help advertisers more effectively purchase audiences at scale across digital media

Some agencies have built their own technology; WPP’s Xaxis desk would be a prime example, while others have licensed technology from 3rd party DSPs.  Many ATDs are wholly owned and aligned with large agency holding companies, which is why you see those lines on the LUMAscape.  WPP owns Xaxis, Omnicom owns Accuen, Publicis owns Vivaki, and so forth.  That said, agency trading desks can be independent companies and still fit the definition.  Accordant Media and the Trade Desk are examples of independent ATDs.

## Creative Optimization Agencies

Dynamic creative optimization allows marketers to put the right message in front of the right consumer.  It allows them to differentiate and custom-tailor ad creative to people using data, and it is extremely effective at increasing a campaign’s performance, almost to the point of suspicion.  Many case studies show an increase to CTR well above 100% vs. non-personalized creative, and decreases in cost metrics of 60 – 70%.

From a technology standpoint, DCO companies allow marketers to break an ad apart into individual pieces, and create different versions of those pieces for different audiences.  Each ad uses a template of one to four dynamic elements, and can rotate in different versions of each element.  For example, take the examples below, both from the Google-owned Teracent.  In both cases the top versions ads were not optimized with data, while the lower versions were. I’ve put the likely configuration of the ad template below the optimized versions of the ads.

Companies like Dappr and Teracent were quickly snapped up (by Yahoo! and Google, respectively), but the ones that are still independent, such as Certona, often optimize not only advertising, but landing pages and product recommendations on the marketers’ site as well.  Others like AdReady help a marketer take a few common images and text assets and quickly build out a version in every standard IAB format.

## Retargeting

Behavioral retargeting (also known as behavioral remarketing, or simply, retargeting) is a form of online targeted advertising by which online advertising is targeted to consumers based on their previous Internet actions. Retargeting tags online users by including a pixel within the target webpage or email, which sets a cookie in the user's browser. Once the cookie is set, the advertiser is able to show display ads to that user elsewhere on the internet via an ad exchange.

While all retargeting depends on setting cookies in a user's browser, there are several different methods of doing this:

* Site retargeting
* Search retargeting
* Link retargeting
* Email retargeting

Some companies, like Criteo, are full-service experts in optimization and have large global operations to support the largest marketers, and often preferential access to inventory given their scale and spend.  Other companies like Magnetic built their name on search retargeting, or TellApart specialize in predictive modeling to find new customers based on what they can see from existing customers.

## Ad Servers (Marketer Side)

An ad server is a Web server that stores advertising content used in online marketing and delivers that content onto various digital platforms such as Websites, social media outlets and mobile apps. An ad server is merely the technology in which the advertising material is stored and is the means of distributing that material into appropriate advertising slots online. Ad serving technology companies provide software to Websites and advertising companies to serve ads, count them, choose the ads that will make the Web site or advertiser the most money and monitor the progress of different online advertising campaigns. The purpose of ad serving is to deliver ads to users, to manage the advertising space of a Web site and, in the case of third party ad servers, to provide an independent counting and tracking system for advertisers/marketers.

Advertisers and marketers use a centralized ad server that enables them to draw progress reports on demand and update their creative content in one place, rather than using individual publisher ad servers in which they will have to manage content across multiple servers with different publishers. Without this centralized hub which controls advertisers' rotation and distribution of content across the Web, there becomes issues around tracking and management of advertising material. If an advertiser had to make contact with each individual publisher whose ad server they are using, this would mean multiple sets of data to track and would also mean they need to update their creative content for each individual channel. This provides less-accurate, less-timely, and ultimately inconvenient results for advertisers.

DoubleClick’s DART for Advertisers is the leader here, but other players in the market like PointRoll, EyeWonder, and Pictela specialize in serving rich media creative assets, which typically have more complicated tracking mechanisms in place.  These systems are usually referred to as 4th party ad servers, especially by publishers because they are critical for ads to serve, but not the system that counts for billing purposes.

## Verification and Privacy

There’s a wide variety of companies included in this section of the LUMAscape – DoubleVerify & AdSafe tend to align more with advertisers looking to ensure the publisher has targeted their ad correctly and is delivering it on brand safe inventory, and can even prevent the ad from serving if the page doesn’t pass muster.

Other companies like Ad-Juster help automate publisher billing processes that require publishers to pull reports from many agency systems on a regular basis to measure campaign pacing and generate final invoices and is the only company in the space that handles that service.   Still others like the Media Trust and Adometry specialize in scanning ad tags for malware and malicious scripts that harm users, validate advertiser compliance to publisher ad specs, and even monitor for data collection tags. And finally, companies like TRUSTe and Evidon provide services to help advertisers and publishers alike give consumers notice on when they are being shown ads based on behavioral tracking, as well as the technology behind opt-out solutions to stay in compliance with NAI standards and privacy policies.

## Demand Side Platforms (DSPs)

A demand-side platform (DSP) is a system that allows buyers of digital advertising inventory to manage multiple ad exchange and data exchange accounts through one interface. Real-time bidding for displaying online advertising takes place within the ad exchanges, and by utilizing a DSP, marketers can manage their bids for the banners and the pricing for the data that they are layering on to target their audiences. Much like Paid Search, using DSPs allows users to optimize based on set Key Performance Indicators such as effective Cost per Click (eCPC), and effective Cost per Action (eCPA).

DSPs are unique because they incorporate many of the facets previously offered by advertising networks, such as wide access to inventory and vertical and lateral targeting, with the ability to serve ads, real-time bid on ads, track the ads, and optimize. This is all kept within one interface which creates a unique opportunity for advertisers to truly control and maximize the impact of their ads. The sophistication of the level of detail that can be tracked by DSPs is increasing, including frequency information, multiple forms of rich media ads, and some video metrics. Many third parties are integrating with DSPs to provide better tracking.

Most of the companies (TURN, MediaMath, DataXu) provide these buying services across many types of media, including display, mobile, and video, though their heritage tends to be in display. Other companies like Efficient Frontier, now part of Adobe, specialize in programmatic buying across social platforms (such as Facebook).  Nanigans would be the leading independent company for programmatic media buying through social channels today, and then there are others that specialize in video (TubeMogul, Videology), mobile (Adelphic, Tapad), or even native advertising (Visible).

## Media Planning and Attribution

Media Planning entails sourcing and selecting optimal media platforms for a client's brand or product to use. The job of media planning is to determine the best combination of media to achieve the marketing campaign objectives.

In the process of planning, the media planner needs to answer questions such as:

* How many of the audience can be reached through the various media?
* On which media (and ad vehicles) should the ads be placed?
* How frequent should the ads be placed?
* How much money should be spent in each medium?

Choosing which media or type of advertising to use can be especially challenging for small firms with limited budgets and know-how. Large-market television and newspapers are often too expensive for a company that services only a small area (although local newspapers can be used). Magazines, unless local, usually cover too much territory to be cost-efficient for a small firm, although some national publications offer regional or city editions.

There’s been an ongoing argument in digital media for a long time about how to allocate credit for online conversions if the consumer saw an ad in more than one place.  A simple model is called “last-touch attribution” which gives 100% credit to the last ad a consumer saw, which is often a search ad; but many media companies (especially those that serve the non-search market) would say that the only reason a consumer was searching in the first place was because they were aware of the company or product, which was most likely driven by a display ad.

Dividing the credit in some fractional manner (called “multi-touch attribution” to many different channels is complicated, but theoretically leads the marketer towards smarter campaign optimizations.  C3 Metrics, Korrelate, and Clearsaleing (now part of eBay) are all in this business, while others like Pulsepoint can handle both the analytics as well as the optimized media buying, and still others like Networked Insights specialize in merging data from multiple sources to feed predictive models and provide broader consumer insights.

## Tag Management

A tag management system is designed to help manage the lifecycle of e-marketing tags (sometimes referred to as tracking pixels or web beacons), which are used to integrate third-party software into digital properties.

The landscape has gotten so fragmented, and publishers and advertisers are both working with so many technology vendors that they often need a technology to manage the technology(!), and that’s the service tag management provides.  To be a little more specific, technology partners often require some kind of tag on page to work – that’s true of data management platforms, retargeting platforms, analytics vendors, and more.  But making changes to the source code of a webpage is often a non-trivial exercise at a big company – it can take a long time and involve a lot of people.

Not only that, but many tags only need to fire on certain pages or certain parts of the site, and it’s not easy to do that.  So, tag management acts like an ad server for vendor tags, and allow both publishers and marketers to control when vendor tags serve, how often they should serve, in what order of priority, and for how long.  In this way the tag management system is the only technology that the IT team actually has to place in the source code, and from there the ad operations group within the company can place or remove whatever they want.

## Measurement and Analytics

There are really two distinct sets of companies in this box, and most in the digital space don’t think of Analytics platforms as part of the ad tech industry, even though they often can play a role for marketers.  Omniture, CoreMetrics, and Webtrends are historically the system of record for tracking engagement with a site – what pages are users visiting most, how much time do they spend on site, how do they enter the site?

Their interaction with ad technology is typically when a marketer embeds a pixel tracker from their analytics software into their ad tag to create a unique cohort they can analyze.  Omniture can also feed site engagement data back into creative optimization for marketers.  Far more common in the industry is interaction with comScore and Nielsen, which are measurement behemoths with a long heritage in traditional media like TV.  Those companies provide a host of solutions, from broad rankings of publisher reach and frequency to assist marketers in the media buying process, to more specialized services like calculating demographic trends of who saw their ads, especially in the video space.

## Ad Exchanges

An ad exchange is a technology platform that facilitates the buying and selling of media advertising inventory from multiple ad networks. Prices for the inventory are determined through bidding. The approach is technology-driven as opposed to the historical approach of negotiating price on media inventory. This represents a field beyond ad networks as defined by the Interactive Advertising Bureau (IAB), and by advertising trade publications such as Advertising Age.

The major ad exchanges include:

* AppNexus
* AOL's Marketplace
* Microsoft Ad Exchange
* OpenX (company)
* Rubicon Project Exchange
* Smaato
* AdECN, which is owned and was purchased by Microsoft in August, 2007; Microsoft switched from AdECN to AppNexus three years later, retiring the AdECN platform
* DoubleClick, was acquired by Google in 2008

## DMPs (Data Management Platforms) and Data Aggregators

### DMPs (Data Management Platforms)

A data management platform is software that houses audience and campaign from all kinds of information sources. In digital advertising, these sources include publisher’s websites and apps on which advertisers buy advertising. A DMP offers a central location for marketers to access and manage data like mobile identifiers and cookie IDs to create targeting segments for their digital advertising campaigns.

Publishers also often use DMPs to house data about their users. They can then use that information to package audience segments of their own to sell to advertisers.

A DMP enables advertisers to build audience segments — criteria can include customer information, demographics, household income, past browsing behavior, purchasing information, location, device and so on — and then it can analyze how those segments performed. Based on that analysis, the campaigns can be continually optimized to reach those audience segments that perform best.

### Data Aggregators

A data aggregator is an organization that collects and compiles data from various sources, often offering results or access for resale. There are three primary types of data aggregators:

* Offline Data Aggregators: Generally establishing an interest in managing data from sources prior to the proliferation of the internet, companies like Acxiom and ChoicePoint have offered data acquired through both public record and private sources (like customer loyalty cards) for sale. This data is primarily sold to advertisers at the ZIP or ZIP+4 level, in order to maintain anonymity. Increasingly, the offline data is migrated for use in online campaign targeting.
* Online Data Aggregators: Most often called Data Management Platforms (DMPs), companies like Lotame and BlueKai establish relationships with a large number of websites in order to gain a big-picture view of cookied users that would be inaccessible to individual sites.
* Personal Data Aggregators: Used primarily for either investigation of an individual or reputation management, companies like Spokeo and Chi.mp allow information for an individual to be collected in one place. This has little use for digital advertising.

Data products are cohorts, or segments of users the vendor creates on their own by observing user behavior across a network of sites that host their tag, or by combining multiple 3rd party datasets they might purchase into a proprietary product, which they can then sell to anyone whether they are on their platform or not.  Some, like BlueKai and Lotame, provide both data management platform software as well as data products, while others like Krux, Demdex (now part of Adobe), and X+1 strictly provide the technology.  Some like Exelate (now part of Nielsen) strictly provide data products and do not offer the platform itself as a service.  Still others like Peer39 and Proximic specialize in semantic data vs. behavioral data

## Data Suppliers

They are like Data aggregators but their data is from offline sources. Many distribute their data through 3rd party DMPs, though in recent years many have also built their own in-house DMP technology as well. The value these companies bring is in aggregating, scoring, and normalizing large public and private datasets that cover core demographic traits.  Things like age, car and home ownership, presence of children, political affiliation are sourced from strictly offline datasets and might require tying multiple datasets together to get to the truth.  For example, if you buy a house, a data supplier could know that through public property registration records, which may or may not be digitized. Often, data suppliers have to merge many different sources for a single data point to get national coverage.

The other major dataset these large suppliers have access to loyalty card data, which they aggregate and anonymize.  If you wanted to target people who are brand loyal to Tide, that data is coming from grocery loyalty cards, which the data suppliers tie to cookies through an offline data match process.  Acxiom, Experian, V12, and SymphonyIRI are in that business, while companies like BlueCava are more specialized in providing identity maps across devices.  They don’t actually own data, but activate others’ data across channels.  For example, if a marketers wanted to target data they had connected to a cookie over in a mobile environment, they could use BlueCava to transfer their cookie-based dataset to a non-cookie identifier in a privacy compliant way.

## Ad Network

An online advertising network or ad network is a company that connects advertisers to web sites that want to host advertisements. The key function of an ad network is aggregation of ad space supply from publishers and matching it with advertiser demand. The fundamental difference between traditional media ad networks and online ad networks is that online ad networks use a central ad server to deliver advertisements to consumers, which enables targeting, tracking and reporting of impressions in ways not possible with analog media alternatives.

Ad Networks can aggregate the ad space in many ways. Few which are mentioned are: -

* **Horizontal:** In the horizontal category it’s all about players that can offer massive reach across a wide range of content.  The big portals like Yahoo!, Microsoft, AOL, and Google are here. Most companies in this space will move towards another bucket; the big players will either become more like SSPs (like Casale), or migrate more toward the performance category (like Tribal Fusion) or rich media category (like Undertone)
* **Video/Rich Media:** These networks specialize in supporting a specific kind of creative, which is more difficult to do in a programmatic channel than you might expect.  Companies like TubeMogul, YuMe, Videology, and Brightroll specialize in the video space, both in terms of securing inventory on video content, as well as inventory that will accept pre-roll units as interstitials or overlays.  The next frontier here is certainly connected TV (think Roku or other internet connected TVs).  Others in the rich media space, like SAY Media, are more about running cross screen campaigns that can distribute high-impact creative on responsive, highly designed websites, and / or simultaneously across many different media.
* **Vertical/Custom:** These networks tend to specialize in a particular kind of vertical, and tend to represent publishers with a specific kind of content, the idea being that the network can bring relevant ads to small publishers that can’t call on big brands themselves, and cheaper supply to big brands that can’t operationalize a buy for a small amount of money site by site.  Companies like Glam are all about fashion & beauty content, Travora specializes in travel content, Martini Media focuses on wealthy consumers, Gourmet Ads aggregates food & dining content
* **Targeted / AMP (Audience Management Platforms):** AMPs are essentially platforms that combine the features of DMPs and DSPs.  This makes a lot of sense, as unique data segments are at the heart of many programmatic media buying campaigns.  Marketers who want to cherry-pick at scale needed a solution like the DSP to buy media on an impression basis, but they also needed a DMP to house the segment to begin with.  So the very first thing marketers had to do was integrate their DMP with their DSP, an inconvenient barrier to get started in RTB.  So it makes perfect sense for DMPs to develop bidders, and bidders to develop DMPs. Companies like Collective Media and Audience Science are good examples. In terms of targeted networks, companies like OwnerIQ and RocketFuel collect their own proprietary datasets, which they use to optimize media campaigns as a bidder
* **Performance:** Performance networks typically have to have real optimization technology behind them to stay cost competitive with DSPs, and likely look more like DSPs from a technical point of view in terms of how they buy media
* **Mobile:** Mobile ad networks perform the same function as any ad network, just with a specialty in working with mobile formats and inventory. Getting something like a rich media ad to work across iOS and Android devices, in app and mobile web environments, and across many different screen resolutions is no small feat. The publisher set is also quite different in mobile than desktop; some of the largest publishers in the mobile space are gaming and social applications that don’t even have a presence in desktop media. Other challenges, like how to do audience targeting presents unique challenges due to the limitations of cookie based tracking.  Publishers with fantastic datasets in desktop often have no way to make it available on their mobile properties.  Mobile has also been an area with a lot of deal making recently; consumer traffic has seen a huge shift, and many of the largest ad tech businesses are looking for ways to branch into new channels quickly, and without having to build mobile expertise from scratch internally

## Media Management Systems & Operations

This category largely represents order management system software.  On the buy side, DDS (Donavan Data Systems) and MediaBank were both marketer facing order management and billing systems which merged and now do the same thing under the MediaOcean brand.  Bionic and Telmar are in a similar business, offering media planning software.  Operative (which acquired Solbright in 2010) is also an order management system, but for the publisher side of the business (as is FatTail, which for some reason is under the Publishers Tools section). Order management systems for both sides track contracted rates, sales pipelines, contracted revenue, and produce dashboards and basic reporting for the sales organization.  Theorem provides a host of managed services for the publisher side of the business, and is often thought of for extra help in trafficking campaigns.

## Sharing Tools / Social Tools

From an ad technology perspective, Facebook and Twitter are important tools on both the buy and sell side, which make them interesting hybrid players.  Facebook runs their own ad exchange, but just for their own inventory.  They let buyers buy media using Facebook data and essentially invented the native ad form factor, but they also enable buyers and sellers to host a presence on their platform, effectively publishing content within the walls of Facebook. Twitter is obviously similar in a lot of ways, just smaller still trying to figure out what ad products it will offer to the market.

Gigya is an engagement platform, because it helps publishers and marketers integrate with social registration (like Facebook Login), and can consolidate identity data based on those user logins from lots of different platforms which can then be used for content recommendations, tailored offers, and other services that help personalize the user experience.  Addthis and ShareThis are the services that host site widgets that let you easily share content to lots of different social networks, but then track and segment those users, and help publishers and advertisers better understand how users share their content.  They also sell targeting against “influencer” audiences built on the user behavior they capture.

Tynt’s service is the technology that appends “read more” links automatically when you copy & paste text from a website, enhancing SEO and traffic, though in a way not always well received by consumers.

## Supply Side Platforms (SSPs)

A supply-side platform or sell-side platform (SSP) is a technology platform to enable web publishers to manage their advertising space inventory, fill it with ads, and receive revenue. Many of the larger web publishers of the world use a supply-side platform to automate and optimize the selling of their online media space.

A supply-side platform interfaces on the publisher side to advertising networks and exchanges, which in turn interface to demand-side platforms (DSP) on the advertiser side.

This system allows advertisers to put online advertising before a selected target audience. SSPs send potential impressions into ad exchanges, where DSPs purchase them on marketers’ behalf, depending on specific targeting attributes. By offering impressions to as many potential buyers as possible publishers can maximize the revenue.

Supply-side platforms are often integrated into the structure of advertising and ad serving companies, as well as ad exchanges that work with both publishers (supply side) and advertisers (demand side):

* AudioMax AdsWizz
* ironSource
* Adform
* OpenX
* AppNexus
* Smaato
* C1X

## Publisher Tools

These are the companies which help the Publisher in selling out the Inventory and thus operate in various aspects.

Yieldex (now part of AppNexus) performs inventory forecasting, pricing recommendations, and cross platform revenue analytics.  ShinyAds and iSocket (both acquired by Rubicon), and AdSlot are the other major solutions in automated guaranteed space, though BuySellAds has a similar service designed for smaller websites to package and sell inventory on a guaranteed basis.

FatTail is more of a publisher side order management system, similar to Operative, which is in the Media Management Systems category, while Lijit and Sovrn are ad networks that provided publishers dashboards and were designed for smaller, longer tail sites. Taboola and Outbrain are in the hot content recommendation space, which publishers can use to place native ad-like sponsored listings on other sites to drive traffic back to their properties, or can host others’ sponsored listing to monetize their websites with a different kind of ad unit.  Yieldbot runs a unique kind of ad exchange which semantically categorizes publisher webpages and makes those signals available for buyers to target.  Maxifier (acquired by Cxense) helps publishers programmatically optimize guaranteed campaigns for performance.

## Ad Servers (Publishers)

As mentioned above Publishers and Advertisers have Ad server which work on the same mechanism but for Publishers, they have separate ad servers to communicate advertising material across their domains only. This enables convenience for the publisher, as they will have access only to the advertising content they require for their publication rather than sort through an ad server containing all the advertising content in which Marketers/Advertisers are using.

DoubleClick is without a doubt the preferred platform of both large and small publishers. ADTECH is especially strong in the EU, and OpenX and OAS (now owned by Appnexus) are strong Tier-2 ad servers, meaning they don’t have the full set of features you’d expect from DFP, but are solid solutions for publishers with less complex requirements.  LiveIntent is a company you could argue is mis-categorized here and would be more accurately placed in the SSP space as it specializes in monetizing publisher email inventory through an exchange.  Adzerk is the newest pure play ad server in market, and has made some impressive deals with digital native publishers thanks to its tech savvy approach of exposing the underlying services of an ad server through a set of APIs.

## Sources

<http://www.lumapartners.com/lumascapes/display-ad-tech-lumascape/>

<https://adexchanger.com/Agency_Trading_White_Paper.pdf>

<http://www.adopsinsider.com/ad-ops-basics/dynamic-creative-optimization-where-online-data-meets-advertising-creative/>

<https://en.wikipedia.org/wiki/Ad_serving>

<https://en.wikipedia.org/wiki/Behavioral_retargeting>

<https://en.wikipedia.org/wiki/Demand-side_platform>

<https://en.wikipedia.org/wiki/Tag_management_system>

<https://en.wikipedia.org/wiki/Ad_exchange>

<https://martechtoday.com/what-is-dmp-martech-landscape-174298>

<https://wiki.iab.com/index.php/Data_Aggregator>

<https://en.wikipedia.org/wiki/Advertising_network>

<https://en.wikipedia.org/wiki/Supply-side_platform>

<http://www.liesdamnedlies.com/>

<http://www.adopsinsider.com/ad-ops-basics/the-display-lumascape-explained/>

# Standard Ad Sizes and Formats

As the internet is very huge to completely regularize it, thus IAB provides guidelines to incorporate some structure to the Marketing Landscape.

These guidelines are comprehensive recommendations of advertising experiences across diverse digital landscape including websites, mobile apps, social media, communication, and messaging experiences as well as new digital experiences like virtual reality and augmented reality.

The IAB New Standard Ad Unit Portfolio (“IAB New Ad Portfolio”) is comprised of display ads, native ads, and new content experiences like emoji ads, 360-degree image and video ads, virtual reality ads, and augmented reality ads.

The display ad guidelines have been updated to incorporate LEAN principles of lightweight, encrypted, Ad choices supported, and non-invasive advertising, within all of its mobile, display, video, and native ad formats. The new ad units recognize consumer’s diverse media consumption, especially with touch screen mobile devices, and introduces flexible ad sizing so the ads can adjust to various device screen sizes.

The main focus of the new ad portfolio is to improve the consumer’s advertising experience and maximize the publisher page load performance. This is delivered by two overarching updates in the new ad portfolio:

1. LEAN principles: Lightweight file weight minimizes the ad load during initial page load and non-invasive advertising guidance creates a better user experience
2. Flexible ad sizing: Ad units are defined by aspect ratios and minimum and maximum size range so the ad can adjust based on the screen size it is being displayed on

The in-depth guidelines for each format are given in the document below:

