# Decision Manager:
Your Inventory. Your Rules.

PubMatic

This white paper addresses an important topic within the digital marketing industry. In order to fully understand the contents of this white paper, it is important to clarify some key industry nomenclature.

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Waterfall

The methodology by which a publisher's ad server calls on or requests all available demand sources. Demand sources are ranked sequentially, most often by publisher or ad server preference. The ad server will then call on each demand source one-by-one starting with the demand source that was assigned the highest priority and continuing down the order until a demand source can fill the ad impression. This cascading down in a sequential order is what gave rise to the term "waterfall."

Waterfall Prioritization

Priority 1

Priority 2

Priority 3

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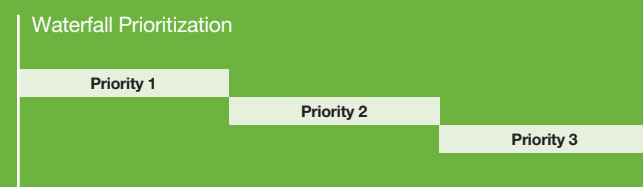
Header Bidding

The placing of a JavaScript tag (i.e. website code) within the header section of a publisher's website called ahead of the ad server tag. This tag is known as a "header tag." When a user comes to the publisher website, the header tag will call on its demand source. That demand source will try to find a possible ad impression and update the publisher ad server with real-time impression data, such as the predicted eCPM for that ad.

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Wrapper Tag

A single tag that encompasses multiple header tags. Publishers often implement wrapper tags to save engineering resources from having to implement individual header tags for different demand sources.

Website

Header Tags

Ad

Wrapper Tags

Header Tags   Header Tags
Header Tags   Header Tags

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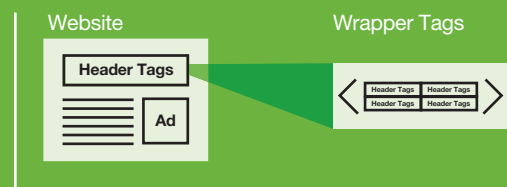
Campaign

An organized course of action to promote a brand with a single theme. Campaign themes may focus on certain media channels, segments of the population or specific products, brands or services.

Imagine a waterfall ebbing and flowing down a ravine. As the current passes each crevasse, water either trickles or violently pours down depending on the size and slope of downward momentum.

Traditional media buying often works in this manner. A pool of one publisher's ad inventory starts at the "top" of the prioritization, and demand-side buyers (e.g. advertisers, agencies, demand-side platforms, etc.) submit bids of price and volume, according to their buying criteria. If a certain buyer's bid is not available, then inventory will trickle to the next buyer. While, logically, this is efficient—in practice, there are glaring inefficiencies. Higher-priority, large volume buyers tend to have first access to the highest-quality inventory, while other buyers are left with… well… the "leftovers."

If we look back, this "waterfalling" of demand sources developed because ad serving technology was created at a time when a publisher's primary demand sources were direct-sold campaigns.

Campaigns were negotiated between publishers' sales team and media buyers, which meant a publisher had complete control and transparency into the types of ads that would run, campaign duration, and the expected revenue publishers could expect from campaigns. In this world, it was easier for a publisher to be able to rank the different campaigns and assign priority to them.

Years later, many technology providers sought to solve challenges around the waterfall tactic by providing "mediation" capabilities between supply and demand sources. This gave rise to algorithmic-driven supply-side platforms (SSPs) and demand-side platforms (DSPs). As indirect sales channels driven by technology (e.g. programmatic channels) began to proliferate, waterfall demand prioritization became far less effective and transparent.

Not only did publishers have to manage a greater number of demand sources, but the waterfall framework at the heart of these new demand sources did not allow as much control or transparency as direct sales campaigns. Publishers no longer knew the specific ad that would come from indirect channels, nor did they know the exact amount of revenue the media buyer would be willing to pay to place that ad. The growing scale of inventory generated by the rise in digital media consumption made prioritizing among demand sources far more challenging.

Many third-party solutions have set out to solve for the efficiency and control issues in waterfalling, which often lead to lost revenue. However, despite the technology advancements in the waterfall tactic, publishers are still grappling with three key challenges:

1

Waterfalls Lead to a Loss of Publisher Revenue

The waterfall method allocates demand by allowing the first available demand source in the sequence to fill the impression opportunity, even if a later demand source in the waterfall sequence could have provided a higher CPM or yield. This results in a loss of publisher revenue.

2

Waterfalls Offers Minimal Publisher Control and Transparency

Traditional publisher ad servers that utilize waterfalls lack monetization controls and insight into inventory management. Publishers using these solutions are not able to manage inventory effectively at scale, nor gain understanding into which demand sources are most profitable. An example of this can be seen with the minimal controls that come with Google's Enhanced Dynamic Allocation (EDA) product, which will be discussed later in this paper.

3

Improvements to Waterfall Frameworks Take Too Much Time to Implement

While solutions exist to solve for pain points in waterfalling, most publishers have limited technical and operational resources. Implementing these new solutions to solve for new challenges can be both technically prohibitive and time consuming.

"We're working with publishers to identify what that loss [from using waterfalls] looks like, and in some cases it's colossal…as much as 50%."

—Ed Thomas, Head of Audience for Skimlinks

PubMatic's Decision Manager, a leading header bidding solution, solves for key challenges around inventory management, demand source transparency and monetization insights, and serves as a holistic inventory management and ad serving decisioning platform.

After a simple implementation of a header tag, the result removes the silos and barriers created by legacy traditional media buying methods, allowing publishers to find the higher CPM or higher yield on impression opportunities, to increase monetization.

While Decision Manager enhances capabilities for publishers, the product also benefits demand sources or media buyers (such as advertisers, agencies and demand-side platforms) in several key ways. First, with a header bidding solution in place, buyers can have access to larger pools of inventory, as the waterfall method prioritizes certain buyers over others, excluding many buyers from full access. Second, and related to opening access to inventory, buyers in a header bidding environment can have access to high-quality, direct-sold inventory—which might otherwise be unavailable in a waterfall. Third, header bidding provides buyers with a more transparent buying environment. Rather than bidding through supply partners, buyers can engage directly with a publisher's inventory, placing bids on impressions that are more targeted and relevant for the consumer.

Increasing global mobile media consumption has also made mobile advertising a bigger priority for publishers. PubMatic's Q3 2015 Quarterly Mobile Index (QMI) report, a quarterly analysis of PubMatic's global mobile platform data, shows double-digit, year-over-year increases in mobile web ad inventory price (+30% year-over-year growth in CPMs) and volume (+24% year-over-year growth in monetized mobile impressions). With this greater publisher emphasis on mobile, Decision Manager was developed for both desktop display and mobile web. PubMatic recommends that app support should be run through a server-to-server solution to reduce latency for on-the-go mobile users whom might be experiencing bandwidth limitations.

Since an ad server is still needed to work with a header bidding solution, Decision Manager was initially designed to be compatible with Google's DoubleClick for Publishers (DFP) ad server—and is now also compatible with AOL's ADTECH ad server. Google has been reportedly testing a header bidding solution within DFP, called "DFP First Look," but it remains to be seen if that solution can effectively solve for the challenges in waterfalls around monetization, demand transparency and reporting. What might be more important in this announcement is that the move by Google underscores the value and importance of header bidding.

While compatibility with DFP is important for those publishers using that ad server, publishers' ability to open up their sites to a full breadth of demand sources—to be able to increase revenue—is of greater importance. From a technical perspective, two products within DFP, Dynamic Allocation (DA) and Enhanced Dynamic Allocation (EDA) are typically implemented to increase the number of ad serving opportunities accessible to Google's Ad Exchange (AdX) programmatic marketplace and AdWords. However, DA and EDA often reprioritize demand to AdX, limiting the publisher's ability to identify and solicit the highest possible bidder, including a broader set of indirect sources, for each and every impression.

When a publisher first integrates with DFP, it must establish priorities among its different demand sources. These demand sources may include the publisher's direct-sold campaigns or supply-side platform (SSP) partners, such as PubMatic. Through historic analysis of average CPMs from each of these demand sources, a publisher then ranks each of them in a sequential hierarchy. Each ranked demand source is considered a line item within DFP. A line item states the specifications of that particular demand source, which might include targeting parameters, such as geographic or demographic data, or pacing parameters on how often the publisher should deliver an ad. Each of these line items is ranked with a number and then broken out into subgroups according to how the publisher prioritizes them. For example, the group containing the most important and valuable line items, often called the "Sponsorship" group in DFP, is sequentially grouped together (Figure 1). The next group of line items lower in priority than those in the Sponsorship group, known in DFP as the "Standard" group, is then grouped together, and this continues until all line items have been placed in a subgroup.

FIGURE 1
Standard Waterfall Prioritization with DFP
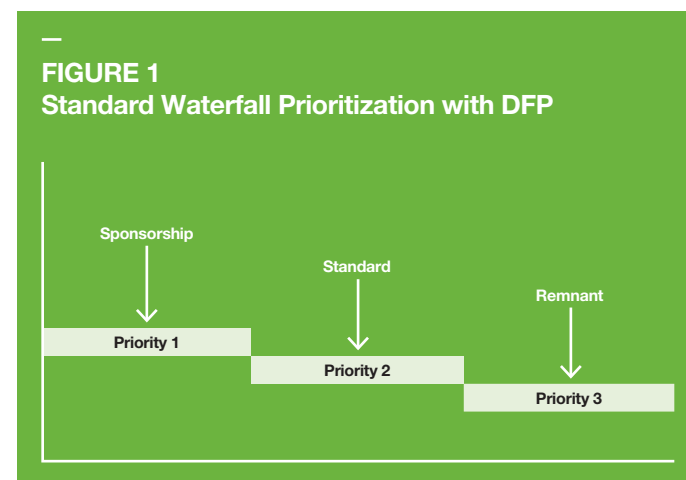
When an ad impression opportunity occurs, DFP will move from one line item down to another starting with the demand source that has been ranked with the highest priority and with the highest subgroup. The first demand source that elects to fill that impression opportunity will serve the ad.

By implementing DA and EDA, Google has enabled an updated inventory allocation approach that does not adhere strictly to this waterfalling method. Figure 2 below depicts what occurs when EDA is enabled in DFP.

FIGURE 2
Modified Waterfall with EDA
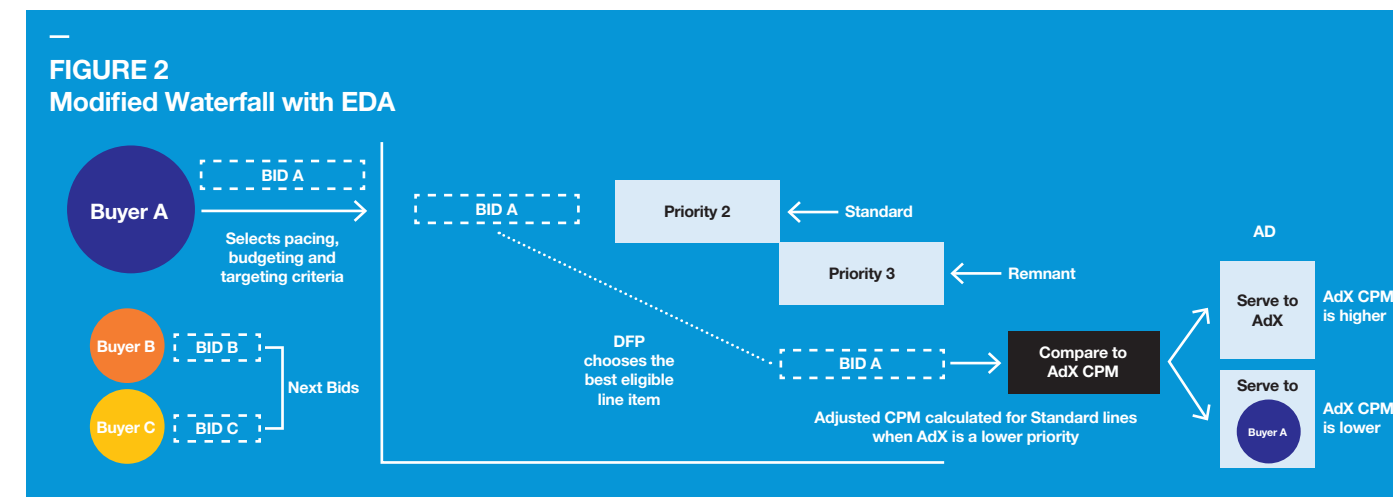
As seen in Figure 2, EDA only serves to other demand sources after comparing to AdX CPMs. This limits the number of impression opportunities to all demand sources and could increase inventory availability to AdX.

While EDA may be effective for many publishers, it favors AdX, which reduces the competition on a publisher's inventory. This creates inefficiencies in yield monetization in a couple of significant ways:

1

AdX Gets First-Look and Right to Win

EDA could apply to all inventory and impressions where the selected "Bid A" is at Standard or lower priority. Essentially, AdX gets a chance to win even when Bid A is from a buyer with a higher priority line item than AdX.

2

Different Rules for Standard and Remnant Inventory

The winning rules are more complex. AdX needs to beat the adjusted CPM of Bid A in such cases. Adjusted CPM is a value that is computed based on Bid A's pacing, priority, CPM and historical bid data for Standard lines. For Remnant lines, AdX needs to beat the historical average CPM value. If Ad Exchange offers a higher CPM than the adjusted CPM for Standard lines or maximum eCPM of eligible remnant lines (which are calculated using historical average in a traditional setup), then AdX wins.

Dynamic Allocation is more restrictive, as it applies to line items that are equal or lower priority than the AdX line item. AdX is also able to submit a real-time bid with EDA, so historical CPMs can be matched in real-time.

A couple of unique challenges arise from this setup with EDA. Firstly, AdX is positioned to win bids because EDA privileges them with the last look (something not available to any other source). This could reduce competition dramatically, as a high bid that could be potentially sourced from other programmatic sources would not be available. In simple economic terms, a lack of competition within a marketplace leads to suboptimal levels of price and quantity.

Secondly, and perhaps more importantly, this platform leads to a lack of transparency in the bidding process. Google's access to publisher data further complicates this decisioning process.

PubMatic's Decision Manager offers two options (Standard and Premium) that solve for the issues around traditional waterfall buying frameworks and result in higher monetization for publishers.

Decision Manager Standard enables programmatic demand source selection based on real-time prices that are passed to DFP. This is accomplished by adding a header tag to the publisher's web page and creating multiple line items in DFP that have a range of prices to accurately reflect the dynamic nature of RTB bidding—instead of using a single line item with an average bid. Technically, PubMatic's header tag performs a pre-auction and uses key-value pairs to include a real-time bid in the ad impression call going to DFP. By using a pre-auction, PubMatic can inform DFP of the true real-time bid it can offer throughout the DFP priority stack and among different priority levels. This allows the publisher to make the best decision on which demand source will serve the ad, based on true real-time bid data from PubMatic. AdX can still bid higher than the CPM of this line item, but it now has to beat the more accurate, real-time market price rather than a static historic average price.

Decision Manager Premium works similarly to Decision Manager Standard with a key distinction. Decision Manager Premium allows both direct and indirect demand channels to compete for a publisher's inventory. This means that a publisher can integrate direct-sold inventory with all programmatic inventory in the same single header tag, for truly holistic management of its inventory. This is particularly beneficial to publishers when indirect demand channels can offer a higher CPM than direct channels, often improving average CPMs across the board. This capability allows Decision Manager to also work across priority ranges in a way that is functionally similar to EDA. PubMatic's algorithm accounts for a directly sold line item's pacing, CPM, flight dates (i.e. when an ad is scheduled to run) and publisher monetization goals to increase yield for the publisher. Decision Manager Premium also provides extra controls and visibility to the publisher in terms of determining how the direct sold campaign is pacing before an indirect channel can compete.

PubMatic's dedication to best-in-class product development sets Decision Manager apart from other header bidding solutions in the industry. Decision Manager is one of the only holistic inventory management and ad serving decisioning platform for all sales channels. Three key benefits set Decision Manager apart from other similar offerings in the market:

1

Optimization Between Direct and Indirect Sales

Decision Manager accounts for the publisher's direct and indirect sales channels. When appropriate, Decision Manager can choose an indirect demand source over a direct-sold campaign if the indirect source can offer a higher bid and does not compromise the proper completion of the direct-sold campaign, which might have predetermined objectives that cannot be changed.

2

Consolidated Reporting

Because Decision Manager is able to look at both direct and indirect demand channels, it provides a complete view of available demand sources for publishers. This allows Decision Manager to offer the most complete and comprehensive reporting among these demand sources. Combined with PubMatic's real-time data analytics capabilities, publishers are empowered with actionable insights to increase yield.

3

Simple Integration

Considering all of the advantages that come from Decision Manager, the product is quick and easy to implement. This is crucial for publishers that need to focus on the core aspects of their businesses around content creation.

Digital ad operations are remarkably complex, and as consumers continue to shift consumption towards digital media sources, a publisher's role in delivering both content and advertising will only become more complicated.

Consumers now expect seamless and curated experiences across all devices, putting increased pressure on publishers to deliver technically-sound web content (with fast loading time and mobile friendly design) and derive enough revenue from advertising or subscriptions to support the high-quality content.

Decision Manager was designed to give publishers more flexibility in inventory management, more efficient sales channel prioritization and better insight into monetization strategies to drive publisher revenue and support content businesses of the future. As devices continue to proliferate into our cars, homes and pockets (i.e. the "Internet of Things"), advertising platforms must be prepared to deliver on consumers' expectations.

Often unnoticed by the consumer, a publisher's platform for ad serving and yield management are critical underpinnings within a digital media experience that PubMatic has dedicated and plans to continue to dedicate major investment. In order to effectively serve trillions of impressions within milliseconds, publishers must be armed with a comprehensive technology stack, which includes yield management, ad serving, real-time analytics and workflow automation. PubMatic's Decision Manager is an important step towards achieving the holistic, cross-platform marketing automation platform of the future.

About PubMatic

PubMatic is the leading marketing automation software platform for publishers. Through real-time analytics, yield management, and workflow automation, PubMatic enables publishers to make smarter inventory decisions and improve revenue performance. Focused on serving the needs of premium publishers, PubMatic inspires buyer confidence by providing flexibility in audience discovery and planning media campaigns through its Media Buyer Console and APIs. The company's marketing automation software platform provides a global roster of comScore publishers with a single view into their advertiser relationships across every screen, every channel and every format. PubMatic was ranked by Deloitte as one of the fastest growing companies in the US Internet sector for the third consecutive year in 2014. The company has offices worldwide, and is headquartered in Redwood City, California.

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Decision Manager Product Information

http://www.pubmatic.com/decisionmanager

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