

UNDERSTANDING SUPPLY PATH OPTIMIZATION

A PRIMER

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In 1994, AT&T ran the world's first banner ad on HotWired.com. And while the technological innovations that enabled it to display were revolutionary, the transaction process was relatively simple. A buyer engaged directly with a publisher to purchase inventory that would enable them to reach their target audience.

In the quarter of a century that online advertising has existed, the dynamics between buyer and seller have changed dramatically. Global digital ad spend was approximately \$325 billion in 2019 and is expected to grow to \$526 billion by 2024.¹ The ecosystem has become increasingly complicated, incorporating a tangled web of technology providers and middlemen that enable sophisticated auction mechanics that rival those on Wall Street.

As more brand advertising spend flows into the programmatic ecosystem, players on both sides of the industry are beginning to rebel against complexity and demand transparency and efficiency across the supply chain. Over the past few years, media buyers have put a microscope up to their supply paths to ensure that each dollar of ad spend is as impactful as possible.

The concept of supply path optimization, or SPO, is not a new one. First introduced into industry lexicon back in 2016, it has evolved and morphed alongside the programmatic industry at large. SPO decisions are now being made across buyer profiles in all global regions, including both mature and developing markets. As a result, there is confusion and misconceptions about what it actually means and who it impacts.

Our goal is to explore the evolving programmatic landscape from which this trend emerged, and provide clarity around five areas:



**WHAT IS
SPO?**



**WHY BUYERS
EMPLOY SPO**



**EFFECTIVE
IMPLEMENTATION**



**MEASURING
SUCCESS**



**THE FUTURE
STATE**

WHAT IS SPO?

Header bidding gave buyers a choice, which they are harnessing to take back control.

When programmatic emerged as the dominant means for transacting on digital inventory, advertisers' choice of supply path through which to buy media was limited. A large portion of programmatic inventory was either exclusive to a certain sell-side platform (SSP) or preferred according to a set order. The traditional waterfall model dictated which technology providers a buyer had to use to purchase their target audiences, particularly on the SSP side. Based on the preferential ordering of SSPs within a publisher's ad server, an advertiser had little choice but to access that inventory through whichever SSP was ranked at the top of the waterfall (Figure 1).

Further, since each publisher had a unique SSP preference, it meant that buyers had to be integrated—either directly or indirectly through intermediaries—with nearly every SSP to ensure they had optimal access to all publishers. In this world, publishers largely controlled the decision of which SSP would execute the bulk of transactions.

Alternatively, header bidding expanded the buying paths for any given impression, since publishers were able to collect bids from multiple SSPs in parallel. Each SSP, in turn, sends the impression to each of their demand-side platform (DSP) partners (Figure 2). In a header bidding world, the average SSP and DSP are each receiving more traffic while filling smaller percentages of inventory.

FIGURE 1

WATERFALL SETUP

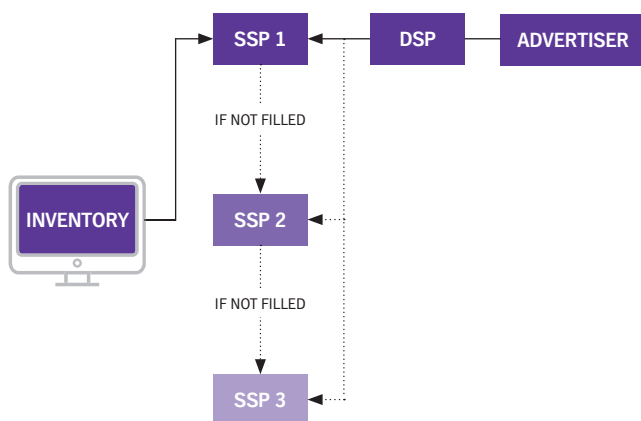
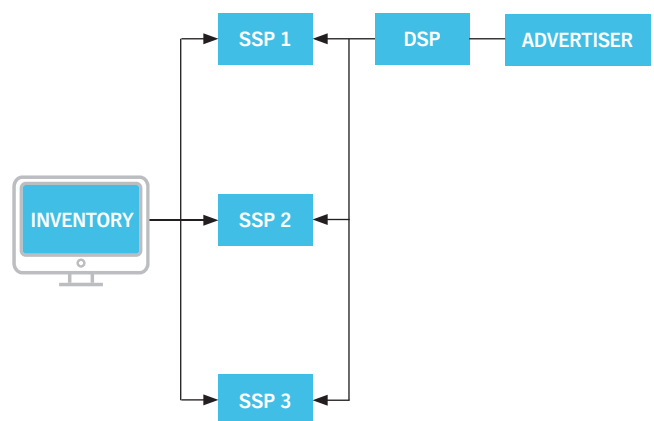


FIGURE 2

HEADER BIDDING SETUP

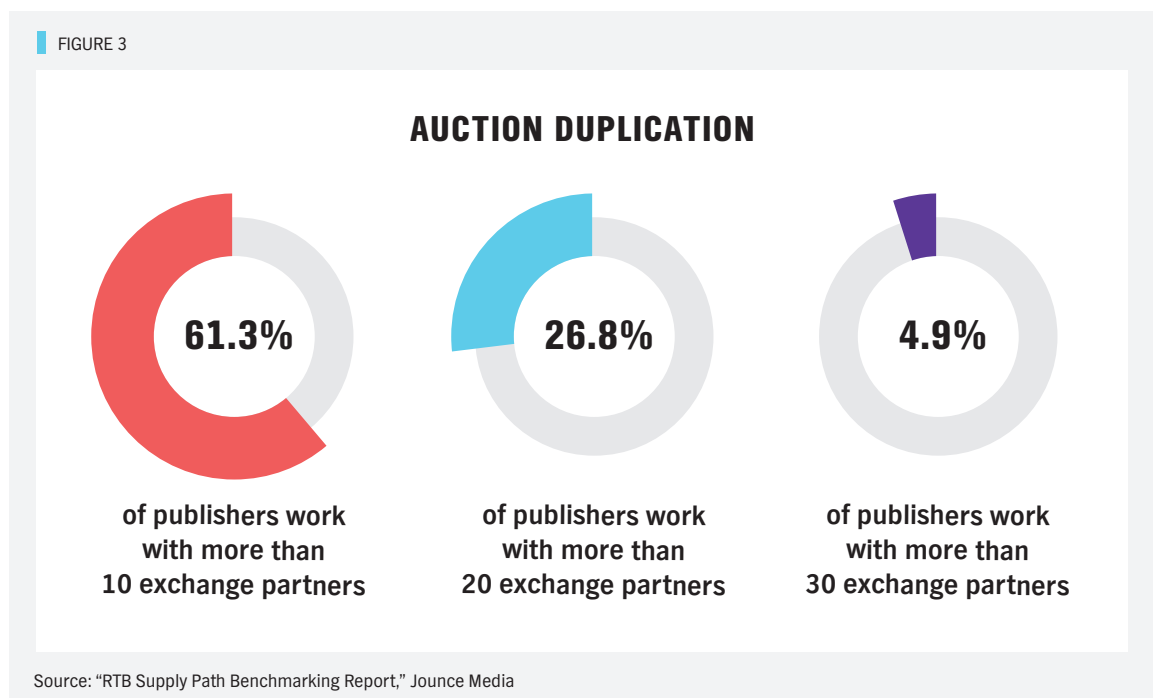


The swift and expansive adoption of header bidding technology served as a tipping point, altering the ecosystem for buyers in a variety of ways. Auction duplication remains a challenge for the industry and is expected to remain the norm (Figure 3). This places increasing strains on DSPs' infrastructure. They now have to process significantly more impressions per second, often more than is financially viable.

By flattening the waterfall and making inventory available through multiple SSPs simultaneously, buyers now have a choice about how to access their target audiences. Some buy-side companies have begun to meaningfully assess the relative value of SSPs, who are now forced to compete against one another on auction dynamics, transparency and quality of pipes.

In this world, buyers largely control the decision of which SSP will execute their transactions. This intensified the drive to cut out less appealing supply partners to optimize buyers' supply paths. Supply path optimization, or SPO, allows buyers to choose the best path towards a desired impression.

While SPO was initially a DSP initiative, it quickly emerged as a strategy that agencies and advertisers are embarking on themselves. As programmatic continues to become a larger share of media spend, advertisers are taking more ownership of programmatic buying and concluding, along with the agencies that work on their behalf, that bespoke supply strategies can drive outsized results.





There are a variety of tactics that the buy-side uses to optimize supply paths, which all fall under the umbrella of SPO:

1 PRUNING LONG-TAIL SSPS

Many buyers are systematically reviewing their supply partners and eliminating buying across SSPs that do not provide any incremental value in terms of inventory and/or technical functionality.

2 CONSOLIDATING TO A FEW KEY PARTNERS

A newer trend has emerged whereby buyers are taking a more strategic approach and consolidating their efforts across a small group of SSP partners with whom they can have deeper relationships and maximize efficiency.

3 LEVERAGING REAL-TIME ALGORITHMS

Some DSPs have developed algorithms that rely on data and machine learning to analyze a publisher's SSP partners in real time based on various performance- and preference-based metrics. Bids will be adjusted in real-time based on the desirability of a given supply path at an impression level. The quality of SPO tools varies greatly between DSPs, with many planning to introduce more robust features over the coming quarters. For example, buyers can now shut off select SSPs within the DSP and select their preferred path.

Buyers are evolving through these tactics, with many ultimately employing a combination in their supply path decisions. Some are making distinct SPO considerations at the format level (i.e., display, mobile app, video, etc.) Others are starting the SPO process around their large omni-format SSPs and then augmenting them with any format-specific SSPs as necessary.

WHY BUYERS EMPLOY SPO

It's a lowest common denominator problem—a buyer is only as good as their worst SSP.

SPO conversations are an important part of the current industry dialog, and for good reason. Buyers have realized that fragmentation of supply paths effectively leads to a lack of control over their bid strategies, ultimately at the detriment of campaign performance and advertiser ROI. SPO is a mechanism for buyers to reclaim that control. This control embraces multiple areas:



ECONOMIC CONTROL

When many in the industry think about SPO, the first lever that comes to mind is economics. Advertisers, agencies and DSPs may use consolidation as a means of extending the impact of their ad dollars. SPO helps address four primary economic challenges that exist when buying across multiple SSPs:

UNDERSTANDING SUPPLY CHAIN FEES

With fragmented buying paths, it can be difficult to ascertain which SSPs are charging which fees, as well as when and where those fees are being taken: is an SSP charging multiple fees? Discrepancy fees? Dynamic fees? The situation is further complicated by the fact that many SSPs work with resellers, making supply chain economics more complex. By working with fewer SSPs, it is easier for buyers to manage their supply relationships and understand the fees being charged.

LEVERAGING BUYING POWER

In the current programmatic ecosystem, all advertisers and agencies are generally subject to the same SSP fees. The largest buyers have the same reduction in working media as the smallest buyers, and it is impossible to obtain economic leverage across multiple SSPs. By spending across fewer partners, buyers can maximize leverage by consolidating spend to a material level.

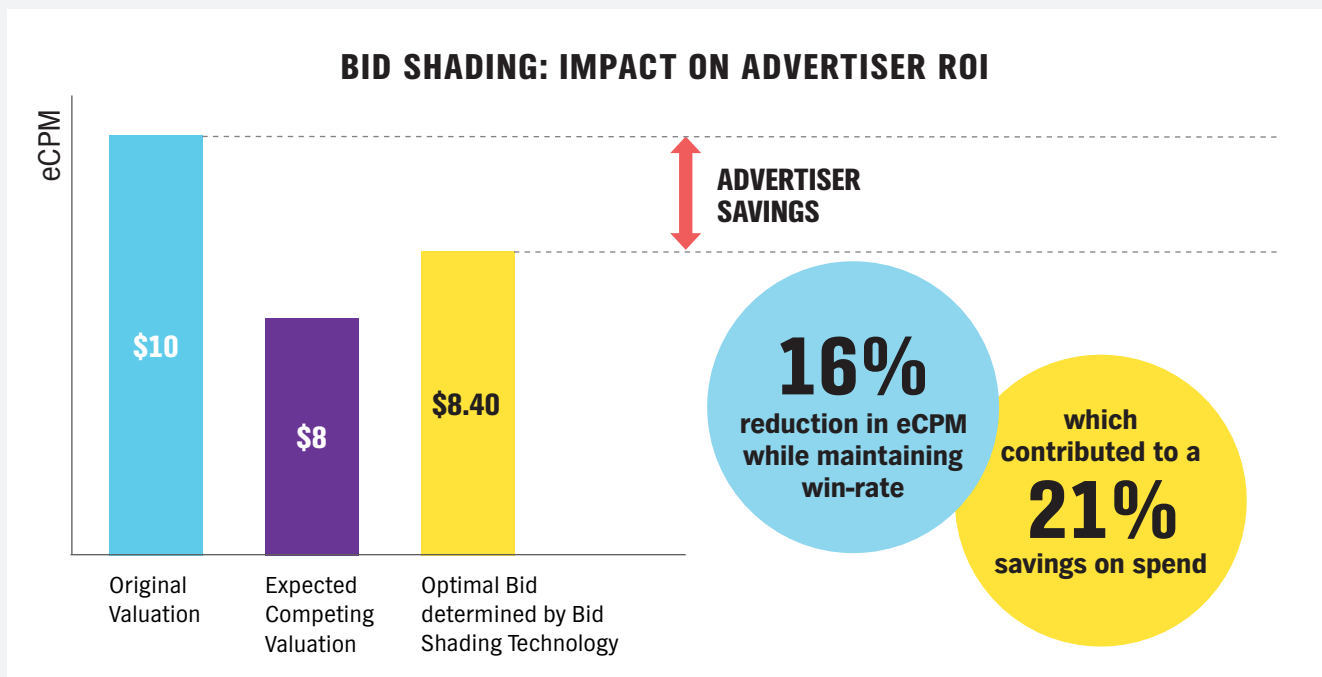
COUNTERPRODUCTIVE AUCTION DYNAMICS

In the current auction environment, buyers bidding across multiple SSPs for the same inventory risk being overcharged. Particularly since the advent of header bidding, many publishers have become SSP agnostic. This inevitably results in auction duplication for buyers, who themselves have been SSP agnostic as well. When participating in multiple auctions for the same inventory, it becomes challenging for buyers to ensure those auctions are operating fairly and consistently. To help combat these risks, some SSPs have developed technology to help buyers obtain more favorable auction dynamics. One such example is bid shading, which intelligently applies bid reductions based on machine learning algorithms, resulting in savings that can translate to higher return on ad spend (Figure 4).

SUPPLY CHAIN EFFICIENCY

SSPs largely operate on fixed cost technology, meaning the bulk of the cost incurred is stable regardless of how much money a buyer spends. SSP fees are buoyed by those infrastructure costs, and so inefficiency results in higher overall fees for buyers. By consolidating spend, buyers can help their supply partners maximize the efficiency of their infrastructure which will ultimately lead to improved advertiser economics.

FIGURE 4



QUALITY CONTROL

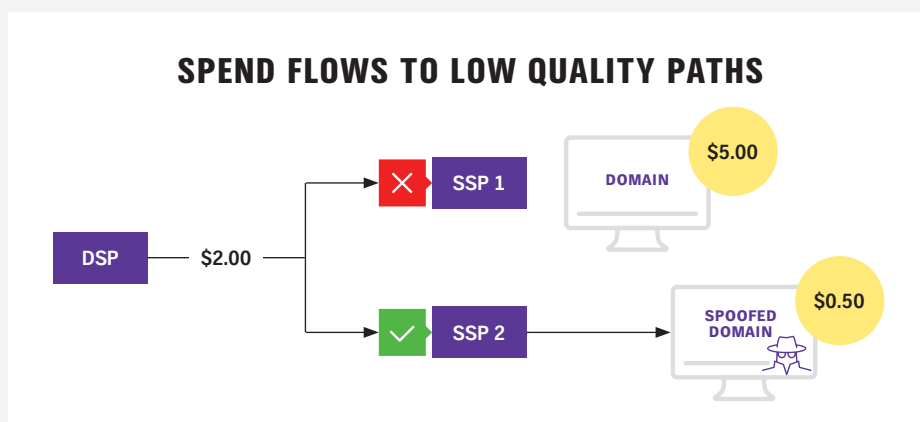
The internet encompasses a near infinite expanse of content, and the proliferation of audience targeting has unlocked tremendous potential for advertisers to reach their intended market wherever they may be engaging online. However, it has also bred an environment ripe for nefarious activity.

In the absence of any SPO, a buyer's ad spend will naturally flow to riskier supply paths. For example, if SSP #1 has a direct connection to a domain and implements measures to restrict spoofing, but SSP #2 does not, the buyer may not be able to differentiate between the two paths and inadvertently ad spend may naturally flow to the less expensive spoofed version of that domain (Figure 5). This could have significant impact on performance, particularly for brand campaigns.

As another example, if SSP #1 meticulously blocks all content farms and made-for-ads sites, a buyer's spend will still flow to those sites on other SSPs that employ fewer quality controls. Advertisers are not able to fully realize the benefits of quality efforts employed by some SSPs unless they stop buying on other substandard paths. Fraud and low-quality inventory are designed to soak up spend and SSP fragmentation is one of the primary structural weaknesses that fraudsters and poor sites exploit.

By employing SPO—and specifically SSP consolidation—buyers are able to realize the benefits of quality-focused SSPs and ensure their ad spend ends up on premium apps and domains. This is especially important in fragmented markets, where the bulk of media buying is handled out of a centralized office across countries with different languages and buying cultures, such as Southeast Asia. In these regions, buyers need trustworthy supply partners that can efficiently deliver on the quality and checks required over a wide geographical spectrum.

FIGURE 5





Additionally, the quality benchmark for SSPs has increased beyond just eliminating fraud, such as non-human traffic. Buyers should also understand which supply partners are working to eradicate click-bait and low-value human traffic. As more brand spend flows to programmatic and performance KPIs are less relevant, it is becoming more difficult to ascertain the value of an impression. It is imperative that buyers consolidate to SSPs that share their commitment to quality.

CONCENTRATED INNOVATION

In some ways, the speed at which the digital ad tech ecosystem evolves can be dizzying. Yet in others, innovation has been far slower than expected. Collaboration between advertisers, agencies and SSPs has been less prevalent than it could be, largely due to supply chain fragmentation.

When advertiser spend is spread across a long list of SSPs, it becomes challenging for buyers' supply and product teams to invest in innovation with each partner. The improvements made would only impact a small portion of spend, which often doesn't warrant the cost of investment in both time and financial resources. As a result, advertisers and agencies have focused on innovations that can be applied without SSP involvement. While those efforts are certainly beneficial, other areas of progress have been stifled.

By consolidating spend on a smaller number of SSPs, buyers can begin to dedicate product and development resources to projects with each partner that will impact a much larger portion of spend. This will inherently drive a more cohesive and effective supply chain. Further, many SSPs also have resources to apply towards bespoke buy-side innovation. With fewer, more focused partnership, buyers are able to drum up the negotiating leverage to help define SSPs' product roadmaps and ensure that the tools and technologies they need are prioritized. Advertisers who enable their supply chains to work for them can have the opportunity to innovate faster.



HOLISTIC INSIGHTS

While DSPs aggregate many key supply insights, SSPs gather incremental data that buyers find increasingly useful. Whether it be auction data (i.e. bid density reporting to show which auctions and which users are most competitive, or insights into CPM trends across advertiser types) or bid data (i.e. reasons why a bid request was blocked by a publisher or SSP), advertisers and agencies can generate a more robust understanding of their supply chain by tapping into SSP data. Media buyers are actively ingesting log data from some SSPs already for this purpose.

However, gathering these insights across a long list of SSPs is nearly impossible. Costs exist for both the SSP to send the data and for the buyer to ingest, store and analyze the data. By consolidating SSPs, buyers can get more consistent and accurate insights across a much greater portion of their ad spend. This will enable them to jointly review the data and form smarter bid strategies with those partners. Consolidation is imperative for buyers to obtain visibility and to be able to tap into supply experts to understand those holistic insights and improve.

CONTROL OVER BEHAVIOR

It is nearly impossible to adequately monitor one's supply chain, let alone fully understand it, when operating within a highly fragmented ecosystem. This is a lesson that major companies across industries have learned the hard way—from Chipotle's E. coli contamination crisis² to Apple's labor and environmental violations.³ The programmatic supply chain is no different.

Fragmentation and limited visibility can provide a breeding ground for under-the-table mechanics that may not have buyers' best interests in mind. Further, many advertisers buy through resellers and long-tail supply partners with whom they have no direct relationship so they cannot have visibility into their operational practices. By employing SPO efforts that reward supply partners that continually act in accordance with buyers' values and larger visions, the buy-side can incentivize SSPs to place greater emphasis on driving advertiser ROI.

In programmatic advertising, extensive fragmentation is risky, ineffective and incredibly inefficient, all of which restrict marketers from driving ROI. A buyer's supply chain is only as good as their worst SSP. Only when supply paths are optimized and spend is consolidated on a set of preferred partners can buyers truly extract the full benefits of a premium programmatic ecosystem.

EFFECTIVE IMPLEMENTATION

Optimizing a supply path cannot be a “set it and forget it” effort

Truly optimizing one’s supply path is not an easy task, nor is it a concentrated, one-time activity. It is an iterative process that requires careful evaluation and continual assessment and can seem like a daunting undertaking to embark upon. However, there are a few key steps that buyers can take to start down the path of determining their optimal supply path:



STEP 1 INTERNAL ASSESSMENT

STEP 2 SSP EVALUATION

STEP 3 CONSOLIDATION

STEP 4 ONGOING OPTIMIZATION

DETERMINING ONE’S OPTIMAL SUPPLY PATH

1 INTERNAL ASSESSMENT

Before one can determine which SSPs offer the most efficient and effective path to desired inventory, it is necessary that buyers truly understand both their supply mix as well as their own pillars for success. Buyers should examine total spend across SSPs and publishers to understand where their media budget is currently being spent. Some questions to answer include: How many SSPs am I buying through? Are the majority of impressions through a relatively small number of partners? Am I buying specific publishers’ inventory primarily through specific SSPs, and if so, why?

It is also important to avoid placing undue weight on current and historical spending trends. As described previously, ad spend can flow towards lower quality domains and SSPs if not managed, meaning that where spend has gone in the past is not necessarily the best indicator of where spend should go.

There may be easy decisions a buyer can make at this point, such as pruning long-tail SSPs that do not provide incremental value and are not important components of their buying strategies. The remaining SSPs will be the pool of partners to include for further evaluation.

2 SSP EVALUATION

Once a buyer understands the current state of their supply landscape and the unique factors that will enable them to maximize ROI, they can then begin the process of evaluating their SSP partners. Prior to outreach, buyers should align internally and clearly articulate their supply strategy, answering questions such as: What are my supply goals? What are the key tenets I want from my SSP partners?

To determine whether an SSP has the potential to be a long-term partner, buyers can measure each against pre-determined key assessment criteria and ensure strategic vision alignment. It is important to understand their differences, what information they are willing to share, and if they are willing to offer any unique or specific value. This information is often aggregated through a standardized request for information (RFI) process.

3 SSP CONSOLIDATION

Following the assessment process conducted above, buyers are armed with the knowledge and insight necessary to develop an effective SPO strategy. The process to actually optimize supply is dependent upon the DSP being used, but most DSPs offer buyers the ability to turn SSPs on and off, or to prefer certain SSPs via multi-publisher Deal IDs. Before making any drastic changes to buying strategies, it is always best practice to devise comprehensive testing scenarios to ensure there is no unintended impact to scale or campaign performance.

4 ONGOING OPTIMIZATION

Continual evaluation and refinement is necessary to determine whether the ideal path one day is still optimal the next. SPO decisions are often made with the assumption of future action by the selected SSPs, such as economic incentives or feature delivery, and it is necessary to track that adequate progress is being made while also ensuring that campaign performance metrics are achieved.

Additionally, buyers should examine the SSPs that are not part of their chosen supply path a couple of times a year. The digital advertising ecosystem changes quickly, as does each company that operates within it. Periodic monitoring can help to ensure that opportunity is not being left on the table. However, due to the resources required to implement SPO effectively, buyers should focus most of their time and energy building and refining relationships with their chosen SSP partners.

SPO RFI SCORECARD

Each SSP partner should be evaluated against a standard set of criteria.
A sample Excel template can be downloaded at pubmatic.com/SPO-RFI-Scorecard

1	VISION & VALUE	<i>Questions to Ask</i>
<input type="checkbox"/>	Corporate Vision	What is your company's strategic vision?
<input type="checkbox"/>	Corporate Values	What values does your company abide by?
<input type="checkbox"/>	Differentiation	What differentiates your product offerings?
2	PRODUCT ROADMAP	<i>Questions to Ask</i>
<input type="checkbox"/>	Product Roadmap	Please share your high-level product roadmap for the next few quarters?
<input type="checkbox"/>	Buyer Participation	Do you allow buyers to influence your product roadmap? If so, what is your process?
<input type="checkbox"/>	Custom Technology	Have you built custom technology for buyers? If so, please provide as much detail as you can.
3	QUALITY & TRANSPARENCY	<i>Questions to Ask</i>
<input type="checkbox"/>	Inventory Quality Toolkit	Please outline in detail your quality products and process
<input type="checkbox"/>	Accreditations	Are you currently accredited by any industry bodies?
<input type="checkbox"/>	Publisher Fee Model(s)	Please outline in detail your fee model, including whether your fees are completely transparent and to whom?
<input type="checkbox"/>	Buyer Fee Model(s)	Do you offer any fee models to buyers?
<input type="checkbox"/>	Data Log Access	Do you offer buyers access to log data for verification or other use cases? If so, what fields do you make available?

4	INVENTORY FOOTPRINT	Questions to Ask
<input type="checkbox"/>	Device and Format	Publisher and domain list by device type (e.g., desktop, mobile app, mobile web, CTV, etc.) and format type (e.g., display, video, etc.)
<input type="checkbox"/>	Access Type	Publisher and domain list by access type (i.e., direct vs. indirect)
<input type="checkbox"/>	Ads.txt and App-ads.txt Coverage	Ads.txt and App-ads.txt coverage by access type (i.e. direct vs. reseller)
<input type="checkbox"/>	Header Bidding Coverage	What percent of inventory is transacted through header bidding?
5	OPENRTB INFRASTRUCTURE	Questions to Ask
<input type="checkbox"/>	OpenRTB Version	oRTB version by DSP, including any custom fields or non-standard changes
<input type="checkbox"/>	Private Marketplaces (PMPs)	What private marketplace types do you support and with which DSPs?
<input type="checkbox"/>	PMP Management	What private marketplace management and troubleshooting tools do you offer?
<input type="checkbox"/>	Deal ID	Do you package inventory across one or more publishers under targetable deal IDs?
<input type="checkbox"/>	Reporting and Insights	What reporting and insights tools do you offer to buyers?
6	AUCTION DYNAMICS	Questions to Ask
<input type="checkbox"/>	Auction Transparency	Outline in detail how your auction works
<input type="checkbox"/>	Bid Shading	Do you offer a bid shading product?
7	WRAPPER TECHNOLOGY	Questions to Ask
<input type="checkbox"/>	Wrapper Transparency	Do you have a preferred wrapper or mediation layer for integrating with publishers? Is it transparent/open source?
8	IDENTITY SOLUTIONS	Questions to Ask
<input type="checkbox"/>	Identity Support	What identity initiatives do you support? Are you actively sending those IDs to DSPs?

MEASURING SUCCESS

Each buyer's optimal path is unique. Have confidence in your chosen supply chain.

In order to effectively select and refine one's supply chain, it is necessary to accurately measure success. An efficient supply chain will look different for each media buyer, depending on their unique needs and priorities. However, there are certain metrics that can be included in any buyer's analysis to serve as a foundational basis of evaluating SPO success. These criteria can be bucketed into the following three categories:

PERFORMANCE

Above all, it is necessary that a buyer's preferred path is able to deliver on campaign goals. From a financial perspective, one key criterion that buyers can rely on is whether the supply partner allows them to leverage their buying power to control the SSP fee. Buyers should also ensure that they have a clear understanding of the auction dynamics at play.

The performance bucket entails not only hitting advertiser KPIs, but also ensuring a fraud-free supply path. Some SSPs, including PubMatic, have introduced Fraud Free Programs, whereby buyers can be refunded for any fraudulent traffic. Quality risks can also be mitigated by leveraging accredited third-party fraud detection vendors and evaluating the cleanliness of an SSP's supply path. With the rise of industry initiatives to bring greater transparency, such as ads.txt and app-ads.txt, buyers can more easily evaluate their SSP partners against these metrics.

These performance criteria are relatively easy to track via a basic dashboard that shows SSP health. Buyers should review this data on a monthly cadence, if not more frequently, to ensure that their chosen partners remain effective.

PERFORMANCE CHECKLIST

- Reduction in fraud**
- Direct publisher access**
- Control of fees**
- Transparent auction dynamics**
- KPI improvement**
 - Bid Rate
 - Win Rate
 - eCPM
 - Percent Working Media

INNOVATION

Buyers should also evaluate their SSP partners based on their existing functionality and roadmap priorities, as well as their ability and willingness to address the buyer's future needs. SPO decisions are often made with the assumption of future action by the selected SSPs, such as product innovation or feature delivery. It is necessary to continually review progress against these committed deliverables and ensure that appropriate progress is being made.

Additionally, just as buyers' needs evolve over time, particularly as programmatic becomes a larger part of advertisers' marketing mix, so do SSP capabilities. New technologies and programmatic channels—such as CTV or digital out-of-home—can impact a buyer's supply chain preferences. It is important that buyers have a seat at the table with SSP partners to whom they have consolidated spend so they can influence product roadmap decisions.

Buyers should also be talking with their SSP partners about access to log data, or at least discuss the detailed insights that this data can provide. Nearly three quarters of US agency and marketing professionals identify improved insights and reporting deliverables as a core programmatic challenge.⁴ Some SSPs, including PubMatic, have developed the technical capabilities and internal processes necessary to provide this level of transparency to their buyers, which can materially impact advertiser ROI.

INNOVATION CHECKLIST

- Existing feature set
- Roadmap reviews
- Access to data logs

LONG TERM PARTNERSHIP

The final category by which buyers should measure their SSPs to determine whether their SPO decisions have been successful has to do with the relationship itself. By consolidating spend across a smaller set of partners, buyers should expect those partners to be more dedicated to proactively share insights and ensure greater alignment with the buyer's goals.

While partnership can seem subjective, there are specific metrics that buyers can leverage to evaluate their SSP partners. One is the cadence of meetings and communication, including executive participation on the part of the SSP. Another is whether the SSP is providing training and education around emerging trends and technologies that may impact campaign performance. It is also important to monitor whether the supply partners are operating with integrity, a proxy for which can be participating in industry organizations and press monitoring.

Lastly, in an era of vendor consolidation, it is imperative that buyers are diligent in evaluating the financial stability of their partners. By evaluating SSPs based on financial criteria, such as profitability and debt, buyers can operate with confidence that their supply partners are sustainable for the long-term.

PARTNERSHIP CHECKLIST

- Cadence of meetings**
- Training and education**
- Corporate integrity**
- Financial stability**



THE FUTURE STATE

Buyer driven consolidation is just the tip of the iceberg. Where do we go from here?

The programmatic industry remains highly fragmented. While DSPs, agencies and advertisers are beginning to optimize their supply paths and consolidate spend across fewer supply-side partners, this trend is still in its early stages. As more buy-side players employ SPO, we anticipate the following trends to emerge, affecting the future state of the industry:

SUPPLY-SIDE CONSOLIDATION

The average publisher currently transacts open auction demand through many supply paths,⁵ which can be costly to maintain. Once buyers bid into fewer SSPs to access programmatic inventory, the value for publishers to maintain relationships with this broad set of SSPs will decrease since there will be no loss in access to demand. Just as buyers are reaping the benefits of consolidation, so too will publishers.

PROGRAMMATIC COST REDUCTION

When buyers spread their ad spend across dozens of SSPs, their duplicated efforts promote a high-cost supply chain. SPO will ultimately lead to a reduction in the number of SSPs in operation. As more advertiser spend gets funneled through each remaining SSP, they will be able to operate more efficiently and gain leverage within their cost structure. This will likely enable technology providers to reduce programmatic fees without impacting profitability.

INCREASED INNOVATION

Consolidation will increase the incentives for SSPs to partner with the buy-side to drive innovation. Specifically, unique supply innovation at the agency or advertiser level will increase as SSPs become more integrated into their buy-side partners. This level of collaboration will enable buyers to further differentiate.

ACCELERATED GROWTH OF PROGRAMMATIC

While growing in share, digital advertising, and programmatic specifically, still represents only a portion of advertisers' overall marketing mix. The trend of SPO is driving the supply side of the digital ecosystem to focus more on driving advertiser ROI. This will ultimately drive more spend into the programmatic marketplace as buyers can achieve scale and performance with greater transparency than other channels provide.

¹ “Digital Ad Spending Worldwide, 2019-2024,” eMarketer, June 2020

² “Inside Chipotle’s Contamination Crisis,” Susan Berfield, Bloomberg, December 2015

³ “Apple finds more serious supplier problems as its audits expand,” Stephan Nellis, Reuters, March 2018

⁴ “Getting Detailed Insights Is Top Challenge for Programmatic Marketers,” Ross Benes, eMarketer, March 2018

⁵ “RTB Supply Path Benchmarking,” Jounce Media, May 2019

About PubMatic

PubMatic delivers superior revenue to publishers by being the sell-side platform of choice for agencies and advertisers. The PubMatic platform empowers independent app developers and publishers to maximize their digital advertising monetization while enabling advertisers to increase ROI by reaching and engaging their target audiences in brand-safe, premium environments across ad formats and devices. Since 2006, PubMatic has created an efficient, global infrastructure and remains at the forefront of programmatic innovation. Headquartered in Redwood City, California, PubMatic operates 14 offices and eight data centers worldwide.

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