Real-time Bidding and Programmatic Media

Ever wonder how items you shop for online seem to follow you long after you've left the page? It's crucial to understand, as a consumer shopping online, or to as an advertiser looking to increase ROI.

Real time bidding technology allows ad space on a web site to be purchased in the time period between when the user calls for the page and when the page renders, as shown below in Figure 1. This transaction is accomplished through an instantaneous auction triggered by an SSP, or Supply Side Platform, deconstructing the ad space characteristics into a string of text. The SSP is also often referred to as an "Ad Exchange." This string of text is an HTTP call, and is conveyed very quickly across web servers (the Internet). The HTTP call which defines the space is sent to a list of bidders. These bidders, or Demand Side Platforms, recognize the ad call and reply with the amount they would be willing to pay to advertise in that space.[1] The SSPs then determine the winning bidder and award the highest bidding DSP ad space at a price approximately $0.00001 over the bid of the second highest bidding DSP.

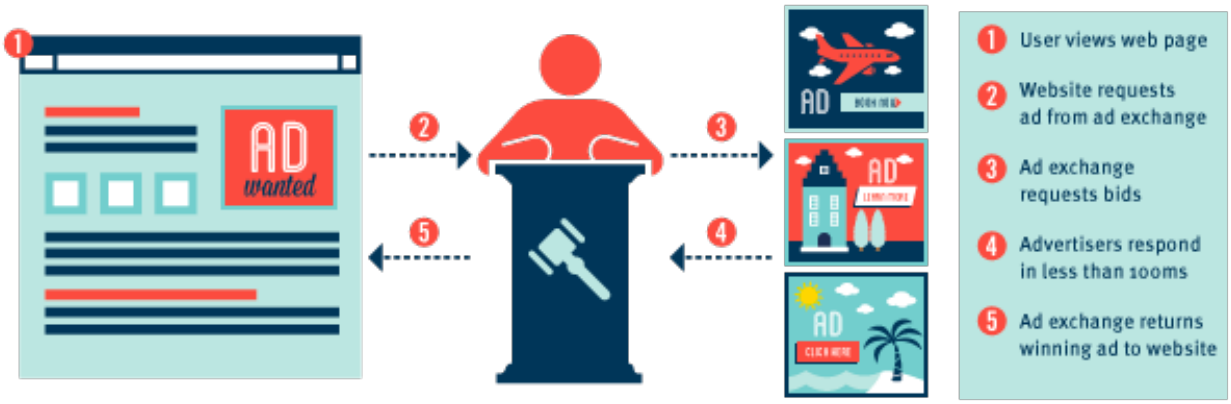

Figure 1: Real Time Bidding in Action [2]

The publishers then make an agreement with the SSP to decide what information will be passed on in the ad call. Generally, the SSP urges the publisher to provide as much as possible, since the demand for more transparent ad placements drives up the price of the ad.
The parameters usually included in the Ad Call are:

- **URL or Domain** – typically the website (e.g. www.ebay.com), but can also be 'masked' by only providing the name of the network or 'seller'

- **Operating System –** the OS of the computer loading the ad, be it Windows, Mac, etc…
- **Browser –** the browser of the computer loading the ad such as Chrome or Safari
- **IP Address** – The internet address of the computer loading the ad. IP addresses can be converted into:
    - **Geo** – the geographical location of the computer: Country, State, DMA, Zip
    - **Internet Speed** – the speed of user's connection (high speed, dial up, etc)
    - **Business** – 20% of the time this can be mapped to the business registered using the IP Address
    - **Time** – This is not actually passed in the Ad Call, but can be inferred as the impressions are being sold in real time
- **Cookie ID –** the identifying number according to the SSP of the user. This is a cookie, or text file which is attached to the user's browser. Usually this is a number at least 16 digits long. At times a combination of numbers and letters. This allows the bidders to categorize users on their end. With this cookie the buyers can target using the following:
    - **Frequency –** How many times the bidder had seen the user. And how many times the user has seen certain ads
    - **Data Segments –** A host of companies offer categorization of users using cookie IDs including: gender, age, income level, interest, browsing behavior, shopping behavior, etc.
    - **Sequencing –** Serving ads in sequence to a user

Programmatic Media has a variety of different meanings. At its core the term 'programmatic' includes anything that is determined using machine learning. Since the early days of ad servers, machine learning has been employed to select the most valuable ad to serve on the publisher side. This technology, similar to how Google decides which search ads to show on Google.com, has been around before the widespread adoption of the term programmatic. The term has been a buzz term for the past few years as the buyers have gained control due to the RTB revolution.

Part II. Types of Digital Campaigns

Programmatic Media includes all campaigns that employ technology and machine learning to make advertising decisions on the buyer's behalf.
Each advertising campaign has the same basic parameters. Using a set of creative assets, the marketer is going to run a certain amount of budget over a period of time with the intention of driving a measurable result. Many different types of publishers and networks approach marketers. Almost all networks use the RTB ecosystem in some fashion, but only four organizations can claim to be 'programmatic solutions.'

Most networks still use RTB solutions but do not inform the client of their techniques. By doing this, networks are able to take higher margins than their typical business where they determine a revenue share with their publishers. The four organizations inside the green circle depicted in Figure 2 are those that are using the RTB technology.

- **Programmatic Direct:** Programmatic direct includes campaigns run on specific publishers, similar to an upfront insertion order (IO) deal, but is executed entirely through the DSP.
- **Performance Network:** The evolution of the Ad Network ultimately led to RTB specialists who then started organizations that buy exclusively on the exchange and tout technology. The Agency Trading Desks also fall under this category. These are groups who buy nearly the entire inventory using RTB and sell the technology and 'best in breed' direct response results. These organizations are not transparent in the costs of media, and therefore their incentives are not aligned with the buyers.
- **Private Exchange:** This is an RTB deal that allows an advertiser to control the targeting. The publisher and the advertiser agree to floor pricing and the URL, but the advertiser can use all other metrics in the Ad Call, through their DSP, to control the targeting.
- **Open Exchange:** This is purely the advertiser buying inventory made available through the exchange using a DSP. This is the most efficient way to purchase digital media, but the individual controlling the DSP becomes very important.

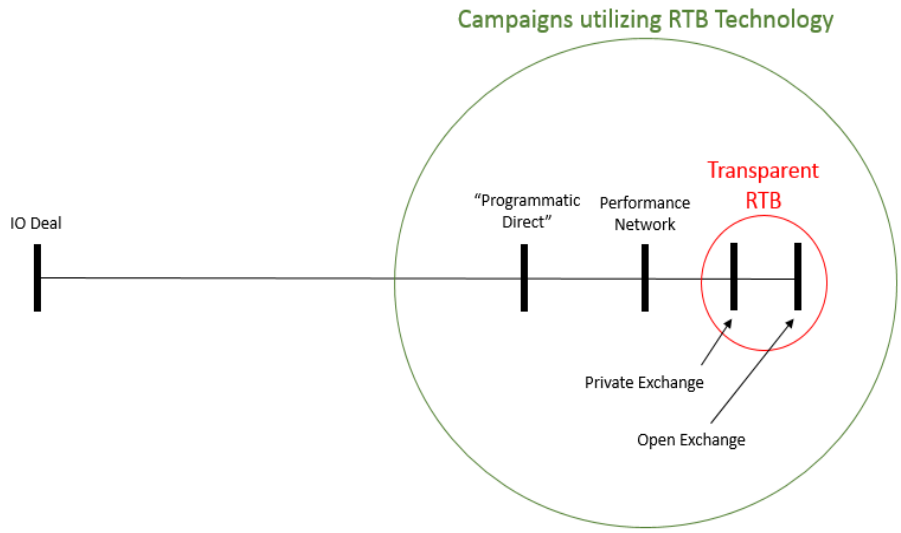

Figure 2: Types of Digital Campaigns

FOOTNOTES

[1] Actually, the DSP has an internal auction of its advertisers to determine the highest bid internally. This is the first of the instantaneous auction. The DSP leads with the bid for the advertiser in their platform who bid the highest based on the Ad Call

[2] Image sourced from livelyimpact.com