

## Measurement Glossary

**Ad Exchanges:** A marketplace platform that facilitates automated, auction-based buying and selling of ad inventory from the various ad networks. Ad exchanges operate in real time, and inventory is bought as needed.

**Ad Network:** A third-party company that connects websites that want to monetize their ad inventory with the appropriate advertisers. Ad networks aggregate publishers into content categories (travel, home and garden, sports) and then find the corresponding advertisers who want to buy that ad inventory at a high volume for a lower price, enabling advertisers to forego site-direct buys. Most ad networks today specialize in a niche content area, working with advertisers who wish to have their brand associated with content aligned with their brand category.

**Ad Recall:** A research objective that assesses whether a customer remembers seeing a particular brand / product on a specified channel (e.g., display, mobile, CTV/streaming device).

**Ad Servers:** Ad servers are technology used by publishers and advertisers to distribute advertisements on digital channels, such as websites and mobile applications. Ad servers use a variety of variables, such as audience demographics and ad budgets, to determine what ads to display to each user. The ad server uses data about the ad's performance, including clicks and impressions, to measure the success and progress of different campaigns.

**Adstock effect:** Carryover impact from advertising in the time period it was done to the next time period. For example, Radio advertising done in Week 1 could still impact sales in Week 2 – the amount of impact is determined by the adstock level, which is derived by testing many different levels and going with the most statistically significant one.

**Affiliate Marketing:** Businesses hire affiliates to promote their product(s) and compensate those affiliates for each customer the affiliate brings in.

**Artificial Intelligence:** The theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, etc.

**Attribution:** The identification of a set of marketing actions and their relative impact on a desired outcome, such as a sale. Attributing a relative value for each action is typically done

through statistical modeling and allows marketers to understand which actions had an effect in how much was their relative effect, allowing for optimisation.

**Audience:** A specific group of consumers who are most likely to want a product or service, based on their age, gender, income, geolocation, interests, purchase intention, or other factors. Advertisers seek out the audiences most likely to be receptive to an ad campaign.

**Awareness:** Refers to the moment a consumer learns about a brand's product or service. Awareness campaigns enable marketers to get in front of customers with messaging that puts the brand front and center, so it's noticed. When looking at the marketing funnel, this is the first point of engagement with new consumers along the customer journey.

**Balanced Groups:** Statistically similar groups that can be compared to help determine impact of a stimulus.

**Base Sales:** Base Sales is what marketers get if they do not do any advertisement. It is sales due to brand equity built over the years. Base Sales are usually fixed unless there is some change in economic or environmental factors.

**Billable Impressions:** The number of impressions counted towards fulfilling a contract. Because there can be a slight discrepancy between ad serving systems, these are tracked and charged based on externally validated impression counts (i.e., through third-party impression reporting).

**Brand Lift:** Digital measurement that leverages surveys to quantify the increase in brand perception against key purchase funnel metrics, including awareness, ad recall, brand attributes, favourability, preference, consideration, intent, and perception. Questions can include: "Which of the following brands have you heard of?" and "Which of the following would you consider purchasing?" Brand lift studies leverage a control / exposed methodology, but data collection can vary. For example, Nielsen DBE asks these questions using in-banner surveys, generally limiting them to a single question. Millward Brown and Research Now, however, are panel-based, asking their large opt-in panels questions about the brand, allowing for longer form surveys to be deployed.

**Budget Optimization:** For any business, Budget optimization is one of the key decisions to be taken for planning purposes. MMM assists marketers in optimizing future spends and maximizing effectiveness. Using MMM approach, it is established which mediums are working better than other ones. Then, budget allocation is done, by shifting money from low ROI mediums to high ROI mediums thus maximizing sales while keeping the budget constant.

**Carry Over Effect or Decay Effect:** The impact of past advertisement on present sales is known as Carry over effect. A small component termed as lambda is multiplied with the value for previous time frame. This component is also known as Decay effect as the impact of previous month/week/day advertisement decays over time.

**Click:** The number of times a user has clicked on a digital advertisement. A 'display click' is a click on a paid online ad; a 'search click' is click on a search result ad.

**Click-Through Rate (CTR):** Click-through rate of an advertisement. A core metric of the click model, this is the ratio of times an ad is clicked on, compared to the number of times an ad is shown. Calculated as clicks / impressions.

**Consideration:** Reaching consumers who have heard of your brand or product but need to understand details about the product or service to be sold on your brand specifically. These consumers are often researching a product category and are evaluating your brand against the competitive set. To be brought into their consideration set and selected, brands must showcase the benefits and key differentiators. When looking at the marketing funnel, consideration is considered mid-funnel along the customer journey, sitting between upper funnel brand advertising and lower funnel direct response advertising.

**Control Group:** A control group is a statistically significant portion of participants in an experiment that are shielded from exposure to variables. In a pharmaceutical drug study, for example, the control group receives a placebo, which has no effect on the body.

**Correlation Matrix:** A correlation matrix is a table that shows the correlation values for each pair-relationship. It's a very fast and efficient way of understanding feature relationships & the values always lie between -1 to +1.

**Cookies:** Markers placed on an ad that identify information about a user, such as geography, language, device used, and time of day, and contain non-PII information.

**Cost Per Acquisition (CPA):** The average advertising cost of one driven conversion. Calculated as the total cost (or budget) / conversions.

**Cost Per Click (CPC):** Cost Per Click on an advertisement. Price paid for each click generated. Also known as "pay-per-click." Calculated as the total cost (or budget) / clicks.

**Cost Per Mile (CPM):** Cost Per Thousand, using the Latin "Mille" instead of thousand. The amount an advertiser pays a website for every thousand times a brand's ad is shown. Calculated as 1000 x total cost (or budget) / impressions.

**Contribution Charts:** Contribution charts are the easiest way to represent sales due to each marketing input. Contribution from each marketing input is a product of its beta coefficient and input value. E.g.: Contribution from Newspaper =  $\beta$  \* Newspaper Spends

**Creative:** The type of digital media shown to internet users to communicate a message and draw attention, intended to ultimately drive users to take a specific action.

**Cross-Platform Advertising:** Advertising across different media platforms, including radio, television, paid search, social media, display, mobile, video, connected TV, etc.

**Customer Relationship Management (CRM) Data:** Data from an advertiser's customer database, which can include their name, email address, mailing address, and phone number, accompanied by their past purchase of your product. This is considered first-party data and can be very valuable, as it reflects the advertiser's actual customer base.

**Data Management Platform (DMP):** A data warehouse used to aggregate and target relevant audience segments. Once aggregated, this data is easily accessible to marketers for planning, activation/modeling, and validation / measurement.

**Dependent Variable:** The dependent variable (DV) is what you want to use the model to explain or predict. The values of this variable depend on independent variables. It is the outcome that you're studying. It's also known as the response variable or outcome variable.

**Diminishing returns:** The concept that the more you spend on a media channel, the lower the incremental gain in terms of conversion will be, up to the point where they hit zero and spending more money on that channel does not bring any additional impact.

**Double/triple counting:** More of an issue because of silo-ed reporting if brands combine reports from individual platforms they are at risk of significantly overstating their conversion numbers, as each single conversion can be counted multiple times in each platform.

**Demand Side Platform (DSP):** A technology platform that provides inventory buying opportunities from multiple sources. Utilizes real-time bidding capabilities of these sources to access and win inventory auctions.

**Dynamic Creative Optimization:** Ad creatives that are dynamically served to make each ad more relevant, but on a massive scale. The most common approach is Dynamic Retargeting, where ads can display products a user browsed or added to their shopping cart. Dynamic ads

can also recommend similar products or best-selling items based on user browsing or similar offers based on browsing behavior.

**Feature Importance:** Feature importance allows you to determine how “important” each input variable is to predict the output variable. A feature is important if shuffling its values increases model error because this means the model relied on the feature for the prediction.

**Geotargeting:** Geotargeting is a method that allows advertisers to serve ads to consumers that correspond to their location (country, region, city, zip code). Geotargeting is limited by law in some locations. This advertising tactic utilizes location and demographic to reach a prime market of individuals to create advertisements aimed at specific behavior. The information is gathered from cellphones and is privacy compliant. When someone is searching for information, ads can then appear for organizations nearby. Setting a specific ad location scope helps organizations avoid wasting marketing funds. Ads can be used in real time based on user location or location history. Geotargeting can also be used to measure visitation history and create more relevant ads based on that information, leading to improved responses.

**Incrementality:** Measures the impact of a single variable on an individual user’s behaviour relative to the expected behaviour without that variable. I.e: the impact of a marketing action v the impact expected without that individual action. Typically this is measured using an exposed group (to the marketing action) against a control group (who were not exposed). The lift (incrementality) is measured as the percent difference between the two and can be done on brand metrics, unit sales or revenue sales where the data is available.

Incremental Sales: Sales attributable to marketing activities like TV advertisement, print advertisement, and digital spends, promotions etc, typically calculated by comparing a control group to an exposed group.

**Independent Variables:** Independent variables (IVs) are the ones that you include in the model to explain or predict changes in the dependent variable. These variables are independent. In this context, independent indicates that they stand alone and other variables in the model do not influence them. The researchers are not seeking to understand what causes the independent variables to change.

**Linear TV:** Linear TV, or traditional TV, is the 24/7 line-up of programming available to view as it airs. It is delivered to viewers free of charge over-the-air with a digital or terrestrial antenna, through pay-TV provider technology (set-top box, IPTV, satellite dish), and increasingly via CTV (e.g., Amazon Prime, YouTube TV, Hulu, fuboTV). Programs can be recorded with a DVR to watch later.

**Look-Alike Modeling:** A process that uses machine learning to identify audiences who look and act very similarly to a known audience. Look-alike models are often used to create scale and find more people who will take a desired action.

**Lookback Window:** The time between a conversion event and a prior engagement event, such as an ad click or view. For example, a lookback window of 14 days means that any ad a user is exposed to in the 14 days before they convert should be considered in the allocation of that conversion's credit.

**MAPE:** The mean absolute percentage error (MAPE) — also called the mean absolute percentage deviation (MAPD) — measures accuracy of a forecast system. It measures this accuracy as a percentage, and can be calculated as the average absolute percent error for each time period minus actual values divided by actual values.

**Machine Learning:** The scientific study of algorithms and statistical models that computer systems use to progressively improve their performance on a specific task.

**Marketing Funnel:** The marketing funnel is a visualization of the theoretical steps on a journey customers move through from awareness to sales. The most common funnel includes at least awareness, consideration, and conversion, although more complex versions may also include interest, preference, intent, evaluation, trial, and advocacy or non-linear options.

**Media Buying:** Media buying is the process of purchasing ad space on digital and offline platforms to maximize profit from audiences. Those who buy media are called media buyers. These professionals find and purchase ad openings in optimal locations, site placements, and run times to reach consumers. A media buyer will negotiate for preferred ad placements at lower costs to ensure higher revenue.

**Market Mix Modelling (MMM):** A technique which helps in quantifying the impact of several marketing inputs on sales. The purpose of using MMM is to understand how much each marketing input contributes to sales, and how much to spend on each marketing input. This helps to ascertain the effectiveness of each marketing input in terms of Return on advertisement spends (ROAS). Typically this is done through a statistical approach that analyzes historical data to quantify the impact of external and internal variables on a key KPI (usually Sales, although can be adapted for brand or media-only metrics). Marketing Mix Models can be scaled by consumer segment, product, distribution channel, etc. and can include halo effects.

**Multi-Touch Attribution (MTA):** Multi-touch attribution is a marketing effectiveness measurement technique that takes all of the touchpoints on the consumer journey into consideration and assigns fractional credit to each so that a marketer can see how much influence each channel has on a sale. Multi-touch attribution offers a more sophisticated alternative to traditional, rules-based attribution approaches, such as first- and last-touch, which give all of the credit to the first or last marketing touchpoint before the consumer converts through a purchase, download or any other event.

**Multiple Linear Regression:** Multiple linear regression attempts to model the relationship between two or more explanatory variables and a response variable by fitting a linear equation to observed data. For this model to work, you also must assume that there's no significant correlation between the multiple independent variables. This is because you're measuring their impact on the dependent variable, not each other.

**Multicollinearity:** Multicollinearity is the occurrence of high intercorrelations among two or more independent variables in a multiple regression model. Multicollinearity can lead to skewed or misleading results when a researcher or analyst attempts to determine how well each independent variable can be used most effectively to predict or understand the dependent variable in a statistical model.

**Null Hypothesis:** A null hypothesis is a type of statistical hypothesis that proposes that no statistical significance exists in a set of given observations. Hypothesis testing is used to assess the credibility of a hypothesis by using sample data. Sometimes referred to simply as the "null," it is represented as  $H_0$ . The null hypothesis, also known as the conjecture, is used in quantitative analysis to test theories about markets, investing strategies, or economies to decide if an idea is true or false.

**Offline Sales Measurement:** Also known as offline-to-online purchase measurement, this links online advertising to offline sales by measuring the lift in purchase from those exposed to a digital ad. Vendors such as Nielsen Catalina Solutions, Oracle, IRI, and Kantar Group collect offline purchase data (point-of-sales [POS], coupon, loyalty card, and panel data) and leverage their robust database technology to match consumers who purchased offline with their online cookie.

**Omnichannel:** Omnichannel is a holistic approach to advertising that considers the customer journey and how it spans multiple channels and touchpoints. It provides a consistent brand experience with seamless messaging across channels that work together to drive awareness, consideration, and intent, all the way through to conversion. This integrated approach involves a

range of ad formats (including display, native, and video) that run on different channels (including websites, social media, and linear TV).

**Organic Conversion:** A visitor to a website from an unpaid traffic source who performs a desired action, such as signing up for a new account, registering for an event, or downloading a PDF. Success is measured based on “organic conversion rate,” which is calculated based on the percentage of total visitors that convert.

**Panel Data:** Observations or conclusions about consumer behavior derived from a sample which is representative of a larger population. Often panel data is gathered through surveys or interviews. Panel data is less expensive than collecting first-party data, useful for directional information, and particularly suited for reaching broad audiences, like with a brand campaign or a new launch campaign. Panels are samples, so they are usually derived from less than 1% of the population. This can make them a weak source of information about niche audiences because there might not be a statistically significant sample size to build off of. For other data collection types, see direct data.

**Personally Identifiable Information (PII):** This is short for personally identifiable information, which can identify a particular person, such as name, street address, Social Security number, credit card number, etc.

**Pixel:** Pieces of code that are placed on a website in order to gather valuable information about visitors to the site and their behaviors while on the site.

**Private Marketplace (PMP):** Deals that are negotiated as invitation-only auctions, providing certain buyers in the ad exchange preference. A publishers’ direct sales team can negotiate a deal with certain clients ahead of time, including a max bid, max CPM, ad unit types, certain site sections, etc. If a publisher has an impression that matches the negotiated deal’s criteria, it triggers a bid request encoded with a special Deal ID number. The auction calls out to demand partners and prioritizes buyers with the matching Deal ID.

**Programmatic Buying:** Automatic process of buying and selling of digital advertisement placements through real-time bidding, supported by real-time bidding technology and several data sources.

**Prospecting:** Targeting new audiences who are a good fit for your brand and likely to convert. Prospecting is a key strategy used in combination with retargeting to drive new potential customers into the marketing funnel.



**Reach:** A critical measurement for upper funnel campaigns, this is the percentage of ads that reached your intended audience. Reach is calculated as total impressions divided by ad frequency. This is often measured as “in-target delivery” and validated through a third-party audience validation vendor. By reaching the desired audience with the optimal frequency, marketers can achieve upper funnel key performance indicators such as lift in awareness, interest, consideration, or preference.

**R-square:** R-squared is a goodness-of-fit measure for linear regression models. This statistic indicates the percentage of the variance in the dependent variable that the independent variables explain collectively. R-squared measures the strength of the relationship between your model and the dependent variable on a convenient 0 – 100% scale.

**Real-Time Bidding (RTB):** Bidding or buying inventory in real time. Advertising buyers bid on an impression and, if the bid is won, the buyer’s ad is (nearly) instantly displayed on the publisher’s site, without the user being aware of the auction.

**Regression Attribution:** Using linear regression to correlate digital media activity with digital KPIs. This helps quantify the individual impact of each media channel without relying on cookie-level tracking and its limitations.

**Retargeting:** Serving ads to consumers who have previously engaged via site visits or email sign-ups, where the prior engagement did not result in a sale or conversion. Shorthand abbreviations include RT and RET.

**Return On Advertising Spends (ROAS):** Return on Ad Spend (ROAS) is a marketing metric that measures revenue earned for each dollar you spend on advertising. By calculating and tracking ROAS, you gain insights on the effectiveness of your advertising. You can calculate ROAS for a wide variety of advertising initiatives, from measuring ROAS on single ads or projects, to calculating ROAS on monthly campaigns or for an entire year’s worth of advertising spend.

**Search Engine Marketing (SEM):** This marketing tactic uses either paid media advertising or organic search engine optimisation (see SEO definition) to give websites higher rankings in search engine result pages (SERPS) for increased visibility.

**Search Engine Optimization (SEO):** The practice of increasing the quantity and quality of traffic to a website through organic search engine results to give higher rankings in search engine result pages (SERPS) for increased visibility.

**Silo-Ed Reporting:** Using conversion data from individual platforms (Facebook, Snapchat, TikTok, etc.) which is misleading as it can lead to multiple platforms claiming credit for the same conversion, as they are not able to see media interactions from other platforms.

**Social Ads:** Display ads served on social media platforms. Since there are fewer social media players out there, they can have unique ad sizes that integrate well into their pages. While these budgets were traditionally separate, and display and social were therefore considered completely distinct, since they are essentially banner ads with similar performance metrics tied to them, major industry players such as eMarketer are beginning to group display and social together. For more digital ad formats, see rich media, banner display ads, mobile ads, video ads, native ads, and connected TV (CTV)

**Supply Side Platform:** A technology platform that helps publishers manage their advertising inventory while maximizing potential revenue. SSPs allow publishers to manage their inventory in real time, prioritizing their own direct buys first (which net them more money), and then uploading their unsold inventory to the ad exchanges. SSP reporting capabilities also provide insight into what inventory is selling best and at what price point.

**Test Group:** A Test Groups is a group of (usually randomly assigned) users/ sessions/ pageviews/ etc. that are exposed to a certain treatment. The test groups are then compared to the Control Group to check for discrepancies large enough to reject the null hypothesis of interest.

**Third-Party Cookies:** Information generated by a website and stored by your browser, to help understand users' online behaviors. Third-party cookies are generated on a website by a party other than the website itself.

**Third-Party Data:** Information that a company collects indirectly (such as through third-party cookies) or aggregates from others (such as credit card companies and magazine publishers) and then sells to ad buyers.

