Data-driven attribution methodology

There are two main parts to the methodology of data-driven attribution in Google Ads:

- Analyzing the available path data to develop conversion rate models for each of your conversion types
- Using the conversion rate model predictions as input to an algorithm that attributes conversion credit to ad events

Develop conversion probability models from available path data

Data-driven attribution uses path data—including data from both converting and non-converting users—to analyze how the presence and timing of particular marketing touchpoints may impact your users' probability of conversion. The resulting models assess how likely a user is to convert at any particular point in the path, given exposure to a particular ad.

The data-driven attribution algorithm estimates the timing and probability of a conversion using an adaptation of "survival analysis," an approach commonly used in biostatistics and clinical trials. It computes the counterfactual gains of each Google Ads ad exposure by training on data from randomized controlled trials—that is, it compares the conversion probability of users who were exposed to ads, to the conversion probability of similar users in a holdback group.

Algorithmically assign fractional conversion credit to marketing touchpoints

The data-driven attribution model assigns credit based on how the addition of each ad to the path changes the estimated conversion probability at the time of the conversion. The data-driven attribution algorithm uses features including time between the ads and the conversion, format type, device type, and other query signals to calculate this credit.
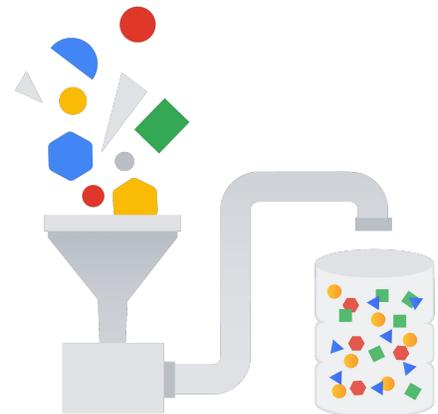
Example

In the following high-level illustration, the combination of Ad Exposure #1 ("best tech gifts"), Ad Exposure #2 ("top rated phones"), and Ad Exposure #3 ("Google Pixel 4") leads to a 3% probability of conversion. When Ad Exposure #3 does not occur, the probability drops to 2%, so we know that Ad Exposure #3 drives +50% conversion probability. We repeat this for each ad event and use the learned contributions as attribution weights.
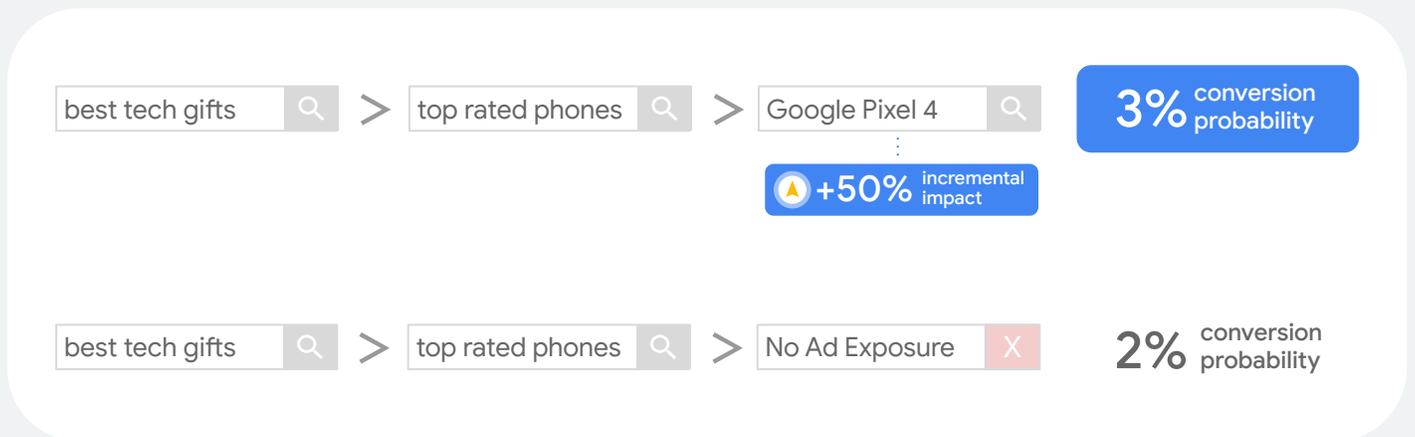
Explore your data-driven model and select it for reporting/bidding

Use the Model Comparison report to compare attribution models and identify optimization opportunities. Once you've decided you want to switch one or more of your conversion actions to the data-driven attribution model*, click the tools icon, and select **Conversions** from the *Measurement* section. Then, click the name of the conversion action, and edit its settings to use the **Data-driven** model for reporting and bidding in Google Ads.