Google Ads

Setting Smarter Search Bids

Inside automated bidding with Google Ads

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In this guide, we'll take you behind the scenes and walk through how Google Ads automated bidding and Smart Bidding work. You'll learn what signals are used, how bids are calculated, and what you can do to improve performance.

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The bidding challenge

Intelligent bid optimization is a keystone of any successful search campaign. The keyword bids you choose directly influence your campaign performance and how visible your ads are for the search queries most important to your business. Without regular, data-driven bidding oversight, you could find yourself spending too much on the wrong keywords while missing out on valuable conversions and revenue.

It can be challenging to scalably manage your bids to achieve the best results, especially if you have campaigns with a significant number of keywords and are trying to optimize across multiple dimensions like match type, device and location. Given the dynamic nature of search auctions, the "right" bid can be a moving target. This is why marketers often choose automated bidding solutions to make frequent bid optimizations using comprehensive data models. These solutions can help marketers make better bidding decisions not only on their high-volume terms, but also on their low-volume terms to drive significant performance gains. Furthermore, advertisers can save hours per week when they transition from manual to automated bidding, and reclaim valuable time they can reinvest in other strategic optimizations.

Note: Please see the glossary on page 18 for terms and definitions.

"Marketers often choose automated bidding solutions to make frequent bid optimizations using comprehensive data models."

Google Ads automated bidding

Google Ads automated bidding is an enterprise-class solution that helps advertisers automatically set bids based on performance goals. Smart Bidding is a set of automated bidding strategies that use machine learning to optimize for conversions or conversion value. Smart Bidding sets precise bids for each and every auction to help drive higher conversion volume or conversion value at a cost efficiency that is comparable to or better than existing performance goals. It offers three core capabilities:

- True auction-time bidding
- Adaptive learning at the query level
- Rich user signals and cross-signal analysis

Let's explore each of these in more detail.

More than **80%** of Google advertisers are using automated bidding.

Source: Google Internal Data, Global, 2021-03-16 to 2021-04-12.

True auction-time bidding

For conversion and value-based bid strategies, Smart Bidding offers true auction-time optimization that **sets bids for each individual auction, not just a few times a day**. This gives advertisers a more precise level of bid optimization and the ability to tailor bids to each user's unique search context. Rather than only adjusting bids based on aggregate performance across users, Google Ads bidding algorithms also evaluate relevant contextual signals present at auction-time such as the time of day, the specific ad creative being shown, or the user's device, location, browser, and operating system.

Identifying the conversion opportunity of each and every auction helps to differentiate bids and optimize with a higher degree of precision. Take a finance advertiser, for example. It may be true that iOS users are more likely to open a checking account, or that smartphone users located in cities with higher branch coverage are more likely to visit a bank location. With auction-time bidding, Google Ads can detect the presence of signals like these to more accurately predict conversion rate or value and set a more informed bid for every search query.

Auction-time bidding offers even more bidding frequency and precision

Before auction-time bidding, marketers would typically set bids for each keyword manually.

Manual bidding: Setting a bid manually for each keyword could be achieved by changing bids in the Google Ads UI, using rules-based performance criteria (e.g. when impression share falls below X%, increase bids by Y%) or using the API. Due to time constraints, advertisers may only optimize bids for a subset of their keywords during each round of optimization, such as top performers or by product category.

However, the increasing amount of data available today makes it more complex for advertisers to set manual bids based on each user's unique context. With auction-time bidding, contextual signals are used to set unique bids for each auction.

Google Ads auction-time bidding: Google Ads Smart Bidding utilizes machine learning algorithms to optimize bids for each and every auction. This is the most precise and effective way to set your bids.

Note: If you're using Search Ads 360, you can use Floodlight conversions to optimize campaigns using Google Ads auction-time bidding.

Note: You can implement a Google Ads Smart Bidding strategy while using a third-party search management solution or in-house API to dynamically adjust bidding parameters and report across multiple accounts and search engines.

Adaptive learning at the query level

Machine learning algorithms rely on robust conversion data to build accurate bidding algorithms that predict performance at different bid levels. While high-volume terms often provide plenty of conversion data for modeling, accounts typically have some low-volume or new keywords with little performance history that must be taken into account. For these low-volume keywords, bidding solutions rely on machine learning models to set bids that are the best estimate of conversion rates at that time.

For example, bidding solutions may test different bid levels to build the conversion rate model for a specific keyword. However, this may result in poor performance while the keyword accrues data, which can be a lengthy process depending on search volume. Another common process for modeling conversion rate performance on low-volume keywords is to "borrow" data from the same keyword across match types or from higher-level ad group and campaign performance.

Smart Bidding expands upon this method and improves it by using query-level data across your account. If you're using cross-account conversion tracking, it can also use query-level data from across your manager account. This gives the bidding algorithms significantly more data to make decisions with, and helps reduce performance fluctuations when keyword-level conversion data is scarce.

Why query-level learning improves your bidding

Google Ads bidding algorithms aren't limited by where a keyword lives in your account structure. Instead, conversion data is leveraged at the search query level across ad groups and campaigns. This is especially beneficial for optimizing bids on phrase and broad match keywords, where a wide variety of search queries may match to a single keyword. In these cases, having just one keyword-level bid won't optimize for conversion rate differences across queries.

Furthermore, let's say you add new keywords or move keywords to a different ad group. Google Ads bidding algorithms don't have to relearn performance from scratch. Because they learn at the query level rather than the keyword level, if a search query has already been matching to other parts of your campaigns, the algorithms simply apply what they've learned about it across your account to make more informed bidding decisions.

> "Google Ads bidding algorithms aren't limited by where a keyword lives in your account structure."

Rich user signals and cross-signal analysis

Every search query is different, and bids for each query should reflect the unique contextual signals present at auction-time. Signals like time of day, presence on a remarketing list, or a user's device and location are key dimensions to consider when determining optimal bids. On top of evaluating these signals in each auction, Smart Bidding takes into account additional signals like a user's operating system, web browser, language settings, and many more to optimize for performance differences across platforms and users. This additional context allows Smart Bidding to more accurately predict the conversion likelihood of each auction and set the optimal bid. The list below summarizes many of the important predictive signals Smart Bidding takes into consideration when optimizing bids.

Contextual signals	Description	Example
Device	System can optimize bids based on whether the query is coming from desktop, tablet or mobile	Advertiser: Car dealership Bids take into account if a search for "car dealer locations" is from a desktop computer or a smartphone.
Location	System can optimize bids based on the specific location (down to the city level) the user is located in or searching for, even if their location is set at a higher level	Advertiser: Bank Even if location is set to New York state, bids take into account if a search for "new checking account" is from different cities within the state (e.g. Manhattan vs. Long Island where branch coverage may differ).
Time of day / day of week	System can optimize bids based on the user's local time of day and day of week in their time zone	Advertiser: Coffee shop Bids take into account if a user searches at 7:00 AM before work vs. 12:00 PM at lunchtime on Monday.
List-based audiences (RLSA, Customer Match, similar audience)	System takes audience lists for search ads into account	Advertiser: Online retailer Bids take into account if a user has browsed a product during a previous site visit, is on a loyalty program list you've uploaded, or has a profile similar to existing customers. It also accounts for how recently the user was last seen.
Actual query	System can optimize bids based on the text of the query that triggered the ad, not just the keyword it matches to	Advertiser: Shoe retailer Bids take into account if a user's query is "leather boots" or "boot repairs," even if both queries match to the keyword "boots."

Contextual signals	Description	Example
Ad creative	When you have multiple ad creatives eligible to serve for a given search query, system can optimize the bid based on which creative will be shown, including whether it points to a mobile app	Advertiser: Online travel company Bids take into account if ad shown is the "latest deals" creative or the "popular getaways" creative, or if it points to the mobile site or app, based on which variation has a higher likelihood of converting on the specific query.
Interface language	System can optimize bids based on the particular user's language preferences	Advertiser: Spanish language learning site For the query "learn a new language," bids take into account whether an ad is shown to a user whose Google language setting is English or Spanish.
Browser	System can optimize bids based on the browser the query is coming from	Advertiser: Software company Bids take into account if a user searches for "mac software" from Safari or Chrome.
Operating system (OS)	System can optimize bids based on the user's operating system for that query	Advertiser: Phone accessories seller Bids take into account if a user searches for "phone case" from an Android or iOS device.
Search Network partner	System can optimize bids based on which search partner the ad appears on	Advertiser: Consumer packaged goods brand Different bids placed if query is coming from more relevant searches on an e-commerce site vs. a news site.
Mobile app ratings and reviews	System can optimize bids based on app user ratings and number of reviews	Advertiser: Gaming company Different bids placed based on the rating and number of reviews your app has.

When signals work together

Manual bid adjustments for individual signals like device and location are a great first step to setting more precise bids. However, Smart Bidding goes steps beyond traditional signal analysis. Search context is not defined by just one signal, and Smart Bidding can recognize and adjust for meaningful interactions between billions of combinations of signals that can impact conversion rates.

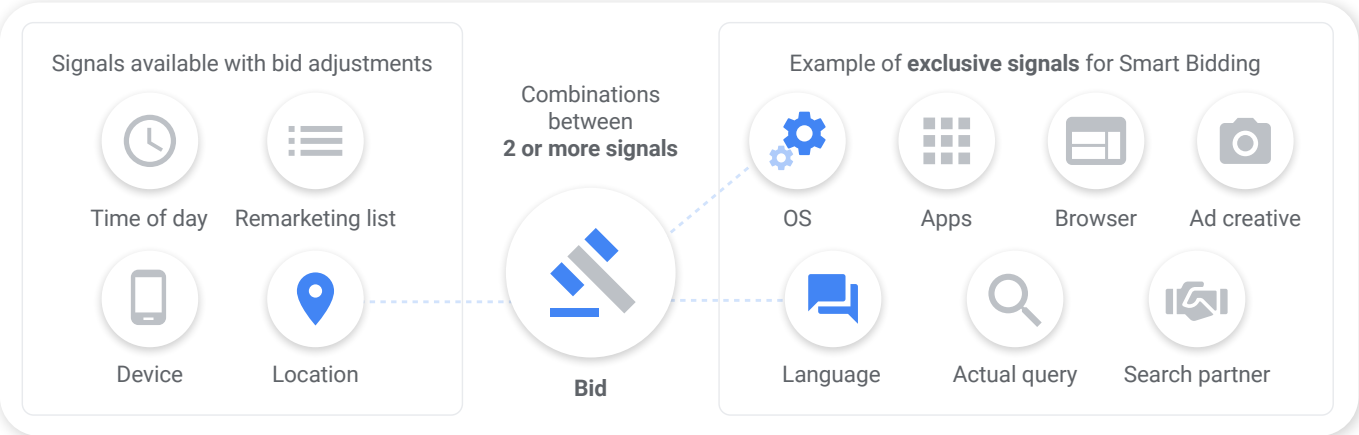
Evaluating signals individually vs. analyzing cross-signal effects

Individual bid adjustments for signals such as device, location, and time of day look at performance data in aggregate. For example, a bidding solution may evaluate how your mobile conversion rate across users compares to your overall computer and tablet conversion rate, and set a corresponding mobile bid adjustment.

Although this method of aggregating data and evaluating performance averages helps to avoid making bid adjustments with insufficient data, it can also overlook the nuanced conversion opportunity between individual auctions. For example, a mortgage lender might determine that their mobile conversion rates are 20% lower than computer and tablet conversion rates and set a mobile bid adjustment of -20% as a result. However, this doesn't account for the times of day when their mobile conversion rates are strong, such as in the mornings, when people may be researching loan options on their phones before work.

Furthermore, when you begin to layer on additional bid adjustments (e.g. for location), calculating them individually and then multiplying them together doesn't account for the interacting effects of these signals. It can even produce unreasonably high bids if you combine multiple, large bid increases with a base keyword bid that's already high.

Smart Bidding evaluates how signals interact with each other to identify meaningful correlations that impact conversion rates. By seeing which signal combinations are most predictive of conversion performance and adding these to bidding algorithms, Smart Bidding can calculate more holistic bids that account for how certain signals work together.



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Bid strategies to help you meet your goals

Google Ads offers multiple automated bid strategies to help you reach your performance goals. These strategies can be applied to a single campaign, across a group of campaigns in an account (portfolio bid strategies), or across a group of campaigns in your manager account (cross-account portfolio bid strategies).

Smart Bidding conversion and value-based bid strategies

Business objective	Bid strategy	When to use it
Conversions	Maximize conversions	To get as many conversions as possible within a fixed budget.
	Target CPA (Target cost-per-action)	To get as many conversions as possible within a target cost-per-action goal.
Conversion value (Revenue, Profit, Lifetime Value)	Maximize conversion value	To get as much conversion value as possible within a fixed budget.
	Target ROAS (Target return on ad spend)	To get as much conversion value as possible within a target return on ad spend goal.

Awareness-based bid strategies

Business objective	Bid strategy	When to use it
Clicks/Traffic	Maximize clicks	To get the most clicks from your budget.
Awareness/Visibility	Target impression share	To show your ad on the absolute top of the page, on the top of the page, or anywhere on the page of Google search results.

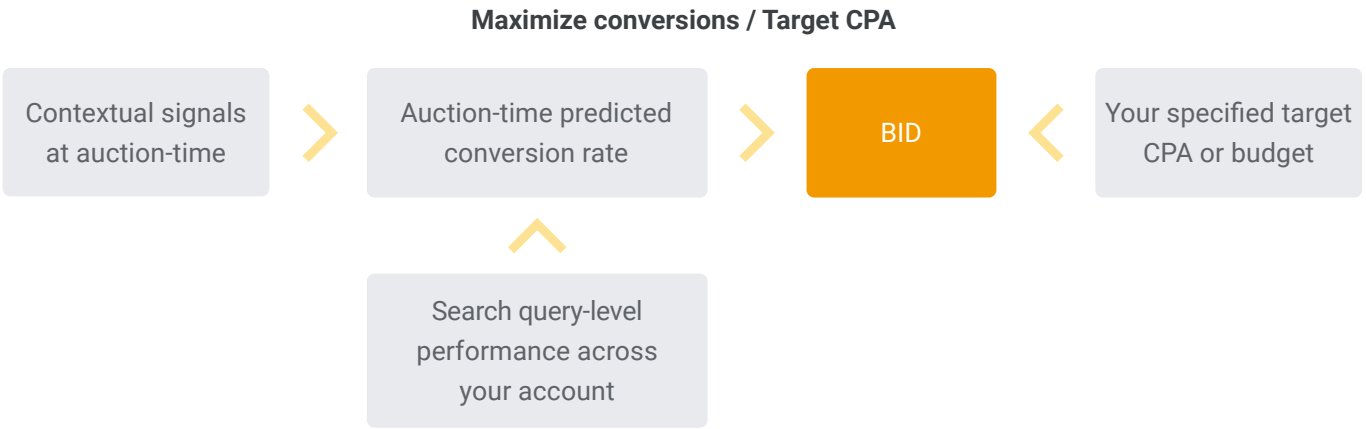
On average, advertisers that switch from a Target CPA to a Target ROAS bid strategy can see **14%** more conversion value at a similar return on ad spend.

Source: Google Internal Data, Global, 2021-03-16 to 2021-04-12.

How Google Ads calculates bids

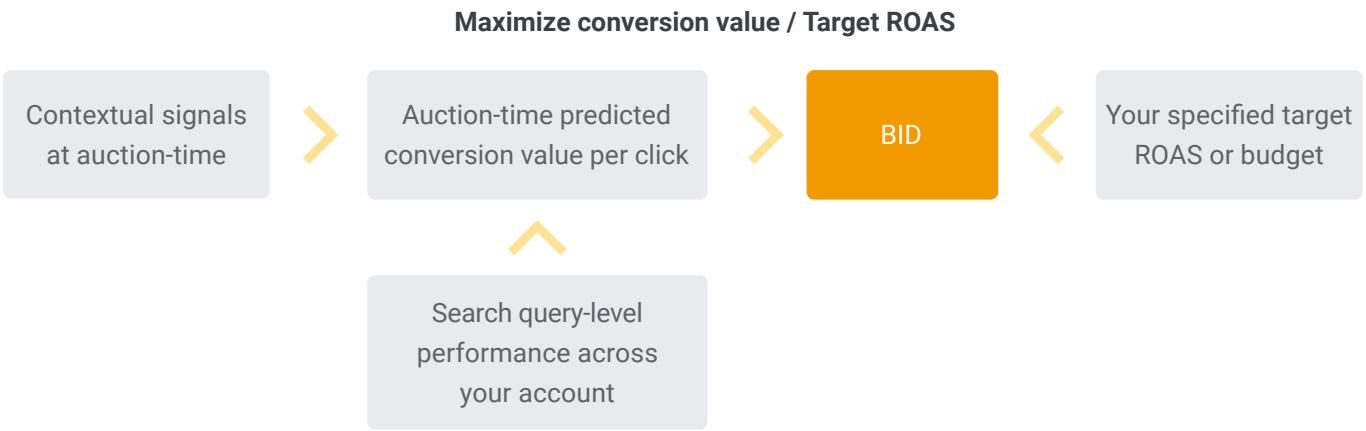
Smart Bidding conversion and value-based bid strategies

Smart Bidding uses Google's machine learning technology to optimize for conversions across every ad auction — also known as "auction-time bidding." Smart Bidding uses machine learning to set millions of unique bids every second across campaigns. Maximize conversions (Target CPA) and Maximize conversion value (Target ROAS) are Smart Bidding strategies.



Maximize conversions: The algorithms predict the conversion rate for a click in each auction based on the specific contextual signals present. For example, if you're a clothing retailer trying to quickly sell last season's styles, Maximize conversions will estimate how likely each click is to convert using signals like remarketing lists, time of day, browser, and operating system. Maximize conversions would then set bids to spend your budget as efficiently as possible while maximizing conversions.

Target CPA: The algorithms predict the conversion rate outcome for a click in each auction based on the specific contextual signals present. In addition to trying to maximize conversions, bids also account for the target CPA you've specified to ensure you're meeting your performance target. For example, if a bid strategy has recently been trending below your set target CPA, the algorithms may increase bids to capture more competitive conversions until we align with the target CPA.



Maximize conversion value: The key difference in bid calculations between Maximize conversions and Maximize conversion value is the use of value as the performance target. The algorithm predicts the probable conversion value at auction-time, as well as the probability of a conversion for a click in each auction based on the specific contextual signals present. Maximize conversion value would then set bids to spend your budget as efficiently as possible while maximizing conversion value.

Target ROAS: The key difference in bid calculations between Target CPA and Target ROAS is the use of value as the performance target. The algorithm predicts the probable conversion value at auction-time, as well as the probability of a conversion for a click in each auction based on the specific contextual signals present. In addition to trying to maximize value, bids also account for the target ROAS you've specified to ensure you're meeting your performance target. For example, if a bid strategy has recently been trending below your target ROAS, the algorithm may decrease bids until it reaches your target ROAS.

Awareness-based bid strategies

Maximize clicks: The same bid is applied across keywords in the bid strategy and is adjusted up or down to ensure you hit your campaign budgets while getting as many clicks as possible.

Note: If your goal is to maximize clicks and you value each click equally, applying uniform bids across keywords, adjusted up or down based on budget utilization, can be as effective as tailoring unique bids for every keyword. Maximize clicks uses this approach to get you the most clicks for your budget. This is especially effective in cases where individual keywords have sparse or highly variable click volume.

Target impression share: Bids are set to help achieve your Impression Share goal across all campaigns using this strategy. You can indicate a goal of showing your ad on the absolute top of the page, on the top of the page, or anywhere on the page of Google search results.

How our bidding algorithms learn

Setting your bid strategy up for success

Implementing a bid strategy with a solid foundation of conversion data will help drive results faster. You should measure all conversion actions that are valuable to your business and include them in the "Conversions" and "Conversion value" columns. Smart Bidding can optimize for conversions in your campaigns with Maximize conversions and Target CPA. With conversion values, Smart Bidding can deliver even better results by optimizing your return on investment with Maximize conversion value and Target ROAS. After you set up conversion tracking, wait for a few conversion cycles before implementing a new bid strategy so that our algorithms can adjust.

Note: A **conversion cycle** is the amount of time it takes for a click to result in a conversion. If you're importing conversions into Google Ads, conversion cycles will also include the time it takes for conversions to be reported in your account. For example, if the majority of clicks yield conversions within 2 days, the system would adjust conversion performance in approximately 2 days.

Use the bid strategy report to identify how long it takes for your customers to convert. Where data is available, you can also use the bid strategy report to identify how many conversions Google Ads predicts could still be reported based on your typical conversion delay.

Looking at your optimization score and recommendations can provide suggestions on what bid strategy and targets to set. Overly-aggressive targets can affect your volume and make it harder to see if your bid strategy is delivering results. To avoid this, start with targets that align with your historical CPA or ROAS from a time period where no new conversions are expected due to conversion delay. For example, if you have a 2 day conversion delay, you can look at your historical CPA or ROAS over a 28 day period, while excluding the past 2 days from your evaluation

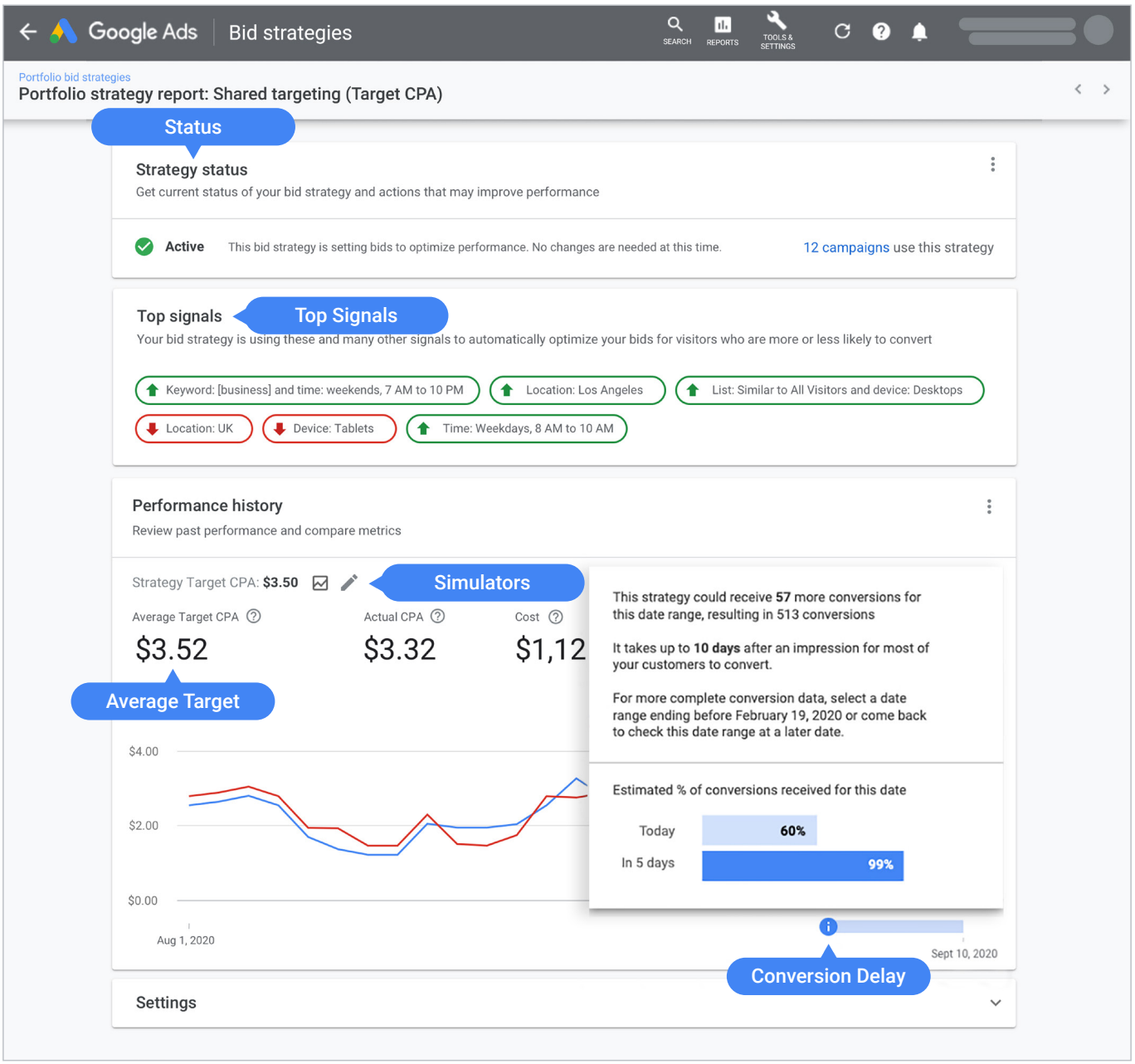
When enough data is available, you may also see impact estimates surfaced alongside your Smart Bidding recommendation. These estimates answer the question "If my campaign used the recommended bid strategy and target, what impact would I have seen?" Impact estimates are based on your campaigns' 7-day performance data and assume no other changes to auction dynamics and your accounts or campaigns.

Smart Bidding is always learning, even from campaigns using manual bidding. If you have multiple campaigns with the same performance goals, you can use portfolio bid strategies and shared budgets to manage them together. Once Smart Bidding is running, monitor performance and adjust as needed.

Note: Use campaign drafts and experiments to test changes and understand their impact before committing. You can use drafts to prepare changes to a campaign. Then, apply these changes to your campaign or create an experiment to understand the impact of Smart Bidding before you apply it.

Bid strategy reports provide insight into what's going on under the hood

Google Ads bid strategy reports give you visibility into how your automated bid strategies are performing. They include tailored metrics to show you what's most relevant to each type of bid strategy, as well as other important data like your bid strategy status, top signals, target and budget simulators, average target CPA, average target ROAS, and conversion delay.



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When you have little to no conversion data available, Smart Bidding can still use query-level data beyond your bid strategy to build more accurate initial conversion rate models. This helps it make more informed bidding decisions from the start. It then uses Bayesian learning to continuously improve these models as it accrues conversion rate data at more granular levels (e.g. for a search query mapped to specific ad copy or landing pages).

You can also use Google Ads data-driven attribution (DDA) modeling to understand the contribution of each keyword across the conversion path. DDA is fully integrated with Smart Bidding in Google Ads. If you use an automated bidding strategy to drive more conversions or conversion value, your bids will use this data to help you meet your goal.

Adapting to your performance changes

As your business grows and you make changes to your campaigns, Smart Bidding continues to update your bidding algorithms to align with any corresponding shifts in performance. Fluctuations in performance are often driven by internal factors like adding new keywords, testing new ad copy or updating landing pages. It can also be influenced by external factors like seasonality or competition. Allow enough time (at least one conversion cycle) to pass before evaluating performance.

Adjusting targets to meet your business objectives

When adjusting your targets, ensure they're aligned with your overall business objectives. Consider factors like new performance goals, budgets, and market conditions. You should feel comfortable changing CPA and ROAS targets as frequently as you would like, and by as large a magnitude as you would like. Smart Bidding reacts immediately to any target change by adjusting bids.

To help you do this, you can use tools like Smart Bidding simulators to fine tune CPA and ROAS targets. Smart Bidding simulators show the relationship between various targets or budgets and how they affect cost, conversions and conversion value. It tries to answer the question: "What would be the impact on performance if I used a different target or budget?" When available, you can also use the Recommendations page in Google Ads to find opportunities to adjust your targets or budgets to get more conversions.

Note: Smart Bidding is always training on new data to set optimal bids. Changing a target won't trigger a 'learning' status, and won't reset anything Smart Bidding has already learned about your account. A target change will also quickly result in a change in bids. For example, if you need to increase spend on a campaign, you can quickly do so by increasing your CPA target by the same proportion that you want to increase bids. The advantage of Smart Bidding is that even though bids can be controlled in this way, Smart Bidding will continue to find the most cost effective conversions and conversion values.

As with most campaign optimizations, you can use the bid strategy report to monitor performance after making a change. In some rare cases, you may see some volatility for a conversion cycle or two. For example, you may see volatility if a large change in targets causes you to enter an entirely new set of auctions. This would be similar to what you would see if you were using manual bidding and suddenly ramped up your bids. Remember to evaluate performance after 1-2 conversion cycles to ensure conversions are complete due to conversion delay.

Note: Smart Bidding takes **seasonality** into account, and in most cases, it will automatically handle seasonal increases in traffic without requiring any input. At the same time, we know there are key moments for your business when you can anticipate significant shifts in conversion rate, like during a Black Friday sale or when a new product launches.

To prepare for these brief, anticipated changes in performance, you can adjust targets on the day of a sale or use seasonality adjustments. For example, let's say you're planning a flash sale for the weekend. Historically, you've seen a 50% increase in conversion rates when you've run a similar sale. With seasonality adjustments, you can apply a predicted conversion rate adjustment. Smart Bidding will then consider that adjustment for the date range selected while trying to hit your target CPA.

Adjusting for data recency and conversion delays

Our algorithms apply **adaptive historical weighting** to rely more heavily on recent data when adjusting bids while also accounting for the length of your conversion cycle. We recognize that recent performance is likely more predictive of future performance, but this should weigh less heavily against clicks that aren't yet seeing conversions due to conversion delays.

For example, if you're an advertiser such as a car dealership or travel booking company with lengthier conversion cycles, your recent data may not be as useful because those ad clicks require a longer period of time to yield conversions. As a result, we'll weigh that recent data less heavily compared to advertisers with shorter conversion cycles such as a clothing retailer or food delivery service. This helps prevent overreactions to recent clicks that are experiencing conversion delays, which could lead to unnecessary bid reductions. We also automate this process so that advertisers don't have to manually calculate and frequently adjust for these conversion delays themselves.

Key takeaways

Google Ads automated bidding helps you optimize bids at scale across your business goals. Smart Bidding uses Google's machine learning technology. Automated bidding gives you:

- **Bid strategies that align to your goals:** Choose from a variety of bid strategies to meet your business objectives, conversion goals, and conversion value goals.
- **True auction-time bid optimization:** Smart Bidding optimizes bids for each and every auction, helping you set more precise bids tailored to each user's search context and meet your performance goals more effectively.
- **Query-level performance modeling:** Smart Bidding uses search query-level conversion data across your account to help solve for data scarcity that individual keywords may face. This allows the algorithms to bid more accurately on low-volume keywords or keywords that are still building performance history.
- **A richer set of contextual signals:** In addition to evaluating key signals like device, location, and time of day, Smart Bidding accounts for other signals like browser, operating system, language, and many more. This helps incorporate the search context and conversion likelihood of each auction into every bid. It also considers signal combinations that have a statistically significant impact on conversion rate, which individual bid adjustments may not capture.
- **Algorithms that keep learning:** Smart Bidding continuously updates your bidding algorithms to align with changes in performance and adapts to your business' specific conversion cycle to know how heavily to weigh recent versus historical data.

Visit our Help Center to find the right bid strategy for your campaigns and read our best practices guide to see how you can get the most out of Google Ads automated bidding.

Glossary

algorithm: A set of rules to be followed by a computer in calculations.

attribution: How much credit an ad interaction gets for a conversion.

automated bidding: A solution that helps advertisers automatically set bids based on performance goals.

Bayesian learning: An approach to data analysis using Bayes' theorem. Bayes' theorem is an equation to determine how one can use observable data to make inferences on unobservable things.

bid adjustment: Changes to manual bids which allow you to show your ads more or less frequently based on where, when, and how people search.

conversion cycle: The typical amount of time it takes for a click to result in a conversion.

CPA: Cost-per-action, calculated as total cost divided by total conversions.

data model: Models organize data and standardize how they relate to one another.

machine learning: A system that trains a predictive model from input data.

remarketing: A way to connect with people who previously interacted with your website or mobile app.

ROAS: Return on ad spend, calculated as total conversion value divided by total spend.

search auction: The process that happens with each Google search to decide which ads will appear for that specific search and in which order those ads will show on the page (or whether or not any ads will show at all).

search query: The word or set of words one enters when searching on Google.com or one of our Search Network sites.

search signals: Attributes or context about a search query.

seasonality: Fluctuations in consumer interest and purchasing habits that occur at specific, regular intervals.

Smart Bidding: Automated bid strategies that use machine learning to optimize for conversions or conversion value.