

Understanding the Google Ads Auction

Document Outline

Every expert Google Ads marketer needs to know the fundamentals of Google Ads, but how many have a deep understanding of how the Google Ads Auction works? In this document I will explain/demonstrate:

1. What the Google Ads Auction is
2. Google's 6 Factors in the Auction
3. The Perceived Order of Operations during the Auction
4. What Ad Rank Is
5. Breaking Down the Quality Score
6. Examples of how the Quality Score is Calculated
7. How Google Determines Ad Rank
8. How to Make Your Ad Rank Work In Your Favour
9. How to Control & Influence Your Ad Rank
10. Post Auction Metrics
11. How to Interpret Post-Auction Metrics
12. The Auction From Inside Google
13. How Google Calculates LTV (Ad Rank)
14. How Google Decides an Advertiser's Actual CPC
15. How Automated Bidding Can Increase Your Ad Rank
16. Links to the Anti-Trust Documents

Throughout this document, I will provide visual explanations, real-life analogies and practical examples to help even the newest Google Ads manager understand how the auction works.

What's the Google Ads Auction?

Google's auction acts similarly to any other real estate auction. The auctioneer (Google) shouts a price, and the bidders (competitors) will raise a hand, acknowledging they will raise their bid. When the auctioneer shouts a price that is above the price the bidder is willing to

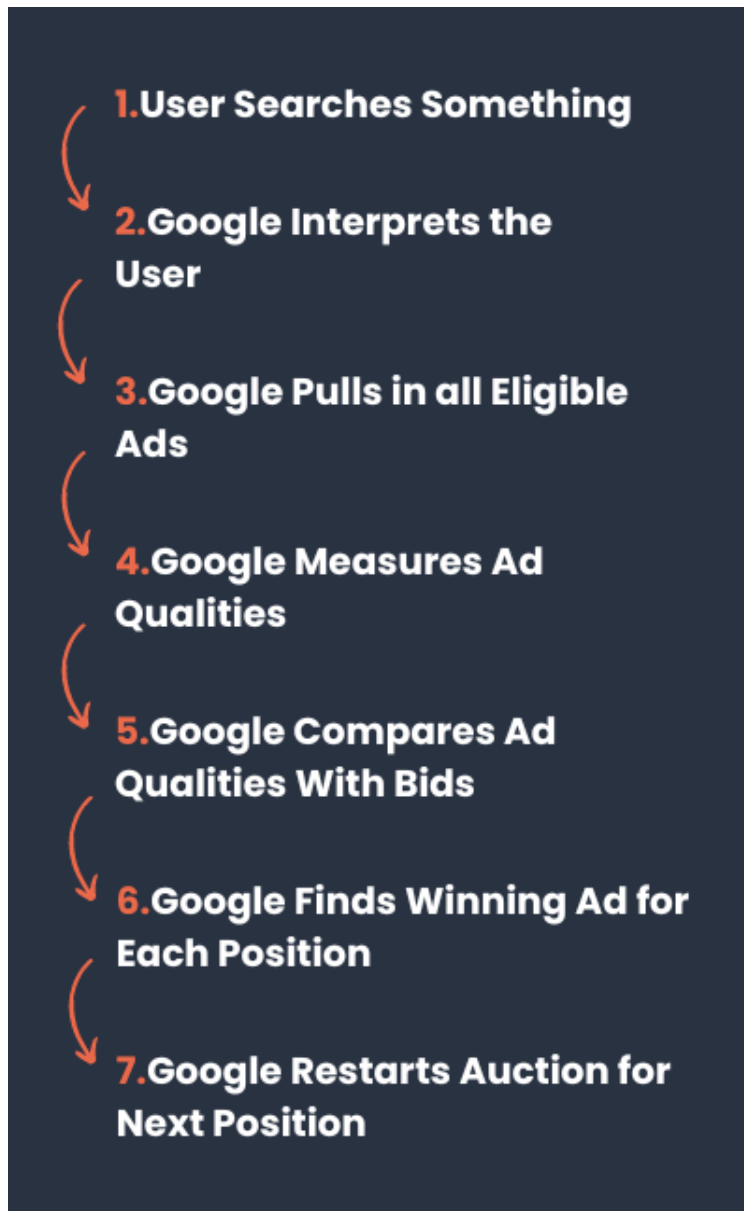
pay, the bidder will leave the auction. Finally, the auctioneer will have 1 final bidder, who will pay the winning bid for the property (ad position).

Unlike most real estate auctions where everyone goes home once the auction is over, Google's auction will get ready for the next round, which is the 2nd ad position. With the top bidder having won the 1st ad position, all bidders re-enter the auction for the 2nd position and this process continues until there aren't any bidders left (or no bidders are willing to pay the reserve price).

Google's 6 Factors in the Auction

1. **Your Bid:** What's the maximum price you're willing to pay per click?
2. **Your Ad Quality:** The relevancy of your ad and usefulness of your landing page experience to the user. This is summarised by your Quality Score.
3. **Impact from Ad Assets & other Ad Formats:** How relevant your ad assets are to the user's search.
4. **Ad Rank Thresholds:** If your ad quality hits the minimum threshold to be shown in certain positions.
5. **Context of your Ad:** Does your ad work with the user's signals such as their location, time of day, device, intent, search behaviours etc.
6. **Auction Competitiveness:** If 2 competitor's ads have the same ad rank, the auction will favour the competitor who is willing to pay more for that position.

Process of Operations



1. **User Searches Something:** Fairly self-explanatory!
2. **Google Interprets the User:** Based on audience signals, behaviour, intent, time of day, device, location etc, Google will interpret the user to understand better what a high-quality ad will look like to that user.
3. **Google Pulls in all Eligible Ads:** Google will look at all ads eligible for the search term, based on keyword targeting and quality scores.
4. **Google Measures Ad Qualities:** Using the 3 quality scoring factors; Ad Relevance, Landing Page Experience & Exp CTR, Google will assess the quality score of each eligible ad.
5. **Google Compares Ad Qualities With Bids:** Google will use a metric called an LTV Score (long-term value score, later explained) to decide which ad deserves which

rank. At this stage, Google will calculate each advertiser's LTV Scores to determine the ranking order.

6. **Google Finds Winning Ad for Each Position:** Each bid is determined by the cent, so if Competitor A bids \$3.40 and Competitor B bids \$3.41, Competitor B will win the auction. The winning competitor will pay \$0.01 more than the second-best competitor.
7. **Google Restarts Auction for Next Position:** Once Google has found the winner for the first position, the auction ends and a new auction begins for position 2 (and so on).

Understanding Ad Rank

There are many factors considered when Google determines your ad rank. Firstly, your Quality Score.

What is a Quality Score?

A Quality Score is a summarised value out of 10, scored by 3 factors:

1. Ad Relevance
2. Landing Page Experience
3. Expected Click-Through Rate

Let's break this down further:

Ad Relevance

Google's Definition: How closely your ad matches the intent behind a user's search.

A Better Understanding:

- Keyword Matching: How relevant is your keyword to the search term?
- Keyword Targeting: Does your keyword match the user's search intent?
- Ad Copy: Does your ad copy reflect the search term?
- Ad Asset Relevance: Are your ad assets (ad extensions) relevant to the search term?

Landing Page Experience

Google's Definition: How relevant and useful your landing page is to people who click your ad.

A Better Understanding:

- Landing Page Usefulness: What determines landing page usefulness? It's unclear, however best bets are bounce rates, whether the user triggers a conversion event, time on page and events per session.
- Relevance: When Google reviews your ad, they'll crawl your site and assess whether your landing page copy reflects the user's search terms.
- Load Speeds: Does your site have a reasonable load time?
- Website Security: Does your site have an SSL certificate? Is your site clean of viruses or other security risks?

Expected Click-Through Rate

Google's Definition: The likelihood that your ad will be clicked when shown.

A Better Understanding:

- Historical CTR: Does your ad historically have a good CTR?
- Ad Copy: Similarly to relevance, does your ad copy reflect the search term?
- Ad Assets: Again, similar to relevance, do your ad assets reflect the search term? Do you have ad assets, like Business Logo & Name, Sitelinks, Callouts, Images etc.
- Bids: Are you allowing your ads to bid high enough for prominent positions?

Back to Quality Score

So how is the Quality Score determined? Each of the above factors is given 1 of 3 scores.

1. Below Average
2. Average
3. Above Average

Depending on the combination of the above scores, your keyword will be provided with a quality score numbered from 1-10. The calculation is done like this:

- Keyword 1:
 - Ad Relevance: Above Average
 - Landing Page Experience: Above Average
 - Exp CTR: Above Average
 - Quality Score: 9-10/10
- Keyword 2:
 - Ad Relevance: Above Average
 - Landing Page Experience: Above Average
 - Exp CTR: Average
 - Quality Score: 6-8/10
- Keyword 3:
 - Ad Relevance: Average

- Landing Page Experience: Below Average
- Exp CTR: Below Average
- Quality Score: 3-4/10

It's unclear as to exactly how much each of the rankings contributes to your quality score.

Now that we have found your Quality Score, we can go to the next step on finding your Ad Rank.

Environmental Factors

By environmental factors, I'm not talking about the weather or whether they're on the beach. We're talking about the following factors:

- Device: What device are they searching on, and how has this device previously performed (or if you have bid/conv adjustments for that type of device).
- Location: Where is the user located? If you're service-based, how far are they from your business location? If you're e-commerce, do you deliver to their location, or is your shipping more expensive for their location?
- Time: What day of the week is it? What hour of the day are they searching?

Audience Signals

Audience signals are behaviours, demographics or interests of users. Some of these factors are:

- Previous Searches: Is the user's search history showing that they might be in-market?
- Refined Searches: Has the user refined their search term to be more specific to what they're looking for?
- Search Intent: What is the likely intent behind the user's search term?
- Affinity & In-Market Interests: What does their online search behaviour look like? If you're a travel agency, and a user has shown a strong search history in researching vacation destinations, this would be an interest that would support your business.
- Life Events & Detailed Demographics: Are there any major life events that have happened recently? Does the user have a specific detail about their demographic, such as the industry they work in?

External Factors

These are factors outside of the ad auction that will provide a better experience for the user. This could be:

- Google Maps Listings: If the user is looking for something local, a specific set of Google Map Listings may be more relevant.
- Organic Results: Is there an organic result that's more relevant to the user and what they're looking for?
- Competitors Ads: Are competitor's ads more relevant? For example, a branded search or trademarked terms.

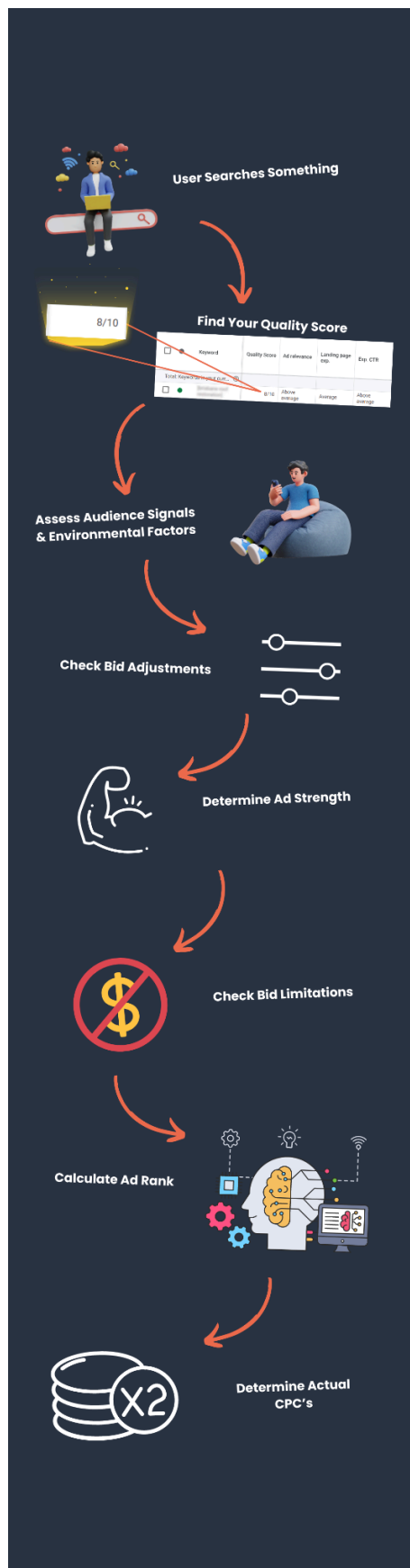
Determining Ad Rank

Now that Google has your Quality Score, has assessed the user's signals and has determined the user's search intent, Google can start to determine your Ad Rank. This is the perceived order of decision-making:

1. Determine the user's search intent
2. Find your Quality Score
3. Assess Audience Signals & Environmental Factors
4. Check any bid adjustments
5. Determine your ad strength against the above factors
6. Check for bid limitations (important as if you're not willing to bid high enough, this will affect your ad rank)
 - a. Do you meet the Ad Rank Threshold?
7. Calculate Ad Rank (Google internally refers to this as the 'LTV Score', later explained)
8. Determine Actual CPC's based on Ad Rank



Visual Representation of the Process



How to Make Ad Rank Work in Your Favour

Now that we understand what your Ad Rank is, we need to understand what we can do to make Auction work in our favour. This is where we introduce Pareto's Principle.

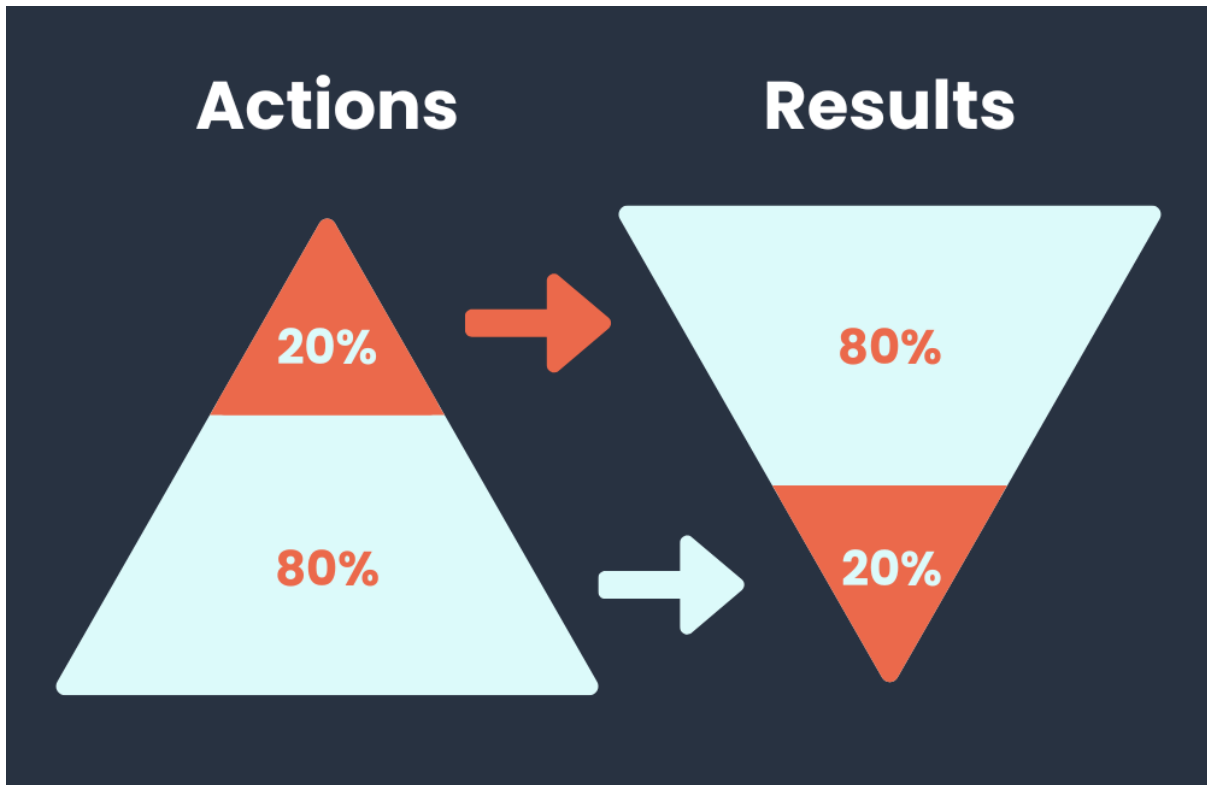
Many of you may have heard of it before, but Pareto's Principle is that 20% of actions cause 80% of results, and 80% of actions cause 20% of results. The moral of the story is, what's the 20% that has the biggest impact on our Ad Rank and what's the 80% that can squeeze the last 20% out?

The 20%

- Keywords (Ad Relevance)
- Ad Copy (Ad Quality)
- Landing Page (LP Experience)
- Bid Limits

The 80%

- Ad Assets
- Bidding Strategy
 - Automated Bidding
- Location Settings
- Bid Adjustments
- Negative Keywords
- Conversion Action Setup



The 20%

Keywords

Ensure your keywords are as close as possible to the terms you'd like to show for. In the early days, it's a good idea to start with phrase or exact match to maintain control over the kind of search terms your ads show up for. Once you're generating enough consistent conversions and you're happy with the search terms you're showing for, test opening this to broad match with automated bidding. Also, remember, Ad Relevance isn't calculated by whether your search term exactly matches your keyword, it's whether your keyword matches the **intent** if the user's search term.

Ad Copy

My best practice is to include 3-5 headlines that reflect the search terms I want to show for. This helps with relevancy and gives the user confidence that your link is what they're looking for. Also, test different ad customisers. The main 2 are dynamic keyword insertions and dynamic location insertions. Dynamic Keyword Insertions will replace your headline with the user's search term, making your headline as relevant as possible. Dynamic Location Insertions will replace a portion of your headline with the user's location (great for 'near-me' keywords/searches).

Landing Page

Test your landing page speed, make sure you have your SSL certificate, add metadata to your pages (head titles and descriptions are the biggest), make sure your landing page copy reflects your keywords, optimise your landing pages towards your desired conversion action, and test using mobile-only landing pages.

Bid Limits

If you're using a bidding strategy that allows you to set bid limits, make sure you're not setting your bids too low. If you're using mCPC, also make sure you're allowing enough headroom for your bids. Later on, I'll go through some metrics to help determine if your bids may be affecting your Ad Rank.

The 80%

Ad Assets

Make sure you include as many relevant ad assets as possible. Once you've completed the Advertiser Verification, you can add your **Business Name & Logo** (this is a must!). Also include these extensions:

- **Sitelink:** If possible, tailor your sitelinks for each ad group. Also, include as many as you can. E.g, if I'm selling Addidas shoes, I may want to test including links to specific types of shoes (Originals, Samba, Gazelle, Yeezy's etc). Don't just settle with the generic 'About Us' sitelinks.
- **Callouts:** Promote unique offers, service points, or accolades. Where possible, include some of the keywords for that ad group too. E.g, using the example from above, 'Official Addidas Retailer'.
- **Images:** Always include images! This is a very effective way to make your ads stand out, helping your CTR.
- **Structured Snippets:** These are great for advertising categories of products/services you provide. Using the Addidas example, you could use Styles (each Addidas shoe style), or more generically, Brands (different shoe brands you sell).
- **Call Extensions:** Crucial for any lead-gen business. This allows the user to get in contact with 1 less click. This is especially important for any emergency-based businesses (emergency locksmiths or roadside support for example).

- **Location:** Very important for retailers & lead-gen businesses. Including your location helps Google bid more appropriately to users near your location and also allows for Distance reports.
- **Price:** Promote products before users even get to your page. This creates a Shopping experience using Search campaigns.
- **Promotion:** If you're running a sale, promote it! This will help your Exp CTR.

Bidding Strategy

Once you've captured enough conversion data, automated bidding strategies can be your best friend! These bidding strategies will put audience signals to good use, allowing Google's machine learning to decide when to bid higher in auctions, further increasing your Ad Rank and competitiveness in the auction.

Location Settings

This sounds fairly obvious but make sure you're targeting serviceable locations. Changing 'Presence or Interest' to 'Presence' will ensure you're only showing to users in your serviceable location.

Bid Adjustments

Bid adjustments can be very powerful. For example, if you know your users convert better on Mobile, adding a positive bid adjustment allows you to be more competitive in the auction, which may be the deciding factor Google needs to put you in more prominent positions.

Negative Keywords

Add negative keywords for terms you don't want to show for. This can help your Ad Relevance as you guide Google towards the right search terms. As you're starting to show for more relevant terms, you'll be giving your Exp CTR score a chance to increase too.

Conversion Action Setup

Make sure you're tracking conversions accurately! It's not just for reporting but gives Google feedback on the effectiveness of your landing page. This will help your Landing Page Experience.

Post Auction Metrics

So now that we have a good understanding of how the auction works and know what we can do to increase our Ad Rank, how can we analyse our results post-auction?

While the obvious answer is 'more conversions', there are other metrics we can look at to identify areas for improvement.

First things first, let's define some of these metrics.

Search Impression Share

Definition: Search Impression Share is a breakdown of the percentage of times you were eligible to show vs the number of times you were shown.

Search Impression Share metrics in most cases are going to be your main set of stats to know/find;

1. How competitive your bids are
2. Opportunities to scale
3. Ad quality improvements

Search Top IS

This is the percentage of times your ad was shown in the top positions (generally above top organic results).

Search Abs Top IS

This is the percentage of times your ad was shown in the most prominent search position.

Search lost IS (rank)

The estimated percentage of times your ad was not shown due to a poor ad rank.

Search lost IS (budget)

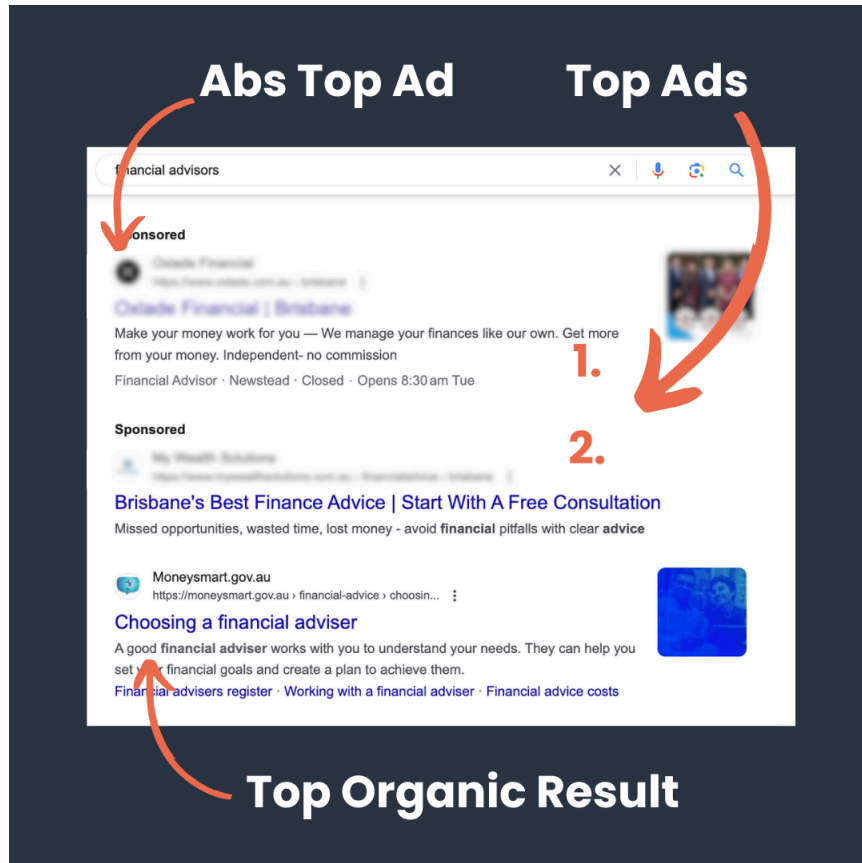
The estimated percentage of times your ad was not shown due to low budget.

Impr. (Top) %

The percentage of your impressions anywhere adjacent to the top ads.

Impr. (Abs Top) %

The percentage of your impressions is shown as the very first ad among top ads.



Let's break this down into plain English with the example below:

	Search impr. share	Search top IS	Search abs. top IS	Search lost IS (rank)	Search lost top IS (rank)	Impr. (Abs. Top) %	Impr. (Top) %
1.	75.79%	70.53%	58.95%	15.79%	21.05%	77.78%	93.06%
2.	31.43%	25.71%	< 10%	49.52%	55.24%	15.15%	81.82%
3.	11.69%	10.54%	< 10%	7.66%	8.81%	52.46%	90.16%

The 3 keyword examples above are keywords from different campaigns and accounts

Keyword 1

This keyword was eligible to show 75% of the time, eligible to show in the top positions 70% of the time and eligible to show in the absolute top position 59% of the time. We didn't show 15% of the time due to our Ad Rank not meeting the threshold and didn't show in the top positions 21% of the time due to our Ad Rank not meeting the threshold and bidding too low. However, when we did show, we were in the top positions 93% of the time and the absolute top position 93% of the time.

Takeaways? This keyword is very prominent. Our Ad Rank has been strong for this keyword as we are only losing 15% of the time due to the Ad Rank Threshold. Considering we are in the top positions 77% of the time when we are shown, I can see we aren't limited by bidding limits. My areas for improvement on this keyword will be increasing my quality score.

Keyword 2

This keyword was eligible to show only 31% of the time, eligible to show in the top positions 25% and eligible to show in the absolute top position less than 10% of the time. We aren't being shown 49% of the time due to not meeting the Ad Rank Threshold and not showing in the top positions 55% of the time due to not meeting the Ad Rank Threshold and bidding too low. However, when we do show, we are in the top positions 81% of the time and in the absolute top positions 15% of the time.

Takeaways? This keyword has a poor Ad Rank. We aren't showing 49% of the time because our Ad Rank doesn't meet the threshold. Also, when we do show, we are only showing in the very first position 15% of the time. This can be caused by 2 factors. 1, I'm severely limiting my bids with bid limits, or 2, my quality score is low, meaning I need to increase my bids or work on a better advertising experience. My areas for improvement will be to check the keyword quality score, check the search terms I'm showing for and ensure my ad assets and copy aren't generic. If my quality score is ok, I'm very likely limiting myself due to bid limits.

Keyword 3

This keyword was eligible to show only 11% of the time, eligible to show in the top positions 10% of the time and eligible to show in the absolute top position less than 10% of the time. We aren't being shown 7% of the time due to not meeting the Ad Rank Threshold and not showing in the top positions 8% of the time due to not meeting the Ad Rank Threshold and bidding too low. However, when we do show, we are in the top positions 90% of the time and the absolute top position 52% of the time.

Takeaways? This one's a little different. If we are limited by our Ad Rank 8% of the time, and when we do show we are in the top positions 90% of the time, why aren't we showing more often? Assuming there aren't any disapprovals or limitations, this is due to Search lost IS (budget), meaning our campaign budget isn't high enough to show more often. The area for opportunity here is to increase my campaign budget. The Search lost IS (budget) metric can be shown at the campaign level to confirm this.

Getting Technical

This section is what most people call, "overcomplicating". If you're new to Google Ads, I recommend mastering the above first, as this section is about explaining the technical portions of the auction which may not deliver direct benefits to the advertiser.

In a recent Anti-Trust trial, Google was forced to release some documents to provide more clarity on how the auction works. This includes how the algorithm determines the Ad Rank (or LTV Score), manual vs automated bidding in the auction and other predictive measurements.

Anything below in *italic* is quoting the anti-trust document word for word.

Long-Term Value Score (LTV Score)

The Long-Term Value Score is a calculation Google's algorithm uses to find whether or not the benefits of showing a particular ad will exceed the costs.

This is calculated by another metric, internally known as the eCPM (expected cost per mille (1,000 impressions)). This is then calculated per ad impression.

'The eCPM of an ad impression is a function of the advertiser's bid (e.g, the most the advertiser is willing to pay Google per click) and the probability that the user will actually click on the ad. This probability is called the "expected click-through rate", known internally as the "predicted click-through rate", or pCTR.'

eCPM

Expected Cost Per Mille, used to calculate the ad impression cost (the expected value Google will generate when an advertiser's ad is shown).

pCTR

Predicted Click-Through Rate, the expected click-through rate for the ad.

'The predicted benefits to Google of an ad impression are then offset by the predicted costs to Google of showing the ad, which include (i) an "impression cost", the cost of showing a low-quality ad (i.e., the probability that the text of the ad copy itself, or ad "creative", is low quality, multiplied by a weight), and (ii) a "click cost", the cost that the user will have a low-quality experience on the advertiser's landing page after clicking on the ad, multiplied by a weight. Our prediction of the quality of the ad itself being good is known internally as "Predictive Creative Quality", or "pCQ", and our prediction of the quality of the landing page experience being good is known internally as "pLQ".'

pCQ

Predictive Creative Quality is a prediction of the ad quality.

pLQ

Predictive Landing Page Quality is a prediction of the landing page experience being good.

'A key element of the LTV algorithm is the inverse relationship between the advertiser's bid and the increased quality needed to yield a similar ranking if the bid were lowered. This inverse relationship has been central to Ad Rank since the early days of AdWords. Ads with low-quality metrics (i.e., low pCTR, pCQ, and/or pLQ) would need higher bids to successfully compete against ads with higher-quality metrics. And vice versa, high-quality ads can have lower bids and still compete successfully in auctions. This inverse dynamic helps incentivize advertisers to improve the quality of their ads.'

Understanding LTV

Ads with low-quality metrics need higher bids to compete against ads with higher-quality metrics. Vice Versa. This is not an internally recognised naming convention, however, I will use this as it refers to previous mentions in this document.

'Only ads with a positive LTV ($LTV > 0$) are eligible to show on SERP'.

'LTV is a critically important underpinning of Ad Rank because it helps ensure that Google doesn't earn quick short-term gains at the expense of longer-term profitability.'

Bad Clicks

This is a calculation to determine the cust side of the equation. This calculation is used to find the probability of a good click. This is calculated as shown; $1-pCQ$ & $1-pLQ$. Or in plain English, the probability of a bad click based on the predicted creative quality and the probability of a bad click based on the predicted landing page quality (or experience).

LTV Summary

The Long-Term Value Score is an important metric to understand as it defines the value on whether an ad is eligible to show or not. The LTV Score is calculated by weighing the eCPM against the pCTR, pCQ, and pLQ and subtracting the probability of a bad click. If the LTV Score is below 0, then the ad isn't eligible to show. The LTV Score is created to ensure Google is generating long-term profit instead of short-term gains. This ultimately decides if the ad is of quality based on previous users' experiences and prevents user 'blindness' (being trained to skip over ads due to low quality).

How the Actual CPC is Calculated

Now we know what scoring system is used to decide if an ad is eligible to be shown or not, how does Google decide how much the advertiser should pay per click?

Let's return to the auction analogy at the very beginning of this document. However, instead of advertisers raising their hand on a price they're happy to pay for, they're now using their LTV Score. Using the analogy to simply explain this, once Google has calculated the ad LTV Score (Max CPC + predictive metrics (pCQ, pCTR, pLQ)), Google will have found its winner. For example, if Advertiser A has an LTV Score of 42 and Advertiser B has an LTV Score of 28, Advertiser A wins the auction and will just enough to beat Advertiser B's LTV Score (by the nearest billable unit, \$0.01 in most cases).

Google provides the following table for clear visualisation:

Auction No. 1: Top Slot, First Position ("Top1")⁴⁴

Advertiser	Bid	Quality	Formats	Base LTV Score
Advertiser A	high	high	high	42
Advertiser B	medium	high	high	28
Advertiser C	medium	high	medium	16
Advertiser D	medium	high	medium	4
Advertiser E	medium	medium	low	-18
Advertiser F	medium	medium	low	-22
Advertiser G	medium	medium	low	-30
Advertiser H	medium	low	low	-40

To further explain, let's assume Advertiser A's Bid Limit was \$1. To beat Advertiser B's LTV Score of 28, Advertiser A could have bid as low as \$0.84. This is the Actual CPC Advertiser A will pay.

Reserve Price

Using the same table from above, let's assume Advertisers A-C are out of the auction. We are left with Advertiser D and below. As we can see, Advertiser E has a negative LTV Score, which means they aren't eligible to show. So what happens now? Advertiser D can't reserve a bid just higher than a negative LTV Score, so Advertiser D will bid the lowest amount they'd need to clear the 0 LTV threshold. Assuming this advertiser would pay \$0.52 per click if they had an LTV of 0, this is the price they will pay per click.

Automated Bidding in the Auction

Can automated bidding help your Ad Rank? The answer based on the above is, yes, it can!

As we know, automated bidding works best when the campaign and account have abundant conversion data. Google uses this data to understand what search terms and audiences commonly convert on your ad

So when a similar user starts the auction triggering your ad in the future, Google uses its predictive metrics from above to calculate the likelihood of that user having a positive experience. This allows Google to be much more competitive with your bid, while still

remaining profitable for the advertiser as your bidding strategy can (if set up correctly) be more selective on when to show your ad.

Anti-Trust Documents

Google explains pCTR, Formats and Extensions, Thresholds and Reserve Prices, and Historical and Future changes to the Ad Rank in more detail in their Anti-Trust Documents. If you'd like to read this document, [click here](#).