

# How to WIN at Paid Search

## Using Advanced Bid Optimization

### Introduction

The first Google AdWords ad was placed in the year 2000 for live, mail-order lobsters. Fast-forward fifteen years, and in 2015, over one million advertisers spent more than \$81.5 billion on search ads worldwide.<sup>1</sup> The reason for this explosive growth in online ad spending is simple and compelling: 93% of today's consumer online experiences begin with a search engine.<sup>2</sup> As competition for their attention and, ultimately, their business has intensified, advertisers are finding it more difficult, more time consuming and more costly to win at paid search.



## What's Your Goal?

Aim to match your bidding strategy with your company's business objectives:

- If you are in Growth Mode, your goal will likely to be to maximize revenue and/or user growth within budget.
- If you are in Profit Mode, your goal will be to drive as much profit for your business as possible. This means that, beyond maximizing revenue and/or user growth within a budget, you need to know at all times what budget is currently achieving the maximum profit in relation to market conditions.

One of the most important aspects in generating paid search ROI is the bidding process, where the advertiser determines how much a consumer's click on an ad is worth, and sets the bid price accordingly. The bid is a key factor in when and how often an ad is shown, the ad's position (at or near the top of the first page of results, lower down or on a subsequent page), and the profitability of every click.

However, for most advertisers, the process used to place bids has remained largely the same for the last fifteen years. That's because truly efficient bidding is a complex, massively time-and-data-intensive chore that is beyond the capabilities of human marketing teams. To compensate, advertisers settle for placing bids once a day or even once a week, using an "average" bid calculation.

The problem with these infrequent, "average" bids is that market demand for a specific keyword can vary widely, as much as 16% or more, throughout a single day.<sup>3</sup> For large online advertisers, that variation adds up to billions of dollars in missed revenue and/or cost savings. For example, the "average" bid may be too high when consumers are less likely to convert, forcing the advertiser to overpay for those clicks, or too low when consumers are more likely to convert, causing the company to lose out on potential revenue.

Calculating the true value of every bid and adjusting accordingly is a classic big data problem. In order to make bidding more efficient, advertisers need the ability to crunch massive volumes of data, adjust continuously to changes in market demand, consumer behavior and other data, and place bids at a high frequency rate. This makes search bidding a perfect candidate for big data analytics and high-frequency bid automation—what we call ***Advanced Bid Optimization***.

# HOW PAID SEARCH BIDDING WORKS

Ad positions on search pages are hotly contested, especially for the most frequently used search terms and at times of high demand. This often results in “bidding wars” that drive up the price of keywords, and advertisers spend millions of dollars to buy that prime “real estate” for search ads that will catch the consumer’s eye and encourage them to click. So there is a lot at stake, and as a result, winning at SEM is a key priority for CMOs.

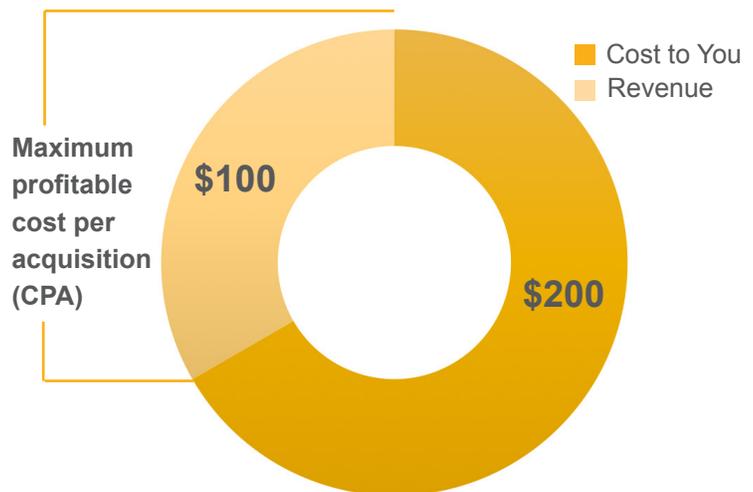
A common belief is that the higher you bid for a given keyword or phrase, the better your ad’s position is likely to be on the search results page. The better your position, the more conversions, and revenue, your ad will generate. Research shows 86% of all ad impressions accrue to the top three positions on the page.<sup>4</sup>

However, this approach makes it easy for advertisers to overspend their budgets, without necessarily achieving their goals. Impressions do not necessarily result in conversions, and clicks don’t always result in a sale. The trick for search engine marketers is to match your bidding strategy with your company’s business objectives.

- *If you are in Growth Mode:* your objectives are likely to be to maximize revenue and/or user growth as much as possible within budget.
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Since Google effectively is the global marketplace for search ads, with 55% of the global market for search, it makes sense to look to Google for insight into the working of its bid auctions and the tools for optimizing bids.<sup>5</sup> Hal Varian, Google’s Chief Economist, recorded a video lesson, entitled “[Google AdWords Bidding Tutorial](#),” that provides an authoritative summary of the process. Varian focuses on AdWords, the basic auction market for search advertising. (Comparable principles can be applied in Microsoft’s Bing environment, as well as more recently developed markets like Google Shopping.) Fundamentally, Varian recommends that the search marketer bid at a price high enough to generate a high volume of conversions, but not so high that it cuts into profitability. In other words:

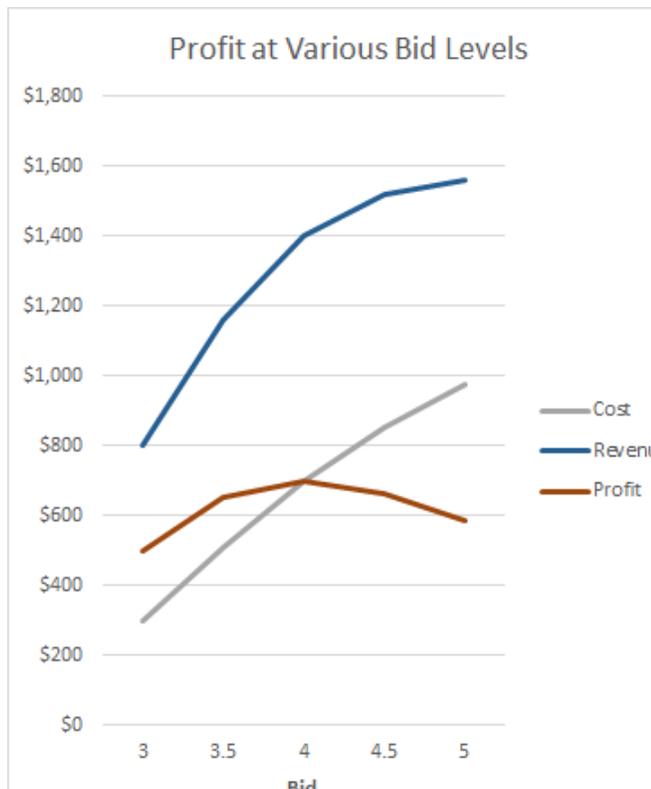
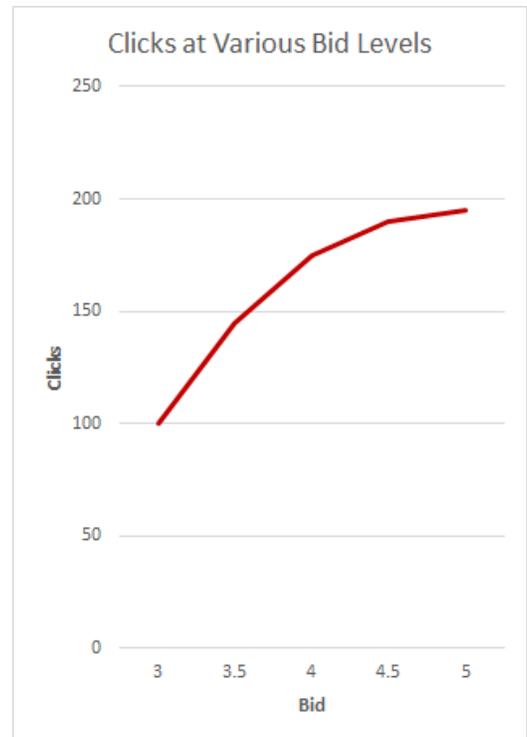
- Determine the maximum price your company can afford to bid for an ad and still make a profit on the sale;
- Based on the rate at which your ad clicks generate conversions, determine what each click is worth; and
- Tune your bids so that the price you are paying for each click is as close as possible to what experience tells you is the expected cost of an additional click—while never exceeding the maximum price you are willing to pay.



How much can you afford to bid? Varian offers the example of a camera priced at \$300: if the cost to create the product is \$200, then the remaining \$100 is what you can afford to spend to acquire a sale and still profit (or at least break even). Of course, not every ad click generates a conversion or sale. Experience will tell you your Conversion Rate. If 5 out of every 100 clicks results in a conversion, your conversion rate will be 5%.

Your conversion rate translates into a Value Per Click. If a sale is worth \$100 for this product, and your conversion rate is 5%, then each click is effectively worth \$5.00. It will be unprofitable long term to bid higher than your \$5.00 value per click.

It is important to remember that in an AdWords auction, you may bid \$5.00 for an ad position for a given keyword, but that is not the price you actually pay Google. Your bid is the maximum price you are willing to pay for that placement; what you actually pay usually is less, and is based on a Google algorithm that takes into account what competing bidders are paying for the same keyword at the same time, as well as the quality and relevance of each bidder's ad creative. Remember this relationship between the cost of your placement and the quality of the ad—it will be important.



The more you bid, the more clicks your ad is likely to generate. Of course, there's a limit to how many clicks you can actually capture based on demand. How many more clicks? Search engine marketers rely on experimentation to make projections. Google, which retains vast amounts of data on advertisers' account histories, provides a tool called Bid Simulator that allows the marketer to project the impact of changing bid levels on the performance of your ad, based on past performance and the ad's quality scoring. The actual relationship between dollars bid and clicks generated is unlikely to be a straight-line trend.

For each bid level, however, the result usually is a higher page position and an increase in the number of clicks, at an increased cost. You can project the incremental revenue you will generate by raising your bid to various levels, and the total cost to generate that revenue for each bid level. Naturally, revenue minus cost will give you a projected profit from the ad at each bid level. Because you also project the incremental number of clicks each bid level will produce, you can now project the Incremental Cost Per Click (ICC) for each bid level.

Now, notice what happens to profit levels. The most profitable bid is likely to be neither the highest nor the lowest bid, but rather one that falls somewhere in between. This is because each bump in the bid level yields a different number of incremental clicks at a different cost for each additional click. In fact, for some bid intervals, you will project only slight increases in click yield, at cost increases steep enough so that while you never actually pay more for a click than your maximum bid, the ICC for that bid level actually is higher than your maximum bid.

You may have strategic reasons to weight incremental clicks more heavily than profitability at different intervals. But, in general, the paid search marketer's objective should be to maximize not the volume of clicks but the profit generated by the campaign.

What does this analysis tell us? There is a significant degree of objective science in the paid search bidding process. The auction market varies constantly, conditions change, and there always will be reasons to fine-tune bids to earn the greatest return. Determining the optimal bid requires logical, if laborious, analysis, which makes bid optimization an ideal candidate for automation.



## The Challenge: Taking Advantage of the Highs and Lows

Varian's tutorial offers a strategy that is effective – at least in the abstract. Many SEM professionals adhere to an approach that is similar in concept. But the strategy has an inherent limitation. SEM consultant Josh Dreler, in a critique of Varian's guidance published at Searchengineland.com, highlights the issue:

*"It's easier said than done and you will certainly have trouble bidding correctly for every keyword, but as long as you follow this standard process, you should be able to bid well more often than you bid poorly and come out ahead in the end."*

To compensate, advertisers typically set "average" bids, once a day.

The problem is that demand, and conversion rates, can shift dramatically throughout the day. When demand for a certain item or keyword is high, the optimum bid is higher, as competitors raise their bids to claim prime positions. When demand is lower, there is an opportunity to bid lower, because competitive bids will be less aggressive.

"Average" bids miss out on these highs and lows, causing two issues:

- Missed revenue because the advertiser "lost" that bid to a competitor by not bidding high enough.
- High costs due to advertisers overpaying for bids when optimum bid price should be lower.

Search marketers typically have felt once-a-day bid averaging is sufficiently granular to compensate for these effects. But they are leaving significant amounts of money on the table.

Why don't advertisers bid more often? Essentially, it comes down to resource constraints. Managing paid search campaigns is an enormously time-consuming, detail-intensive task.

Even smaller advertisers often have thousands of keywords that are relevant to their business; larger advertisers manage millions of keywords. Assigning and managing bids for all of them is plainly impossible to do manually. Search marketers are already hard-pressed to keep up with the creative demands of generating and optimizing keywords, ad copy, landing pages, extensions, etc.

Throwing more search specialists at the problem only drives up costs, and the challenges of crunching the numbers to know what to bid at any point in time are massive. Automation is essentially the only way to manage this effort at realistic scale.

We noted earlier that the bid is one component of the algorithm that Google uses to determine ad placement on the search result page (although it is an important one). Google also weights ads by Google's own projection of your ad's click-through rate, the relevance of your landing page experience to the keyword, the ad's relevance and other components of the ad's quality – what Google calls the Quality Score (QS). The position of an ad on the search result page is determined by its Ad Rank -- essentially Quality Score multiplied by the bid. An ad with a low QS may be positioned low on the page even if you outbid all other bidders.

The components of Quality Score are all factors for which creative humans are very well suited to make vital contributions. Those are the most important things paid search managers should be spending their time on.

Bidding, by contrast, is a complex, iterative, data-intensive and, ideally, real-time process. Bidding is a perfect candidate for Advanced Bid Optimization software—especially for large advertisers marketing large and complex arrays of products via multiple campaigns. The software can do the “heavy lifting” that is simply beyond the capacity of human analysts.

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## Advanced Bid Optimization

Advanced Bid Optimization incorporates sophisticated algorithms based on pattern recognition that quickly find and take advantage of meaningful trending in large volumes of often-noisy data. For search engine marketers evaluating bidding systems, Advanced Bid Optimization includes two key components:

- **Big Data Modeling**—Crunching massive volumes of data and using data gleaned from trends and historical patterns, ensuring the exact right bid at the right time.
- **High-Frequency Bidding**—Bidding on each keyword multiple times per hour allows advertisers to adapt to fluctuations in optimum bid price, which occur continuously across the day.

For advertisers spending millions of dollars per month on paid search, a tiny difference in bid price over thousands of keywords can quickly add up to significant ROI.

# WHY IT MATTERS

Advanced Bid Optimization delivers 10-50% less cost, and 10-30% more revenue, with additional improvements over time.

The benefit of Advanced Bid Optimization is to enable the search marketer to know the value of every click—to avoid overpaying or underpaying for each incremental click and respond rapidly when the optimum bid changes with shifting market conditions.

## Doesn't My Campaign Management System Do This Already?

Virtually all large-scale marketing operations engaged in SEM either outsource management of their campaigns to agencies or internal teams using enterprise Campaign Management software—tools from vendors such as Marin Software, Kenshoo, Adobe and others.

Campaign management systems are designed to help manage all aspects of the campaign, from researching keywords to creating ads, and managing where and how often they run. These tools generally do have a bidding component as part of their overall platform, but they are created by generalist vendors who do not have the resources to devote to sophisticated bid optimization. They are good at what they are designed to do, but are not architected to handle the massive scale and speed required to perform Advanced Bid Optimization.

The bidding component of a typical campaign management system simply automates the traditional “set it and forget it” bidding model, useful in once-a-day average bidding but impossible to adapt to high-scale, high-frequency bidding. The new generation of Advanced Bid Optimization software replaces the outmoded bidding component in campaign management systems by introducing high-frequency bidding to the process. Marketers get to keep their campaign management system, while seamlessly integrating advanced, high-frequency bidding into the process.

In head to head tests, Advanced Bid Optimization has been shown to deliver 10-50% less cost, and/or 10-30% more revenue, with additional improvements over time, depending on the advertiser's goal.<sup>6</sup> Introducing Advanced Bid Optimization to your existing systems means that search marketers no longer have to overspend to win.

## What to Look For in an Advanced Bid Optimization Solution

As we mentioned, many campaign management systems have a bidding component. So what should marketers look for in an Advanced Bid Optimization solution? In this section we'll outline the key requirements, and why these capabilities are important.

### *Multi-dimensional Data Modeling*

Bidding tools that set bids based on average daily click values can lead to false highs and lows in bid prices, leaving millions of dollars in ad spend subject to unanticipated crosswinds in the search market. Advanced Bid Optimization uses multi-dimensional, predictive modeling to crunch the numbers for you, making it possible to generate the correct price for each click and ensuring you purchase the most valuable traffic at the optimal cost. (More specifically, the current standard for forecasting/data modeling based on pattern recognition is Bayesian Statistics.)

The system identifies trends and expected future click values, tracking changes in conversion levels over time to account for variances due to time of day, day of week and day of month. Bids are then set accordingly, ensuring you get the maximum profitability from your SEM campaigns.

### *High-Frequency Bidding*

To put the results of your big data analysis to work, you need the power to act. Once the appropriate value per click has been calculated, an effective high-frequency bidding engine should automatically adjust bids throughout the day, bidding several times per hour on a single keyword as conversion rates vary, maximizing volume on your target metrics such as revenue, conversions, Life Time Value (LTV), and more. Data from the system's analytics should allow you to adapt bids to ongoing changes in conversion rates and performance, proactively adjusting bids to the dynamic environment of paid search auction pricing.

### *Long Tail Keyword Optimization*

It is one thing to calculate the value of a keyword with consistent and ample click and conversion volume. The harder challenge comes with "long tail" keywords and phrases that do not have robust data on which to base your model. These include specific phrases with multiple terms that may be critically important to a specific business—but occur infrequently. Think of a Bell Curve—these are the outlier searches that fall several standard deviations from the center, in the narrow areas of the "tail" of the curve. There are business models where 70% of conversions are driven by keywords that have not received a click in the last month.<sup>7</sup>

It is relatively difficult to know how much a long tail keyword is worth, using conventional bidding tools and methods. What search engine marketers have tended to do is bundle these very specific keywords and place very cautiously justified bids, once a day or once every several days. But high frequency, intra-day bidding allows the marketer to bid much more aggressively, because the system can adapt very quickly to changes when it is bidding multiple times an hour. With effective analytics, the marketer can explore the dynamics of the long tail more frequently and more flexibly.

## WHAT TO LOOK FOR IN AN ADVANCED BID OPTIMIZATION SOLUTION:

- Multi-dimensional Data Modeling
- High-Frequency Bidding
- Attribution Tracking
- Long-Tail Keyword Optimization
- Objective A/B Testing
- Focus & Experience

### Modern, Scalable Architecture

Many of the conventional bidding systems used in campaign management systems are built on older architectures that simply are not capable of processing massive volumes of data and performing high-frequency bidding at scale. The majority of features in a typical campaign management system simply don't require this kind of power, and it would take a "from the ground up" re-architecting project to build this functionality into an existing platform. Advanced Bid Optimization technology utilizes a newer code base, such as [Erlang](#), a programming language used to build massively scalable real-time systems that require high availability. Some of Erlang's uses are in telecom, banking, e-commerce, computer telephony and instant messaging.

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### A/B Performance Testing

Adopting Advanced Bid Optimization software is easy, but it is a change of process—often a change of a long-established bidding protocol. It also involves implementation and learning of new software—shutting off an existing bidding tool in the campaign management platform and effectively outsourcing bidding to the software provider.

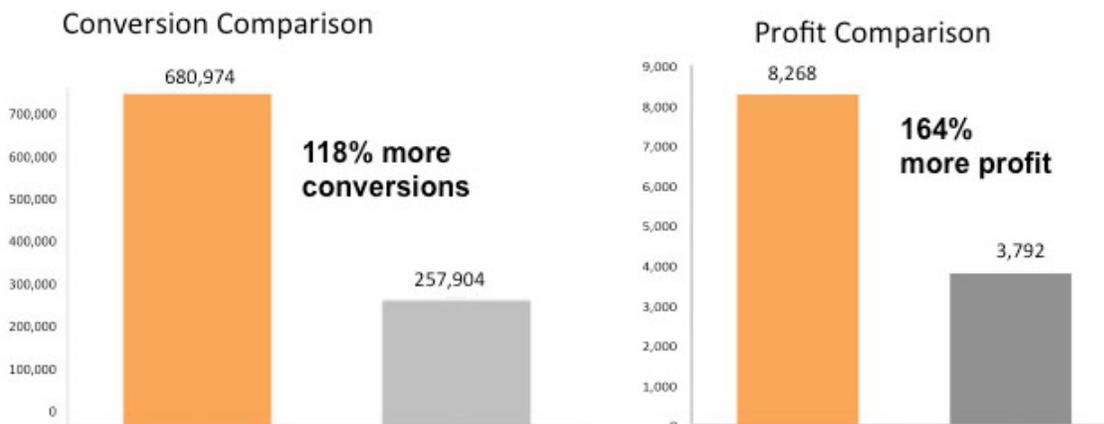
Process change often is challenging. For this reason, it makes sense to begin the software adoption process with a head to head A/B test, to demonstrate the incremental value of high-frequency bidding and intelligent bid optimization. The idea is to set the candidate bidding system up alongside your current bidding systems and test the new technology alongside a control set of data bidding through your current system.

Fortunately, in the AdWords context, it is possible to use Google's own testing framework to run these tests—Google's AdWords Campaign Experiments (ACE) test platform. The marketer maintains control bidding and experiment bidding, to see which delivers the most efficient bid. The uplift in efficiency (more revenue and/or lower costs) can be as much as 10-30% or more.

Google currently is testing a new generation testing platform called Drafts to replace ACE. The new platform is expected to enable a wider array of testing protocols, including the testing of mobile bidding (not supported in ACE).

## Online Fashion Retailer's A/B Test of Advanced Bid Optimization vs Conventional Bidding

118% more conversion volume | 164% more profit | 22% less spend



## Focus and Experience

In his bestselling book *Outliers*, Malcolm Gladwell posits that it takes 10,000 hours to achieve mastery in a field. What Gladwell is saying is that there is no substitute for singular focus and experience, and that is certainly true in the area of Advanced Bid Optimization. Before you invest, be sure that both the system you are evaluating and the team behind it has the experience and data history to perform Advanced Bid Optimization.

Paid search is unique in that you have to actually buy and bid iteratively in Google auctions in order to accumulate enough knowledge to be able to bid efficiently. This requires the use of live campaigns and real search budgets in order to measure the effect of a bid change—there is no way to simulate it, you simply have to learn from the bidding process. This means bidding tools that bid only once a day learn much more slowly than a system that bids several hundred times a day, and an Advanced Bid Optimization system by definition will have exponentially more knowledge about the true value per click than other systems.

Providers of campaign management systems typically have invested their time and resources across a broad product platform with many different components, all competing for investment time and dollars. Marketers absolutely need and use the many different features that come with these systems. However, bid optimization is a “deep dive” area that requires intense focus and expertise, as well as the sheer volume of “data experience” that comes from placing millions of bids. Don’t sell your team short by accepting anything less.

## Shouldn’t My Team Be Doing This?

SEM Bid Optimization is data-intensive work. This is really what automation is about—freeing the search marketer up to focus on more strategic, productive tasks without losing opportunities, and to focus on the areas that really require the attention of a creative human. Advanced Bid Optimization technology has only recently become available in the SEM segment of advertising, but it is rapidly changing how advertisers compete in this hotly contested market. Every competitive weapon has the potential to make or break a campaign, and the ability to get the maximum value for the budget at hand can be a decisive winning factor.

The winners in paid search will be those who find the right investment balance between strong creative, sophisticated campaign management and precision bidding. In fact, large advertisers are already embracing the trend and achieving double-digit gains in return on ad spend not previously thought possible. The only question is: will you be able to compete?



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### ABOUT CAMPANJA

Campanja is defining the next generation of search engine marketing with advanced bid optimization software that gives advertisers a powerful advantage in the highly competitive paid search market. Designed to integrate easily with existing campaign management systems, Campanja automatically optimizes bids to account for market changes, ensuring advertisers get the right bid at the right time at the right price. Campanja is a [24]7 company. For more information visit [www.campanja.com](http://www.campanja.com).