



Best Practices for **Paid Search Bid Management** and **Optimization**

A Kenshoo Perspective | March 2012


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Introduction

Each industry is different and each organization has different goals and objectives. At the end of the day, though, every business seeks to maximize the impact from marketing programs while minimizing the effort required in managing them.

With that in mind, this paper will discuss paid search bid management and the various bidding mechanisms available to marketers today including rules-based and model-based approaches. We'll outline pros and cons for each technique to help search marketers determine which format and corresponding technology tools are best suited to meet various campaign goals. We'll also look at the role of human-decisioning and algorithmic-decisioning in bid management and optimization.

Then we'll go  **deep** in the area of portfolio optimization and explore the common challenges that practitioners face when considering portfolio strategies and debunk common myths that often arise in the process.

As with all facets of marketing in the digital age, there's little consensus when it comes to defining best practices so let's start with some basic terminology that we can hopefully all agree on.

Basic Terminology

goal

1. The business target that bidding aims to achieve
2. Bid strategies can have only one goal
3. Examples:
 - ROI = 2.5
 - Position = 2
 - Maximize profit
 - Maximize revenue

constraint

1. A lower/upper-boundary that bidding must satisfy while meeting the goal
2. Must be numeric
3. There can be more than one constraint
4. Examples:
 - Minimum ROI = 2.5
 - Maximum CPA = \$10
 - Lowest Position = 2
5. Maximize Profit isn't a constraint...

portfolio

1. A group of elements, answering all of the below:
 - Has a singular goal
 - Has shared constraint(s)
 - Has a singular budget
2. It is not:
 - A group of elements with similar performance

bid management

1. A mechanism for large-scale bulk setting of bids
2. Rule-based
3. The constraint becomes the goal
 - As a result, the goal has to be numeric/specific, and identical for all the keywords within the cluster (so, not profit, revenue, etc.)
4. Goal Examples:
 - ROI = 2.5
 - CPA = \$10
 - Position = 2
5. “Egocentric” by nature (see page 6)

bid optimization

1. A mechanism for large-scale bulk setting of bids
2. Goal is optimization, and therefore open-ended
3. Goal Examples:
 - Maximize profit
 - Maximize revenue
 - Maximize conversions
 - Maximize traffic
4. Can only be performed on a portfolio
5. “Altruistic” by nature (see page 6)

Bid Management VS. Bid Optimization

When comparing bid management to bid optimization and deciding which approach is right for you, ask yourself this question, “Is keyword bidding a goal or is it just a means to an end?” For example, is your goal getting a certain keyword to position X or is it maximizing the revenue from your budget?

What’s Your GOAL?

If your goal is to maintain an average position, then a bid management tactic using a keyword-based approach may be right for you. This could be the case for certain brand terms that you absolutely must be #1 on to keep your perception of market leadership, regardless of how profitable those keywords are. To accomplish such a task, you could use human-decisioning to manually set and manage bids on the appropriate keywords or you could leverage algorithmic rules to automatically adjust bids to keep you in the top spot.

If, however your goal is to maximize revenue or profit from a set budget, then you must look beyond the mere management of bids and choose a bid optimization portfolio approach. Furthermore, only an algorithmic decisioning process will scale to the millions of calculations that need to be run to determine the proper bid for each keyword in a portfolio. No human can possibly perform the depth and frequency of computations required to meet an open-ended bid optimization goal.

	Keyword-Based	Portfolio-Based
Human Decisioning	Manual Bid Management	Not Feasible
Algorithmic Decisioning	Rule-Driven Bid Management	Portfolio Bid Optimization

Figure 1: Various Bidding Mechanisms Available to Search Marketers

Ego-centric vs. Altruistic Bidding

Here's an analogy to illustrate the differences between bid management and bid optimization:

Ego-centric Bidding

Bids are set on keywords

Each keyword strives to reach the (same) goal

It doesn't care about the performance of other keywords; it just worries about its own...

...even if there is an opportunity to improve overall performance by relaxing its own goal/constraint

Altruistic Bidding

Bids are also set on keywords

The goal is for the entire portfolio, not individual keywords...

...they all work together towards the "greater good," even if it means taking a "personal hit"



CHECKERS

In checkers, each piece moves forward and back on its own accord with the sole goal of reaching the other side, independently of the other pieces.



CHESS

In chess, not only is strategy more complex with each piece moving in different directions and players needing to think many moves ahead, but often times you have to sacrifice one of your pieces to gain an advantage and, ultimately, win.

Manual Bid Management Example

To understand manual bid management, let's walk through an example with a search marketer looking to increase profit by finding keywords that may be underbid and therefore delivering less profit than what is possible.

This type of bidding relies on human decisioning to create if/then logic to manage bids. We start with a hypothesis, such as:

"IF there are keywords in low positions with low conversions, THEN they might drive more conversions if moved to higher positions."

Next, the search marketer identifies a set of keywords that would define the "if" statement.

IF

1. Keywords that have been active over the past 2 weeks
2. AND keywords that have accumulated over 100 clicks
3. AND keywords that have accumulated over 1 conversion
4. AND keywords whose average position is below the top 3 (4-8 on the first page)

THEN

After identifying the keywords that meet the "If" criteria, then the search marketer raises bids to increase position and hopefully drive more traffic and, in turn, conversions and profit. See Figure 2.

In this case, bids are increased across all keywords that meet the "If" criteria by 15%. The search marketer would need to analyze results to determine if the goal was met and then repeat the process using different criteria and/or bid adjustments accordingly.

Business Objective: Increase Profit

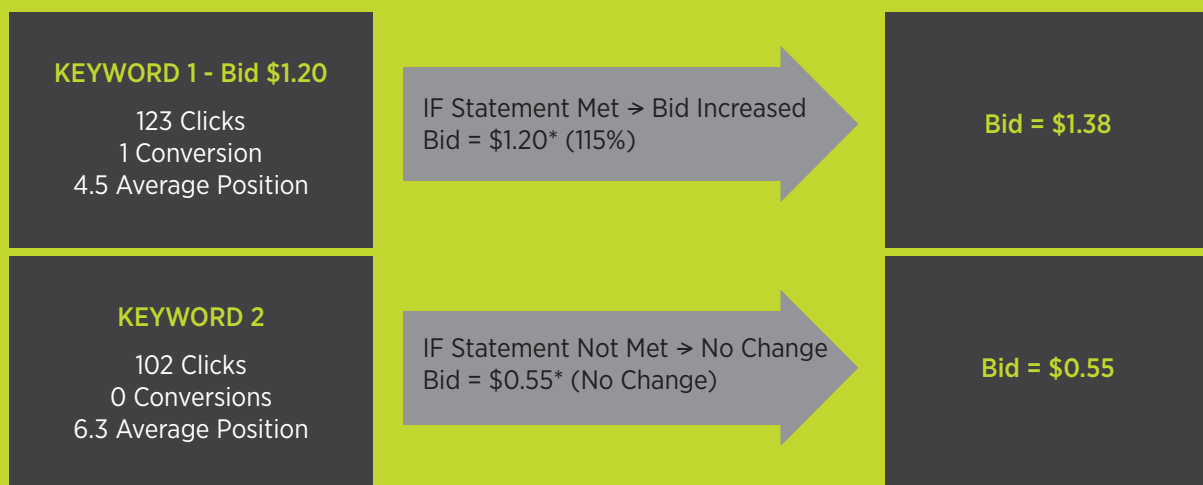


Figure 2: Manual Bid Management Example

<i>PRO</i>	MANUAL BIDDING	<i>CON</i>
<ul style="list-style-type: none">• Highly customizable• Full control of keywords and bids• Allows for quick response to market changes		<ul style="list-style-type: none">• Requires constant monitoring and manual control• Ignores end business goals• Tests hypotheses based on little math and few data points• Difficult to track results

Rule-Driven Bid Management Example

Below is an example of an algorithmic decisioning process based on rules set at the keyword level. The example shows a business objective of maintaining a 20% margin. Keyword 1 has some performance history, and the algorithm will take the revenue-per-click and multiply that against the marginal goal and set a bid based on the historical data. Keyword 2 behaves differently, has different historical data, but the bid is set in exactly the same way as the first. In this situation, neither keyword is interacting with the other. The same formula is applied to both keywords and they both act independently.

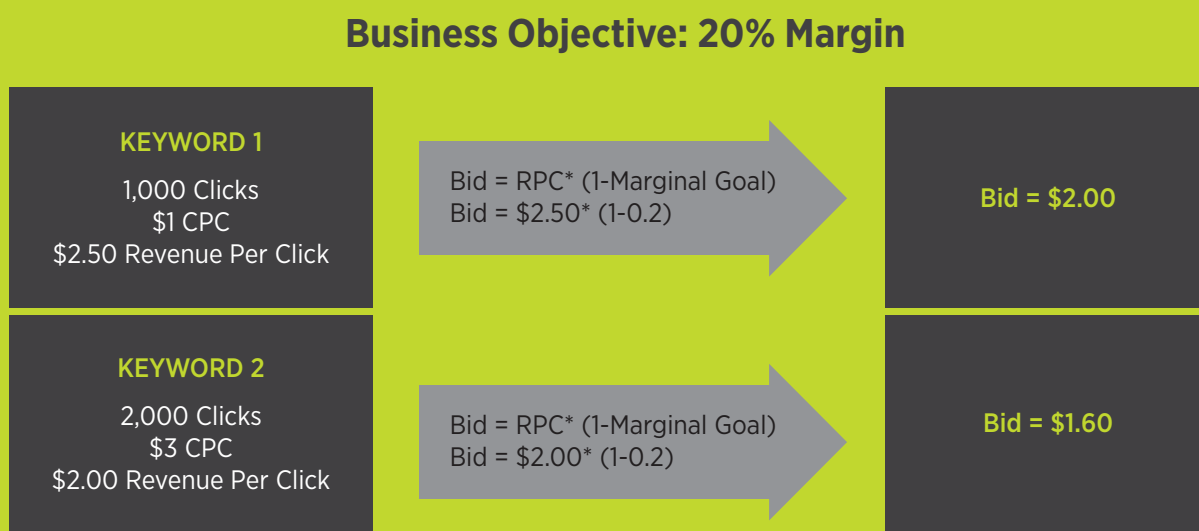


Figure 3: Rules-Based Bid Management Example

PRO	RULE-DRIVEN BIDDING	CON
<ul style="list-style-type: none"> • Useful for proxy metrics such as brand awareness • Full control of placement at all times 		<ul style="list-style-type: none"> • Does not meet an end business goal • Requires constant monitoring and updating

FAQ

“Won’t using rules and setting very high numeric goals, yield the optimization I’m looking for?”

- No, goals that are too high will reduce the available market
- A keyword-based bid management algorithm will attempt to reach that goal and, if it is unattainable, it will recommend pausing a lot of keywords, which will reduce traffic and conversions

Portfolio Bid Optimization Example

Following is an example of an algorithmic decisioning process based on models running across a keyword portfolio. The portfolio goal is to maximize overall profit and maintain an ROI of at least 2.5, which is a numeric constraint that's being applied to the portfolio.

Keyword 1, "new car price", is in position 1, has a profit of 200, and an ROI of 3.

Keyword 2 is bid lower and currently in position 4 with a profit of 24 and an ROI of 2.5. See Figure 4a.

The question is, what should we bid to move this keyword up and optimize the portfolio?

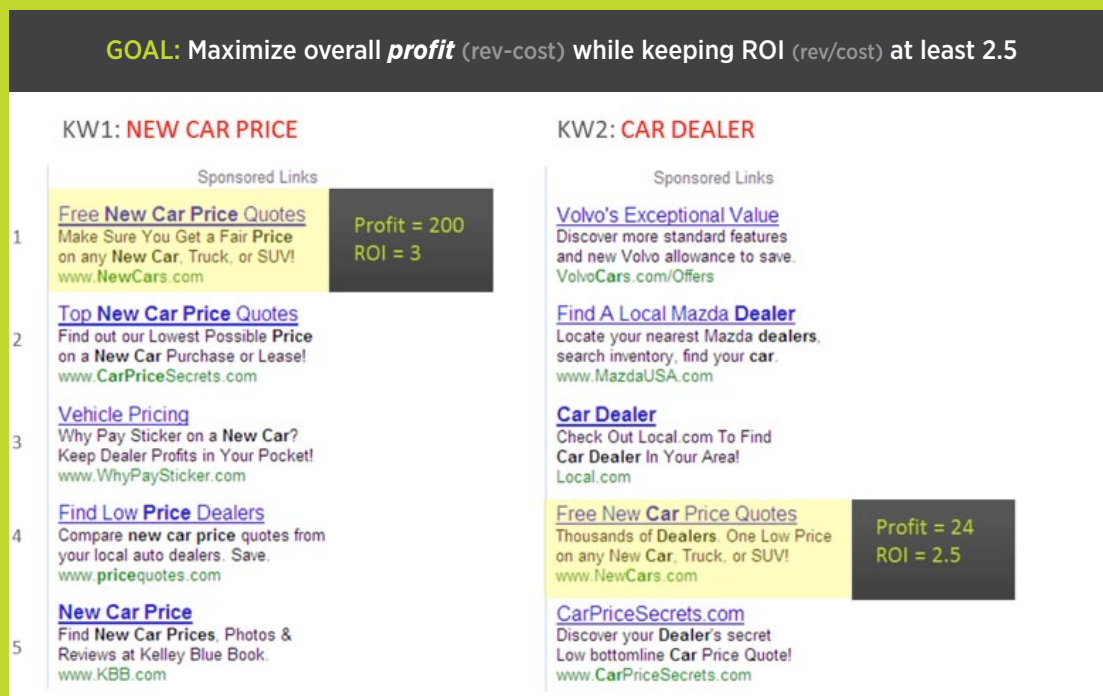


Figure 4a: Portfolio Bid Optimization Example - KW2 in Position 4

In a rules-based situation, keyword 2, because it has an ROI equal to the constraint, wouldn't be optimized, it would maintain its position. In portfolio bidding, as long as the minimum is being met, the algorithm will do what it can to optimize the overall portfolio. So by moving keyword 2 up, we see a profit of 100, and an ROI drop to 2. See Figure 4b. However, combined for the portfolio, we're still maintaining an ROI of 2.5 and we've maximized the profit while maintaining that constraint.

Rule Based: KW2 at position 4 → total profit 200 + 24 = 224 with ROI = 2.9

Portfolio Based: KW2 at position 1 → total profit 200 + 100 = 300 (+34%) with ROI = 2.5

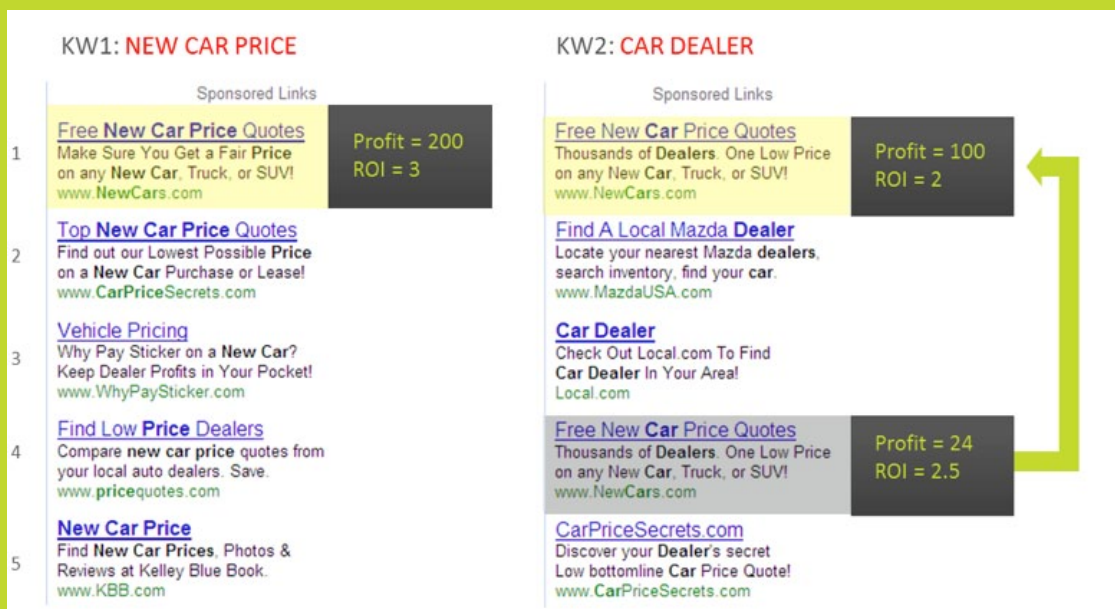


Figure 4b: Portfolio Bid Optimization Example - KW2 in Position 1

PRO	PORTFOLIO-BASED BIDDING	CON
<ul style="list-style-type: none"> • Considers performance and ROI at a portfolio level to inform keyword bidding • Automatically groups keywords within the portfolio • Can predict where to most effectively spend your next \$1 		<ul style="list-style-type: none"> • Doesn't work well with manual intervention • Requires historical data or time to learn from market conditions

FAQ

"Won't optimizing each individual keyword have the effect of optimizing the portfolio"

- Yes, that would be true IF each keyword had an open-ended, individual goal and you had unlimited resources
- With limited resources, there is an opportunity cost: investing in one keyword will come at the expense of another

Marginal-Based Portfolio Bid Optimization Example

While it's clear that portfolio optimization is the preferred method for achieving open-ended goals, not all portfolio solutions are created equal. Only marginal-based optimization can ensure the results driven continue to improve rather than plateau by considering the opportunity cost of investing in one keyword versus another.

Here's an example to illustrate the benefits of marginal-based portfolio optimization. To view this exercise live, go to youtube.com/watch?v=sRFkmjGmZdE.

Let's say you have a very simple portfolio with only three keywords, as below in figure 5a. The overall spend of this portfolio is \$150 and the revenue comes out to \$436. You can see the initial ROI is \$2.91.

	A	B	C	D	E	G	H	I	J	K
1		Spend	Revenue	ROI	Pos	Spend Change	New Spend	Revenue Change	New Revenue	New ROI
2	KW 1	80.00	200.00	2.50	3.00	0.00	80.00	0.00	200.00	2.50
3	KW 2	50.00	200.00	4.00	2.00	0.00	50.00	0.00	200.00	4.00
4	KW 3	20.00	36.00	1.80	6.00	0.00	20.00	0.00	36.00	1.80
5										
6		Initial Spend	150.00							
7		Initial Revenue	436.00							
8		Initial ROI	2.91							
9		Spend Change	0.00							
10		New Spend	150.00							
11		Revenue Change	0.00							
12		New Revenue	436.00							
13		New ROI	2.91							

Figure 5a: Marginal-Based Optimization Example - No Spend Change

Now, consider trying to increase the revenue, not by adding new budget, but by shifting budget around from one keyword to another. So, if Keyword 2 has an ROI of \$4 and Keyword 3 has an ROI of \$1.80, most rules-based algorithms will take budget from the lowest ROI keyword and shift it to the highest -- in this case, \$15 is reallocated. The result, as shown in figure 5b, reveals that revenue decreased for the portfolio by \$6 and the ROI decreased to \$2.87.

	A	B	C	D	E	G	H	I	J	K
1		Spend	Revenue	ROI	Pos	Spend Change	New Spend	Revenue Change	New Revenue	New ROI
2	KW 1	80.00	200.00	2.50	3.00	0.00	80.00	0.00	200.00	2.50
3	KW 2	50.00	200.00	4.00	2.00	15.00	65.00	18.00	218.00	3.35
4	KW 3	20.00	36.00	1.80	6.00	-15.00	5.00	-24.00	12.00	2.40
5										
6		Initial Spend	150.00							
7		Initial Revenue	436.00							
8		Initial ROI	2.91							
9		Spend Change	0.00							
10		New Spend	150.00							
11		Revenue Change	6.00							
12		New Revenue	430.00							
13		New ROI	2.87							

Figure 5b: Marginal-Based Optimization Example - Reallocating \$15 from KW2 to KW3

So, to fix this new problem, some algorithms might consider then reallocating just \$5 from Keyword 3 (currently in position 6), and taking away \$10 from Keyword 1 (currently in position 3). But now, the result is even worse. We've lost \$10 in revenue and ROI is \$2.84, as demonstrated in figure 5c:

	A	B	C	D	E	G	H	I	J	K
1		Spend	Revenue	ROI	Pos	Spend Change	New Spend	Revenue Change	New Revenue	New ROI
2	KW 1	80.00	200.00	2.50	3.00	-10.00	70.00	-20.00	180.00	2.57
3	KW 2	50.00	200.00	4.00	2.00	15.00	65.00	18.00	218.00	3.35
4	KW 3	20.00	36.00	1.80	6.00	-5.00	15.00	-8.00	28.00	1.87
5										
6		Initial Spend	150.00							
7		Initial Revenue	436.00							
8		Initial ROI	2.91							
9		Spend Change	0.00							
10		New Spend	150.00							
11		Revenue Change	-10.00							
12		New Revenue	426.00							
13		New ROI	2.84							

Figure 5c: Marginal-Based Optimization Example - Reallocating \$10 from K1 and \$5 from KW 3 to KW 2

Now, let's look at a different approach that a portfolio algorithm may take. At first it may seem as if it doesn't make sense. Let's increase the spend on the Keyword 1, take away \$15 from Keyword 2, and leave Keyword 3 unchanged. Now, you'll see that overall revenue has increased by \$12 and ROI shoots up to \$2.99 as seen in Figure 5d.

	A	B	C	D	E	G	H	I	J	K
1		Spend	Revenue	ROI	Pos	Spend Change	New Spend	Revenue Change	New Revenue	New ROI
2	KW 1	80.00	200.00	2.50	3.00	15.00	95.00	30.00	230.00	2.42
3	KW 2	50.00	200.00	4.00	2.00	-15.00	35.00	-18.00	182.00	5.20
4	KW 3	20.00	36.00	1.80	6.00	0.00	20.00	0.00	36.00	1.80
5										
6		Initial Spend	150.00							
7		Initial Revenue	436.00							
8		Initial ROI	2.91							
9		Spend Change	0.00							
10		New Spend	150.00							
11		Revenue Change	12.00							
12		New Revenue	448.00							
13		New ROI	2.99							

Figure 5d: Marginal-Based Optimization Example - Reallocating \$15 from KW2 to KW1

How this result was achieved brings us to the key point of differentiation among portfolio bidding techniques -- marginal ROI.

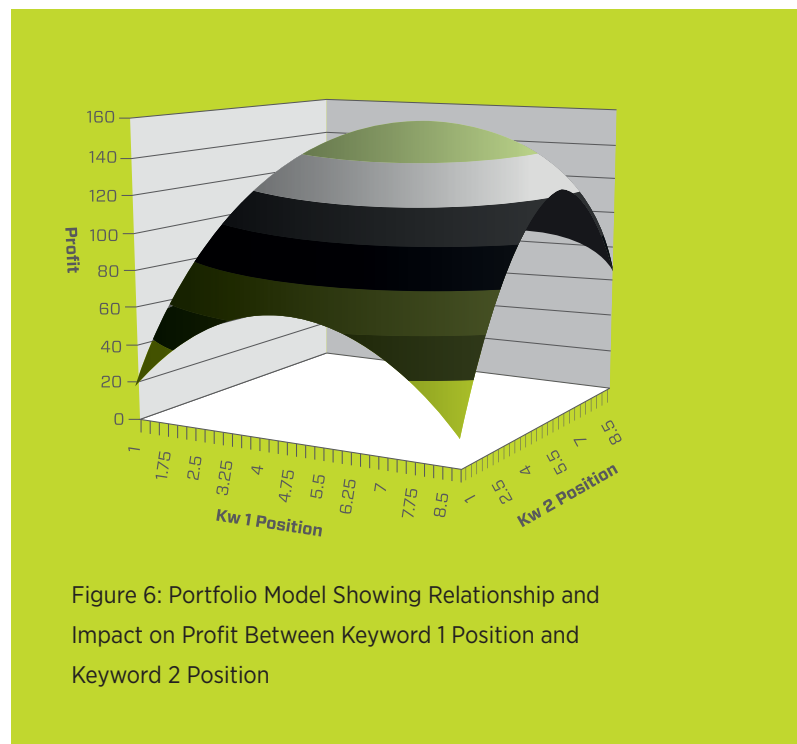
Marginal ROI tells you what you'll get as a result of investing an additional unit of spend. In figure 5e you'll notice that column F with Marginal ROI has been unhidden. As you can see, the highest marginal ROI is on Keyword 1 and the lowest marginal ROI is on Keyword 2. This model infers that for any additional dollar that is invested in keyword 1, the return will be \$2. And for any incremental dollar that is invested in keyword 2, the gain will be \$1.2. So, looking at the portfolio as a whole and taking into account marginal ROI, it's best to take budget from Keyword 2 and give to Keyword 1.

	A	B	C	D	E	F	G	H	I	J	K
1		Spend	Revenue	ROI	Pos	Marginal ROI	Spend Change	New Spend	Revenue Change	New Revenue	New ROI
2	KW 1	80.00	200.00	2.50	3.00	2.00	15.00	95.00	30.00	230.00	2.42
3	KW 2	50.00	200.00	4.00	2.00	1.20	-15.00	35.00	-18.00	182.00	5.20
4	KW 3	20.00	36.00	1.80	6.00	1.60	0.00	20.00	0.00	36.00	1.80
5											
6		Initial Spend	150.00								
7		Initial Revenue	436.00								
8		Initial ROI	2.91								
9		Spend Change	0.00								
10		New Spend	150.00								
11		Revenue Change	12.00								
12		New Revenue	448.00								
13		New ROI	2.99								

Figure 5e: Marginal-Based Optimization Example - Reallocating \$15 from KW2 to KW1 using Marginal ROI

In the example above, the algorithm evaluates the merits of bidding on a keyword that is very close to position 1, such as Keyword 2. It may be that its ROI is high but, by continuing to push it into a higher position, the amount of new traffic you're going to get is outweighed by the amount you'll have to spend to get that traffic. In other words, Keyword 2 has a very low Marginal ROI. But a keyword that is in position 6, such as Keyword 3, will see additional gain in traffic for a very small increase in spend. This results in a revenue increase of \$12 for the portfolio and an ROI of \$2.99. The relationship between two keywords and their performance based on position is displayed in Figure 6. As you can see, a three dimensional model emerges because each change to one keyword affects the other.

In summary, marginal ROI is the value gained by each incremental unit of spend invested in the portfolio. It needs to be calculated for each keyword and it changes the moment that first amount is invested - potentially for all the keywords in the portfolio. Therefore, calculating marginal ROI is not a one-point prediction, but a model that continuously changes by looking at all potential outcomes.



Results from Marginal-Based Portfolio Bid Optimization

Marginal-Based Portfolio Bid Optimization is proven to deliver dramatic improvements against core search marketing goals such as maximizing revenue, profit, or ROI. Such improvements can often be seen immediately following implementation of new algorithms as evidenced by the following results of actual campaigns running Kenshoo Portfolio Optimizer™ (KPO).



Figure 7: 118% Increase in Average Daily Profit for Leading Web Publisher using Kenshoo Portfolio Optimizer™

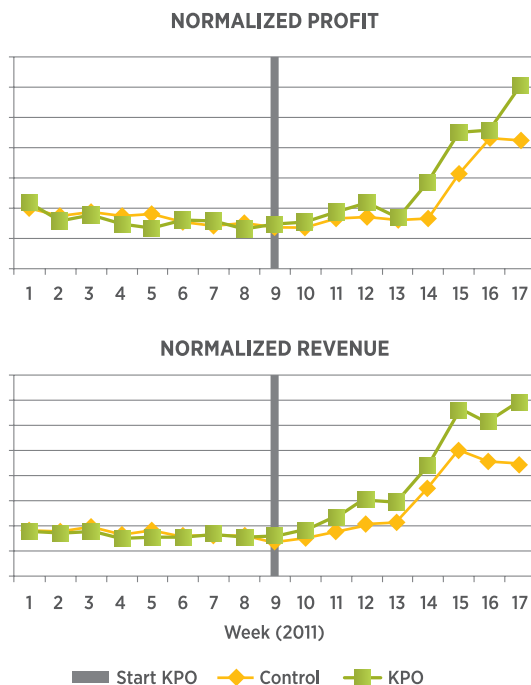


Figure 8: Increased Revenue and Profit for Leading Internet Retailer using Kenshoo Portfolio Optimizer™

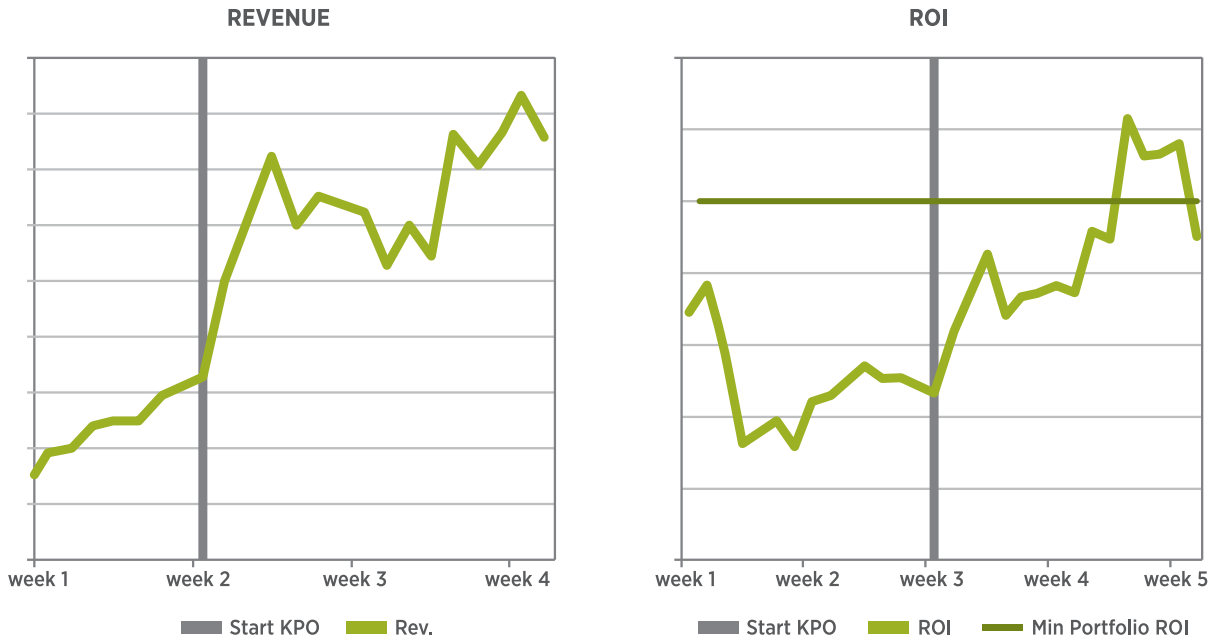


Figure 9: 44% Increase in Revenue and 36% Increase in ROI for Leading Internet Retailer using Kenshoo Portfolio Optimizer™

FAQs

1. What is the Foldering (or Bucketing) Technique?

Foldering (aka bucketing) is a common approach to bid management that features semi-human/semi-algorithmic decisioning techniques. The main goal of foldering is to more accurately apply a rules-based numeric goal to keywords that share similar performance history. Platforms that work off folders run rules-based algorithms in the background but a human still has to group elements into clusters by similarity in performance and set goals for them, and those goals have to be numeric.

Since foldering requires you to manually classify the keywords into folders based on their performance, you must periodically manually adjust the folder structure based on changes in performance, and the folders' performance will not be optimized, as they are not run on a holistic, altruistic picture. At the end of the day, Foldering ignores many other factors needed for true optimization like overall business goal, available resources, marginal ROI and keyword relationships.

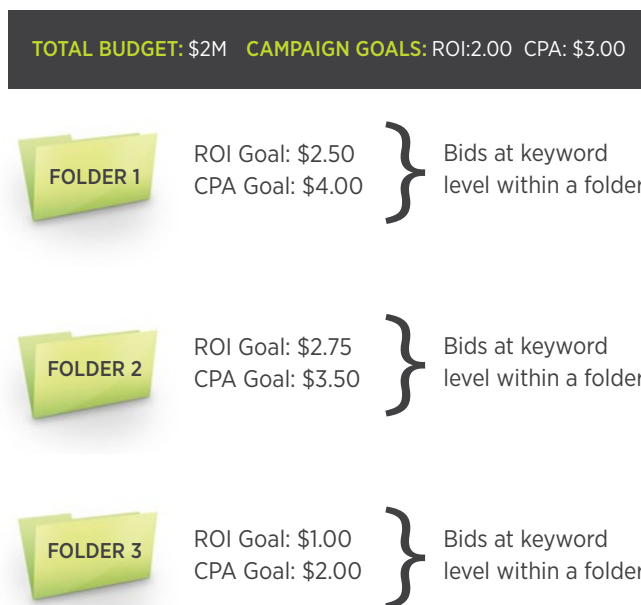


Figure 10: Folder-Based Bid Management Example

PRO	FOLDER-BASED BIDDING	CON
<ul style="list-style-type: none"> • Bid decisions made at the keyword level but based on data from foldered keywords 		<ul style="list-style-type: none"> • Requires manually clustering keywords • Doesn't consider overall campaign goals

2. How does Foldering compare to Portfolio Optimization?

Portfolio optimization presents a completely different solution from foldering. Portfolio-based optimization performs automatic clustering using a series of multi-dimensional, hands-free clustering models without humans having to make decisions.

When it comes to foldering, clustering by performance in order to measure performance is an oxymoron or, to borrow from Excel, a circular reference. You're being asked to group keywords that have similar performance together so that the algorithm can measure their performance using the data from the group. In other words, you don't have enough data at the keyword level to actually know what the keywords performance is, but you're supposed to know which keywords will perform. Likewise, if you knew which keywords would perform similarly, then you wouldn't need to be clustering.

A good analogy for foldering is to consider driving a vehicle cross-country, but being required to stop every few miles to check under the hood to make sure everything is working properly. It's impractical, inefficient, and outmoded. With portfolio optimization, the car's engine is fine-tuned and ready to make the journey.

FOLDERING	PORTFOLIO
<ul style="list-style-type: none">• Rule-based• Bid management solution• Requires user to set up and maintain element clustering• One dimension of clustering (performance)• Not aware of marginals	<ul style="list-style-type: none">• Portfolio-based• Bid optimization solution• Performs automatic clustering• Multi-dimensional hands-free clustering models• Based on marginals

3. Should Brand and Generic Keywords Be Managed in Separate Portfolios?

Make sure the two actually need to be managed as two different portfolios. If they don't, leave them in one portfolio; advanced algorithms will cluster them automatically by performance and other relevant attributes.

GOOD Reasons to Split Elements into Different Portfolios

- They really have different business goals. (Do they?)
- They really have different constraints. (Do they?)
- They really have different budgets. (Do they?)

BAD Reason: "Performance here is different than performance there"

- The algorithm runs thousands of models on the portfolio, taking performance variances into account
- Don't try to help the algorithm – let it do its job to optimize performance holistically
- Every constraint you enter will limit the algorithm
- Performance can change over time; you won't be able to maintain the "proper" separation
- You might be creating "information-starved" clusters

4. Can you set minimum budgets for portfolios?

No. Having a goal, constraints and a minimum budget is like asking for a zero-risk stock exchange. Why? Because you're asking for guaranteed return. What if market demand is too small? What if your market share is too big? The notion of minimum budgets is contradictory to the notion of a dynamic market and business goals/constraints.

5. Can you monitor and override bid changes within a portfolio?

Advanced portfolio bid optimization technologies allow you to preview all suggested bid changes and accept or decline them. However, when using portfolio optimization and considering overriding the algorithms recommendations, ask yourself:

- “Am I equipped to understand the millions of interdependent calculations that resulted in bid X for keyword Y?”
- “Do I know, and can I calculate marginal ROI?”

Since the answer is probably “No,” bid suggestions in portfolio optimization are best suited for transparency only.

6. How can an algorithm know my business better than I do?

It can't. The best algorithms are flexible and open to external, industry- or business-specific influence. You can (and should) influence it using the right, built-in mechanisms:

- Historical information incorporating seasonality
- Marketing calendar
- Google Trends
- In-portfolio clustering axes (external keyword attributes)

What to Look For in a Portfolio Bid Optimization Technology

1. Marginal-Based Optimization

To ensure accurate results, a marginal-based optimization platform must perform millions of calculations each day to understand the value that can be derived from the next unit of spend invested in a portfolio. The algorithm has to consider the opportunity cost of each keyword and take holistic action across the portfolio to maximize results.

	A	B	C	D	E	F	G	H	I	J	K
1		Spend	Revenue	ROI	Pos	Marginal ROI	Spend Change	New Spend	Revenue Change	New Revenue	New ROI
2	KW 1	80.00	200.00	2.50	3.00	2.00	15.00	95.00	30.00	230.00	2.42
3	KW 2	50.00	200.00	4.00	2.00	1.20	-15.00	35.00	-18.00	182.00	5.20
4	KW 3	20.00	36.00	1.80	6.00	1.60	0.00	20.00	0.00	36.00	1.80
5											
6		Initial Spend	150.00								
7		Initial Revenue	436.00								
8		Initial ROI	2.91								
9		Spend Change	0.00								
10		New Spend	150.00								
11		Revenue Change	12.00								
12		New Revenue	448.00								
13		New ROI	2.99								

Figure 11: Marginal-Based Optimization Example

2. Performance Forecasting

In order to make strategic decisions, search marketers need to have visibility into the potential outcome of various budget allocation opportunities. For portfolio bid optimization technology to be effective, it must be based on statistical models that accurately report on future performance.

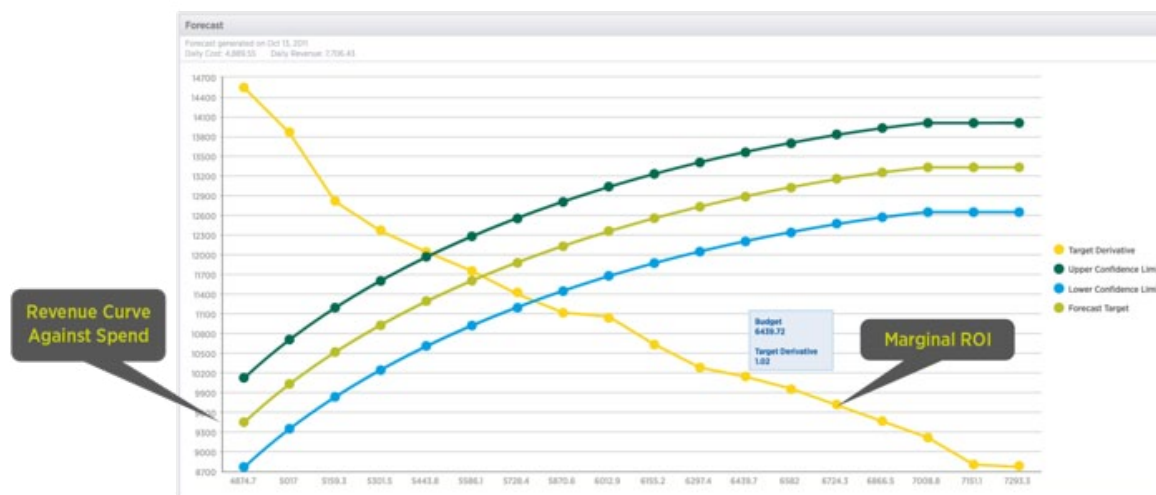


Figure 12: Kenshoo Portfolio Optimizer™ Forecasting Report

3. Flexible Configuration

Portfolio models need to be dynamic enough to “learn” about the businesses they support. Search marketers should be able to “train” the algorithms and models to achieve peak optimization by incorporating information specific to the marketing and performance of seasonal calendars. This way, the algorithm can anticipate jumps in traffic around important holidays or season promotional times.

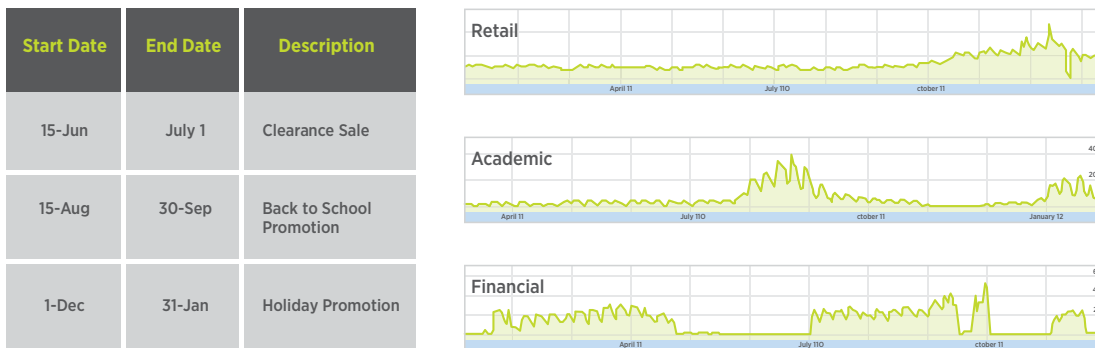


Figure 13: Sample Promotional Calendar and Industry Vertical Seasonality Reports that can be Used to Influence Portfolio Algorithms

4. Dynamic Clustering

Clustering assists with tackling data scarcity. For most portfolio bidding technologies, when there isn’t enough data, it’s difficult to optimize. Some approaches, such as foldering, require manual clustering based on performance. Look for a platform that automatically clusters keywords with similar traits by matching more than a dozen different attributes to build models for keywords with little or no data including campaign structure, meta-data, destination URL, and performance. These clusters must be reevaluated every day and updated as needed to drive maximum impact on the portfolio goal.

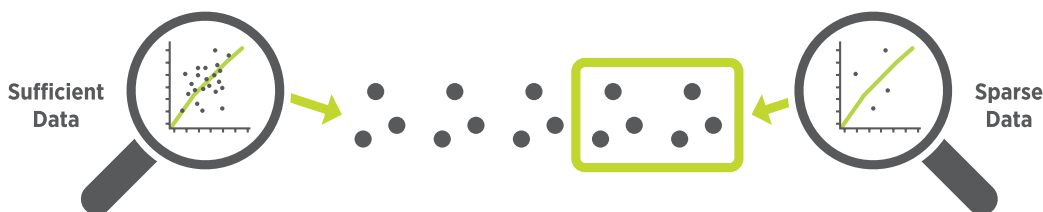
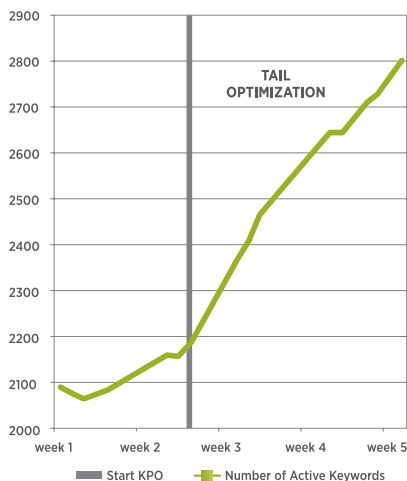


Figure 14: Illustration of Sparse Data Being Clustered for Statistical Significance



Through dynamic clustering, opportunity can be found in long-tail keywords that feature sparse data. Figure 15 shows a dramatic increase in number of active keywords within the first 3 weeks following a transition to portfolio bid optimization.

Figure 15: Increased Number of Long Tail Keywords Activated by Kenshoo Portfolio Optimizer™

5. Adaptive Historical Weighting

Advanced portfolio bid optimization platforms analyze historical data to predict how well it may inform upcoming events through a mathematical model that uses adaptive historical weighting to develop the most accurate predictions. Less robust systems simply look back longer and longer in time until they have enough data to make a decision, even if some of the data is stale or irrelevant – optimizing to the past and not for the future. Seek out a solution that takes a broader, smarter look at the data to give you the best possible predictive information.

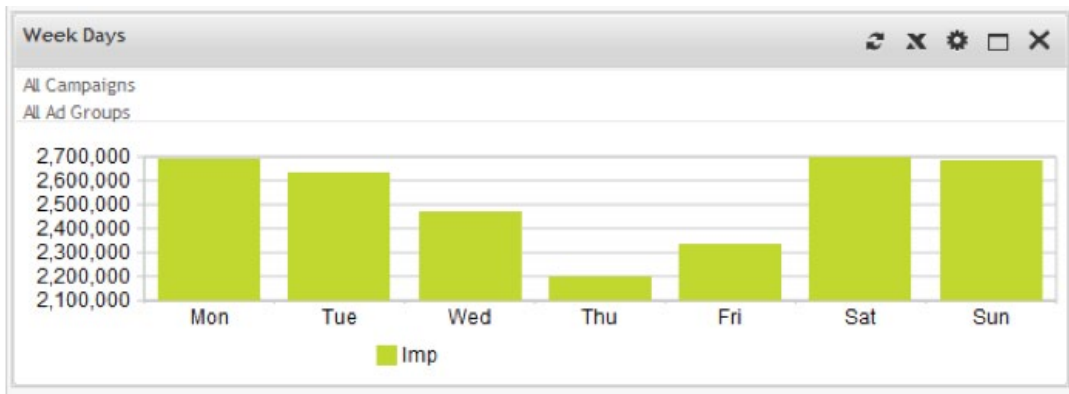


Figure 15: Kenshoo Week Days Reporting Widget

6. Intelligent Automation

Seek out a fully automated system where you can set the portfolio goal and the algorithm does the rest. Don't settle for platforms that require you to manually bucket keywords into folders based on performance. This manual process not only takes time but it's a sub-optimal way to manage bids and meet your goal. Intelligent portfolio optimization technologies will automatically learn when and how to change bids based on seasonality pattern recognition.

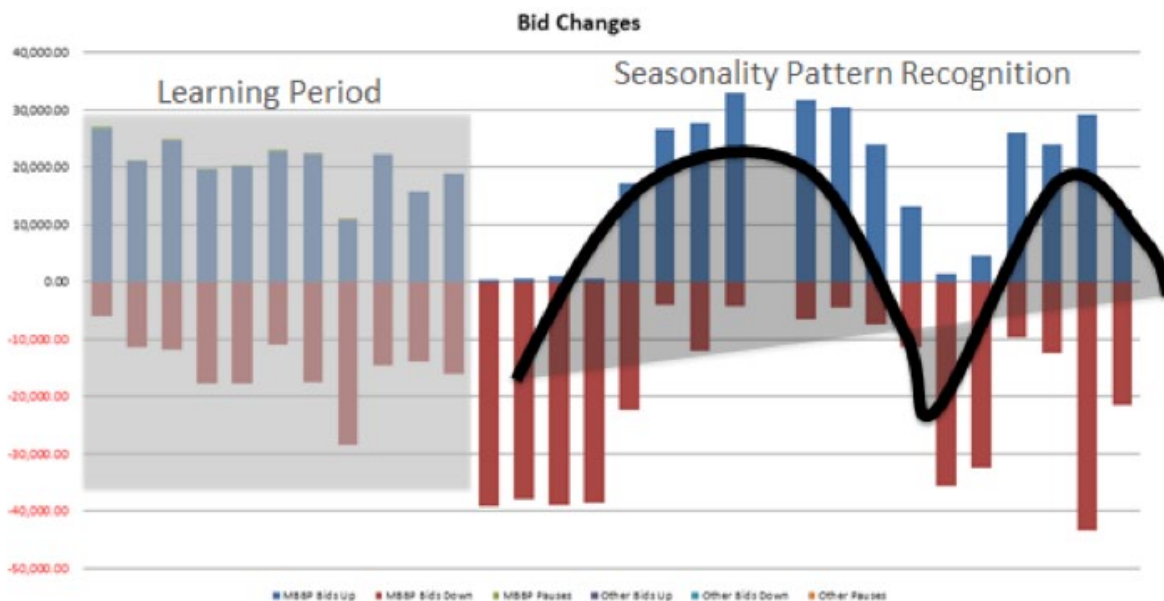
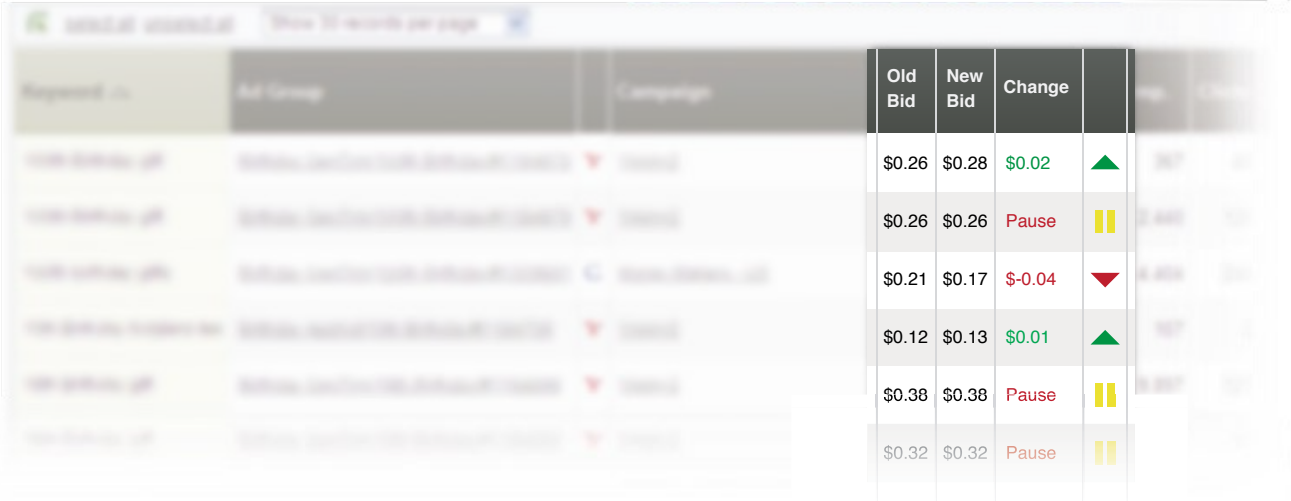


Figure 16: Bid Increases and Decreases Based on Kenshoo Portfolio Optimizer™ Seasonality Pattern Recognition

7. Full Transparency

Make sure the portfolio bid optimization solution you choose is not a black box. You should have full transparency into the actions of the algorithm and be able to see all suggested bid changes at the keyword level



The screenshot shows a web interface for the Kenshoo Portfolio Optimizer. At the top, there is a search bar and a dropdown menu set to 'Show 10 records per page'. Below this is a table with the following columns: Keyword, Ad Group, Campaign, Old Bid, New Bid, Change, and a status icon. The table contains six rows of data. The first row shows a bid increase from \$0.26 to \$0.28. The second row shows a 'Pause' action. The third row shows a bid decrease from \$0.21 to \$0.17. The fourth row shows a bid increase from \$0.12 to \$0.13. The fifth row shows a 'Pause' action. The sixth row shows a 'Pause' action.

Keyword	Ad Group	Campaign	Old Bid	New Bid	Change	Status
keyword 1	Ad Group 1	Campaign 1	\$0.26	\$0.28	\$0.02	▲
keyword 2	Ad Group 1	Campaign 1	\$0.26	\$0.26	Pause	
keyword 3	Ad Group 1	Campaign 2	\$0.21	\$0.17	-\$0.04	▼
keyword 4	Ad Group 1	Campaign 1	\$0.12	\$0.13	\$0.01	▲
keyword 5	Ad Group 1	Campaign 1	\$0.38	\$0.38	Pause	
keyword 6	Ad Group 1	Campaign 1	\$0.32	\$0.32	Pause	

Figure 17: Kenshoo Portfolio Optimizer™ Bid Preview Grid

Summary

When it comes to paid search bid management and bid optimization, there are many different schools of thought. Seasoned practitioners will select the proper methodology to meet specific business goals and campaign budgets. When evaluating manual bid management techniques vs. rule-driven bid management vs. portfolio bid optimization, search marketers must weigh the pros and cons to each approach and be sure the chosen strategy aligns with the true objective.

When considering a technology solution for bid management and bid optimization, many different factors need to be taken into account to ensure the platform can deliver the required performance and scale.

Here are some questions to ask bid management and bid optimization providers as part of your evaluation process:

- “Do I need to work to set up keyword folders?”
- “How much time will it take me to set up folders?”
- “How much time will it take me to maintain folders?”
- “Do you forecast the entire portfolio’s performance?”
- “Do you use forecasting in making your bidding decisions?”
- “Do you know what the optimum is, and will you get performance there?”
- “How do you handle data scarcity?”
- “Do you consider marginals?”
- “How long does it take to begin to see results?”
- “How much historical data is needed?”
- “Can you scale portfolios to hundreds of thousands of keywords?”
- “Can I view what decisions your algorithm is making at any time?”
- “Can I incorporate my own business seasonality and promotional calendar?”
- “Can you share examples of actual campaign performance?”
- “Can I speak with other marketers using your platform?”

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About Kenshoo

Kenshoo is a digital marketing software company that engineers technology solutions for search marketing, social media and online advertising. Brands, agencies and marketing providers use Kenshoo Enterprise, Kenshoo Local and Kenshoo Social to direct more than \$25 billion in annual client sales revenue. The Kenshoo Universal Platform delivers automation, intelligence, integration and scale to make better marketing investments. Kenshoo powers 4 of the top 5 U.S. travel websites, 6 of the top 10 global hotel groups, 7 of the top 10 retailers, 7 of the top 10 telecoms, 9 of the top 10 ad agency networks, and 23 of the Fortune 50 companies. With campaigns running in more than 190 countries, Kenshoo clients include Annalect, Barnes & Noble, CareerBuilder, Expedia, Facebook, KAYAK, Havas Digital, Hitwise, iREP, John Lewis, LendingTree, Sears, Starcom MediaVest Group, Tesco, Travelocity, Walgreens, and Zappos. Kenshoo has 16 international locations and is backed by Sequoia Capital and Arts Alliance. Please visit www.Kenshoo.com for more information.

Kenshoo Portfolio Optimizer (KPO) is Kenshoo's proprietary solution for portfolio bid optimization that runs predictive models to calculate marginal ROI while automatically clustering keywords across multiple attributes to maximize SEM results. Powered by version 3.0 of Kenshoo's patent-pending Model-Based Bid Policies, KPO leverages advanced algorithms to compile historical data and build hundreds of thousands of statistical models, giving unmatched insights into the impact of each bid change upon your entire keyword portfolio. To learn more about KPO, visit www.Kenshoo.com/KenshooPortfolioOptimizer and download the brochure.

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