



Paid Search Metrics Explained

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The formulas used in Search Engine Marketing (SEM) are not always easy to understand and there is quite a bit of jargon, which is common to many niche industries. When properly understood, the formulas can help an online marketer not only determine the success of their marketing campaigns, but also provide valuable insight for budgeting and planning with future campaigns.

Below are some of today's most common Search Engine Marketing terms. The accompanying formulas will be defined and their common usage explained.

CTR: Click-thru rate
CPM: Cost per thousand
CPC: Cost per click
Conversion Rate
ROAS: Return on ad spend
Value/Cost
Value/Click
CPL: Cost per lead
CPS: Cost per sale
CPA: Cost per acquisition
Advertising revenue per visitor
Visitor to browser ratio
Shopping cart abandonment
AOV: Average order value

A very typical budgeting strategy with the Pay Per Click (PPC) Search Engines like Google Adwords, Yahoo Search Marketing, and MSN adCenter is to just spend X number of dollars per day or month. If the cash register is ringing, the campaign is a success. *Evolving to a more advanced strategy would begin by understanding that for every paid click of X that the profit is Y.*

The constraint on the first strategy is the amount of money that can be spent. The second approach incorporates a much greater degree of understanding of the program, which requires key data points being discovered.

Below are the formulas to arrive at several of these valuable metrics. Two simple examples will be used with each equation, with two imaginary companies.

The Purple Widget Company (PWC): This company sells purple widgets online. They have a 50% profit margin on their purple widget product. The average order value is for 1 widget. Each purple widget costs \$200.00
The PPC campaigns focus on Purple Widgets.

The Custom Comb Company (CCC): This company sells unique hair combs. They have a 30% profit margin on goods sold. The average order value is for 100 combs. Each comb costs \$.10.
The PPC campaigns focus on Combs.

Search Engine Marketing Equations:

Click-Thru Rate (CTR) is one of the fundamental numbers in PPC advertising. Google uses this number as part of the algorithm deciding the hierarchy of the ads. Strong CTR's mean that the ads are clicked on frequently when viewed. This correlates to relevant and well-written ad copy for the keyword queries.

$$\text{CTR \%} = \frac{\text{Total Clicks} * 100}{\text{Total Impressions}}$$

PWC received 100 clicks out of 1000 impressions yesterday. CTR = 10%
CCC received 10 clicks out of 1000 impressions yesterday. CTR = 1%

Cost Per 1000 Impressions (CPM) is sold more in impression based media like banner ads. Since certain online media is still sold in this fashion, it is important to understand how PPC compares. Effective CPM of a PPC campaign can be calculated as such:

$$\text{Effective CPM} = \frac{\text{Total Cost} * 1000}{\text{Total Impressions}}$$

PWC received \$10.00 worth of clicks from MSN out of 1000 impressions.
Effective CPM = \$10.00
CCC received \$10.00 worth of clicks from MSN out of 10000 impressions.
Effective CPM = \$1.00

Cost Per Click (CPC) pricing is responsible for the success of today's Search Engines. This type of pricing opened up the paid search advertising model, making search engines a profitable business. In its simplest form, CPC is the price an advertiser is willing to pay for a click. In practice CPC is much more complicated. Advertisers are not informed of the individual price of each click received during the day. Depending on the volatility of the market, keyword prices may change drastically throughout the day. Reports from the PPC engines only provide an average CPC based on the time period and amount of clicks. This is a basic reporting flaw that lessens the value of ROI tracking (covered later).

$$\text{CPC} = \frac{\text{Total Cost}}{\text{Total Clicks}}$$

PWC paid \$10.00 for 10 clicks. $\text{CPC} = \$1.00$
CCC paid \$10.00 for 100 clicks. $\text{CPC} = \$0.10$

Conversion Rate is the rate at which clicks delivered to a Web site convert to the desired action. Tracking online sales and forms being filled out is easy. Tracking phone or mail orders can be more difficult. Conversion rates range by industry. A 1 to 3% conversion is average for e-commerce. 5% and greater conversion rates are stellar. Keyword types also impact results. For example, branded keywords typically convert at a higher level than category terms.

$$\text{Conversion Rate \%} = \frac{\text{Total Number of Conversion Actions} * 100}{\text{Total Number of Ad Click-Thru's}}$$

PWC had 10 sales out of 100 visits to their Web site.
Conversion rate = 10%

CCC had 10 sales out of 1000 visits to their Web site.
Conversion rate = 1%

Return on Ad Spend (ROAS) is an easier figure to come up with than ROI. Marketing managers should have access to the required information. The value should be greater than one. It is important to remember that a positive ROAS does not mean a profitable ad campaign. The ROAS provides the amount of revenue responsible from the campaign per dollar invested. **For example, an ROAS of \$1 means that you are generating \$1 for every \$1 in ad spend.**

$$\text{ROAS} = \frac{((\text{Impressions} * \text{CTR} * \text{Conv rate} * \text{Avg sale}) - \text{Campaign Cost})}{\text{Campaign Cost}}$$

PWS paid for 1000 impressions at a 10% CTR. The conversion rate of visitors to sales was 10% at an average sale of \$100.00. The campaign cost \$10.00. ROAS = \$99.00

So, for every ad dollar they spend, a return of \$99.00 is generated.

CCC paid for 10000 impressions at a 1% CTR. The conversion rate of visitors to sales was 1% at an average sale of \$10.00. The campaign cost \$100.00. ROAS = -\$0.99

So, for every ad dollar they spend, a loss of \$.99 is experienced.

ROAS is a very important metric, although much more useful to some marketers than others. For businesses whose products have relatively similar profit margins, ROAS can be the primary metric used in evaluating campaign performance. When profit margin is known, it is easy to set ROAS targets. However, when there is a large variance with profit margin, ROAS is not the only metric a business should be evaluating.

Value/Cost is the total value (revenue) generated divided by the total cost of click-Thru's. This statistic will be equal to your :

$$\text{Value/Cost} = \frac{\text{Total Revenue}}{\text{Cost}}$$

PWS PPC campaign generated \$5000 in revenue at a cost of \$250. The Value/Cost is \$20.

Value/Click (Average Value) is the conversion value generated per click. A quick calculation will tell you the maximum amount you should bid at the campaign level or even down to the keyword level. Note that the average value does not take into account production costs or other business expenses.

$$\text{Value/Click} = \frac{\text{Total Revenue}}{\text{Total Click-Thru's}}$$

PWS generated \$5000 in revenue with 116 clicks to the site.

The Value/Click is \$43.10.

The Value/Click will vary greatly by industry. Saturated, competitive markets will always see a higher Value/Click as CPCs are expensive and the ROAS tends to be correspondingly high.

Cost Per Lead (CPL) is a number that is very important to lead generation Web sites. It is also important to Web sites that have products with long buying cycles. CPL goals can be arbitrary. Their value should be relative to the amount earned from a new client and the value of remarketing to that lead. A CPL value for a personal injury attorney would be significantly higher than a CPL value for a Thanksgiving Catalog Company.

$$\text{CPL} = \frac{\text{Ad Spend}}{\text{Number of Leads}}$$

PWS had 20 newsletter sign ups for \$20.00. CPL = \$1
CCC had 100 information requests for \$50.00 CPL = \$0.50

Cost Per Sale (CPS) / Cost per Order (CPO) is similar to CPL. If the Web site just sells online and does not collect lead information, CPS would replace CPL. If CPS is the second step of the sales process after CPL, the conversion rates of both need to be considered.

If your site is selling an item online, the CPO should be used in the management of your campaign. CPO can be measured at the campaign level or on the more granular keyword or product level.

$$\text{CPS / CPO} = \frac{\text{Ad Spend}}{\text{Number of Sales}}$$

PWS had 1 sale out of the 20 newsletter sign ups for \$20.00.
CPS = \$20.00

CCC had 2 sales out of the 100 information requests for \$50.00.
CPS = \$50.00

A \$0.50 CPL seemed ok until the CPS is reviewed. With an average sale of \$10.00, those 2 sales for \$50.00 leave them in the red.

Set CPO targets to manage your campaigns. Be sure to factor in both the immediate revenue generated by the sale as well as the estimated

lifetime value of the customer to ensure more accurate CPO targets. In addition to lifetime value, you may wish to account for the impact of branding on your offline sales...offline revenue that can be attributed to online advertising. For example, how many phone orders resulted from searchers who clicked on your ad then proceeded to call in their order?

Cost Per Acquisition (CPA) is another term that could be used in place of CPL or CPS. Since it covers both, it is used more commonly in ad buying. For many businesses, tracking orders online is very difficult, or may not be a possibility. For example, services, highly complex sales processes, not available (or not a good fit) for online purchase, etc. In these cases, calculating CPA will help differentiate between high-quality and lesser quality traffic.

$$\text{CPA} = \frac{\text{Ad Spend}}{\text{Number of Acquisitions}}$$

Determine the action to be tracked, which must correspond to a sale at some point in the future. For example, downloading a white paper, registering for a newsletter, requesting information, or simply reaching a particular important page within the site. For sites that have more than one action that contribute to the possibility of a sale, consider assigning weights to each action to arrive at more accurate CPA targets. Weigh the actions higher that are further along the buying process or that have been proven to have a higher conversion rate.

Average Revenue Per Visitor is a helpful number to know. It can help steer the traffic goals of an online marketing campaign.

$$\text{Average Revenue Per Visitor} = \text{Conversion Rate} * \text{Avg Sale}$$

PWC had a conversion rate of 10% and an average sale of \$100.

$$\text{Average Revenue Per Visitor} = \$10.00$$

CCC had a conversion rate of 1% and an average sale of \$10.

$$\text{Average Revenue Per Visitor} = \$0.10$$

Visitor to Browser Ratio calculates the percentage of visitors (or Click-Thru's) that surf a site (view multiple pages). Conversely, you can also analyze the drop off of visitors that leave after viewing the Destination Page only. A browser is defined as someone who viewed 2 or more pages

of a website. Most log analyzers or analytics programs will detail out this information.

$$\text{Visitor to Browser Ratio} = \frac{\text{Browsers}}{\text{Unique Visitors (Click-Thru's)}} * 100$$

This is a very important statistic to review in all paid search efforts. An unusual spike in drop off after 1 page view should alert you to a potential page error. Perhaps the user is getting a 404 error on your Destination URL so they can not access additional pages of the site.

If you are seeing a higher drop off with particular keywords, this should raise a flag to review the page you are sending searchers to. Perhaps you have an offer incorporated in your ad copy that is not reinforced on the landing page. The searcher may be looking for "unique combs" and you are landing them on the product page for your #1 selling comb. Although this is your hottest item, you are not offering the searcher looking for combs an adequate selection. If variety and price selection is what the searcher is looking for, your product page will not likely encourage an immediate order.....or even additional surfing. In this case, try swapping out the landing page for "unique combs" with a top level category page that presents a selection of combs.

Shopping Cart Abandonment is a critical component to analyze in any e-commerce site. How many visitors are interested enough in your product to initiate a shopping cart? More importantly, how many people successfully complete an order once item(s) were added to the cart? This formula can also apply to sites that seek to have the visitor complete some type of lead generation form.

$$\text{Cart Abandonment} = 1 - \frac{\text{New Customers / (Leads)}}{\text{Unique Visitors (landing on check-out / form page)}} * 100$$

A spike in cart abandonment may alert you to a technical problem in the ordering process. A cart not updating quantity changes or removed item(s) could be the problem. Perhaps an offer code you featured in an email is not applying the discount in the cart. Ultimately, there are a number of reasons a user will abandon a cart / lead form.

Further analysis may include review of items added to the cart, length of time spent on the Shopping Cart page, and classification of user (new, returning, existing customer, etc) to name a few.

Average Order Value (AOV) aka Revenue/Conversion calculates the average dollar amount for each order placed. For lead generation, a value per lead is assigned to arrive at the result.

$$\text{AOV} = \frac{\text{Revenue}}{\text{Conversions}}$$

This information is important on a few levels. At a high level, this calculation is helpful when evaluating referring engines as well as testing new opportunities, engines, etc. For companies just beginning to test the waters of SEM in limited channels, reviewing the AOV by search engine is a good place to start. If there is a clear difference in AOV amongst engines, start your advertising with the engine yielding the highest value. Although AOV tends to vary between natural traffic and paid traffic, you may be able to identify engine(s) that consistently generate a higher AOV. If you are fortunate enough to identify a winning engine, it is a good idea to test out additional advertising opportunities. For example, media buys, email delivery, newsletter sponsorship, etc. This will help you Benchmark performance of each form of advertising to use as a measure for future campaigns in additional engines, portals, etc.

At the keyword level, the AOV is important in deciding which keywords to keep running in your campaign. For example, you may have excellent CTR and Conversion Rate for the word "tortoise hair comb". However, if the AOV is less than \$1 and your Cost per Order is more than \$1 you should implement keyword changes. If a lower CPC still yields a low AOV after attempts to improve, the keyword should be removed from the campaign.

Formulas and Equations are only as good as the data that is entered in them. Search Engine Marketing campaigns can provide an amazing amount of data that can be molded into very useful information. The examples used above were very simple. It is easy to follow the math, but not practical to real world examples. Even a small campaign could have multiple conversion points and values from an array of keywords and CPC prices. Campaigns can be averaged and performance can be gleamed on the channel success or they can be dissected and tracked uniquely for even more precise performance information.

Google, Yahoo, and MSN all offer free conversion tracking. It is very basic, but effective if no other means are available. Google Analytics is a more powerful tool but lacks the cost importing ability for channels besides AdWords. Please refer to our White Paper library for a detailed overview of Google Analytics <http://www.morevisibility.com/seo-whitepaper-library.html>. There are many other solutions available from Log Analyzer Companies and ROI / Conversion Tracking Companies. Yahoo's Marketing Console, Omniture, ClickTracks, CoreMetrix, and Atlas OnePoint are a few examples. Conversion tracking tools are essential to capture the data to utilize the equations described in the White Paper.

The results of the Search Engine Marketing equations don't always lead to black and white decisions. They do provide approximations of campaign performance that can guide a successful online marketing manager or help them prove the value of their work.

SEM Formulas are not just for large ecommerce platforms. They can be (and should be) used on any Web site that is designed to sell or attract leads. They can be used to track overall channel performance or to see how valuable a single keyword is to the sales process. They can be used to justify marketing expenses, increase budgets, and maximize online ad campaigns. Whether a Web site is just getting started or is well established, these equations are part of a valuable toolset.

MoreVisibility's team is well versed in examining the current and potential ROI for online marketing campaigns. It is a value added service that is part of every campaign.