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White Paper The Path to Proper On-page
Search Engine Optimization.

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EXECUTIVE SUMMARY

The purpose of this White Paper is to describe specific Search Engine Optimization (SEO) standards that can be used as general guidelines on any website. While there is no single golden rule to achieve high search engine rankings, the following standards work across a wide variety of industries and all major search engines.

INTRODUCTION

These processes were developed and refined in working with dozens of small to large-market companies such as Mitsubishi Electronics, SureFire Flashlights, Oakley, and Toshiba, among others. They have also been utilized by many of the top SEO and Online Marketing firms today, including MEA Digital, SEO Inc., eTraffic Jams, Net Visibilities and WebAdvantage.net

BACKGROUND

Jeff Carpenter has been involved in Search Engine Optimization since early 2000. He has completed both instructor lead courses offered by Robin Noble's Academy of Web Specialists and worked for some of the top SEO and web development firms in Southern California and across the country.

THE SITUATION

SEARCH ENGINE OPTIMIZATION – PREPARATION PROCESS

Site Development

Website development is often one of the most overlooked aspects of search engine optimization (SEO). You should have SEO in mind when choosing a platform, and planning your site's structure and architecture. If you choose the wrong platform, you could end up spending thousands of dollars on a web site incapable of being optimized.

First, decide if you're going to develop a static website with a number of files to update, or a dynamic website with only a few templates to update. What's the difference? Static websites have very little site development issues that effect SEO, however they can become large, and difficult to manage. On the other hand, using server side code, a dynamic website can make managing a large website easy. However, many dynamic environments can hinder SEO. A system that requires the use of cookies or session IDs can block a search engine spider from indexing pages on your site. Spiders are text-based programs that block or ignore cookies. Session ID's make the web address of a page different for every user. Thus, whenever a spider visits your site, it would be a different address. As a result, most search engine spiders have been programmed to ignore sites that require session ID's or cookies. Your site should be navigable with cookie's disabled, and session ID's turned off, unless it is during an ordering process where their use may be required for back-end fulfillment.

Another issue with a dynamic environment is the URL structure. Dynamic websites use URL variables to determine what database information will be used to create a page. The URL's can often look similar to the following: <http://www.website.com/item.asp?n=6034031&d=115>. The multiple variable string in this URL can cause indexing issues for search engine spiders. The characters in the URL tell the spiders that the pages are created using one file, "item.asp". Some spiders are advanced enough to index a URL with one or two variables (the "n=" and "d=" variables in the above example), but any more than two variables and a majority spiders will have difficulty indexing the site. The solution is a URL rewrite function. Apache servers have a module called MOD_ReWrite, which can convert the above URL into: <http://www.paintballfirst.com/item/6034031/115.html>, which looks as if it was a static website in a directory set up. IIS has a few different tools to do the same thing, like the ISAPI Filter. These servers can translate the new URL structure, so spiders can read them as static website URL's.

Now that you've chosen a static or dynamic site, decide how complex the layout design will be. Many designers today are building their navigation structures in Flash movies or DHTML/JavaScript pull down menus. These are generally safe choices for the user (who you should always think about during design) however they cause a number of issues for search engine spiders. Spiders cannot follow the links in this kind of navigation structure. To facilitate, a secondary menu needs to be added consisting of standard HTML links. This is accomplished by incorporating a footer menu on the bottom of the layout that has links to all the same pages that the main navigation structure includes. If you cannot create the main navigation in HTML, designing a footer is the second best option. In addition, include a link to a site map on your home page; a page that has an HTML link to every listed page. This will ensure that the spiders can find any page on your site within 3 clicks from your home page and that PR is transferred to each page (more on this later).

Another problematic navigation technique involves using frames to split a browser window. In other words, including the navigation in one frame and content in another. The problem here is that a spider can only

view one section at a time. If the spider indexes the navigation frame, and follows one of the links, the next page is stranded. And, since all the links are on another page, the spider views that page as a dead end. Dead end pages don't rank well because spiders view a single page linking to the content page as unimportant information. Otherwise, it would link to more than one page on the site. Using frames, you only have one page linking to the other content pages on your site. The solution is cutting frames and including navigation on each page, so every page on your site links to content. This will increase in-site page rank because spiders see each page as relevant information.

Keyword Research

Finding the proper key words to use for optimization is the most important phase of the SEO process. Even if you rank number one for millions of terms, they aren't relevant if they are never searched for. Keyword research is anticipating how people search for your product or service and there are many tools available to aid this process.

Word Tracker is a paid keyword research service that helps estimate the amount of traffic and competition for various search engines. Specifically, it measures the amount of searches per month, the amount of competition for that term, and provides a KEI (Keyword Effectiveness Index), numerically measuring how effective a keyword is. While the KEI is a key determinant of which words should be used, there are exceptions. If a term appears to have a low KEI, but it generates a good amount of traffic, and more importantly is relevant to your product, it may increase optimization.

Another keyword research tool is The Overture Suggestion Tool. This is a great resource for finding additional terms. It utilizes the search traffic generated on the Overture Search Network and gives you the amount of search traffic and related terms. It's a free service that Overture offers to its PPC advertisers, but can be accessed by non-advertisers for free as well here: <http://inventory.overture.com/d/searchinventory/suggestion/>. This may become a paid service in the future.

Finally, Digital Point Solutions has developed an extremely helpful tool that incorporates the Word Tracker and Overture Tools. It can be found at <http://www.digitalpoint.com/tools/suggestion/>. Remember to pick a mixture of focused terms that describe your product and services, with low competition, including generic terms that generate a lot of traffic. Remember not to make choices based solely on amount of competition. Terms with high competition are usually better as secondary terms.

Keyword Assignment

You have the right terms, but how are you going to use them? To begin, be sure that the keywords are mentioned in the content of your pages. If the pages don't contain the targeted terms, the likelihood of being ranked is reduced and would require more linking. It's actually very simple to assign the terms you choose from your keyword research to page content. Very specific terms should be integrated in the very specific product and service pages. The generic, broad terms should be assigned to the generic pages that aren't as specific.

For example: "Oakley Backpack" and "Oakley Gear". Ideally, you would assign the term "Oakley Backpack" to the Oakley Backpack product detail page as the primary keyword and use "Oakley Gear" as the secondary term. If there were more than one kind of backpack, then the name of a specific backpack should be used as the main term and Oakley Backpack as the secondary term. For the category page, a more generic page that mentions more similar items like duffle bags, suitcases, etc., "Oakley Gear" would be the primary term and "Oakley Backpack", the secondary term.

Be sure not to assign too many terms to a page. Two to three terms per page allows for a range of related topics. By assigning more terms, the page's topic is multiplied and its theme is lost. But, if you assign too little, like a single term per page, you risk over optimizing the page, and being removed by SPAM filters.

To be even more effective, keyword assignments should follow the theme of your site. Beginning at the home page, create consistent subject matter and increase the focus as a user moves deeper into the site. For example, category pages should not mention other categories. They should focus only on it's specific category. Product and service pages should be even more focused, referring only to a particular product or service.

Again, Oakley is the example. The main theme at this site is of course "Oakley", with an emphasis on sunglasses and associated gear. But the theme branches out from there, depending on the category. For instance, in the sunglasses pages, the main theme becomes sunglasses and includes related terms. In the graph below (which uses Oakley as an example), you can see how the terms get more specific as the user digs deeper into the site.

Keyword Assignment and Theme Pyramid									
#	Keyword Assignment Levels	Site Structure							
1	General Terms	Home Page (www.oakley.com)							
	Broad terms that describe what the over all site offers. Not specific on categories or products.								
2	Category wide terms	Sunglasses				Men's Apparel			
	Broad terms that cover subcategory terms, not product specific.								
3	Sub-category terms	Polarized Sunglasses		Women's Sunglasses		Snow Pants		Long Sleeve Shirts	
	More focused then level 2 terms, but still broad enough to cover all products in particular subcategory.								
4	Product specific terms	Half Jacket Sunglasses	Juliet Sunglasses	Teaspoon Sunglasses	Fate Sunglasses	Trap Snow Pants	Sector Snow Pants	Mechanic Long Sleeve Shirt	Thermal Bob Long Sleeve Shirt
	Focused terms that describe particular product. These are the most focused terms on the site, and should generate the highest conversions and sales.								

Notice in the graph, that none of the levels reference any of the other categories. This is essential to maintain proper theme structure throughout the site, as the themes become more detailed, the deeper the user gets into the site.

Site Content

For a search engine to give a topic or keyword weight on your website, there must be content pages that discuss the topic and include keywords. In addition, the content cannot be too short or too long. It must provide a user with substantial, relevant information. If it doesn't, it may not be fully indexed by a spider or filtered out of the result pages. The optimum amount of text for most topics is 300 to 400 words per page, mentioning each keyword 2 or 3 times. This provides a solid keyword density without over-optimizing. This amount of content is relatively easy to create and even easier to read by an end user. After all, if content isn't worth reading then traffic is worthless.

You'll also want to develop unique content on each of your pages. If the content you're providing is found on another website, search engines won't direct end users to your site. Why would they when the same information can be found elsewhere? Search Engine Indexes are becoming very large, so duplicate pages and content are commonly filtered out, and original content pages are maintained. So, make sure your content is unique. If you offer similar products or services as your competitors, send a slightly varied message.

SEARCH ENGINE OPTIMIZATION – ON PAGE OPTIMIZATION PROCESS

HTML Head Optimization

To initiate the on-page optimization process, start with the first section of the document. The space between the HEAD tags needs to be as condensed as possible. Spiders want to reach content as soon as possible when reviewing web page code. They read everything too, so removing excess information is vital. All CSS and JavaScript information should be placed in external files, and referenced with the following tags:

```
<LINK REL="stylesheet" TYPE="text/css" HREF="">
<SCRIPT TYPE="text/javascript" language="JavaScript" src=""></script>
```

An added bonus comes from using a main keyword for your page as the name of the files. So the above tags would read:

```
<LINK REL="stylesheet" TYPE="text/css" HREF="(primary keyword).css">
<SCRIPT TYPE="text/javascript" language="JavaScript" src="(primary keyword).js"></script>
```

It's not a large bonus, but in a highly competitive industry, every little bit helps.

The first tag in the HEAD section should always be the TITLE tag and the title of your web page should be relevant to the theme and topic of the page. Keep it as short as possible, slightly descriptive, and include the keywords assigned to the document. Titles should be 10 to 15 words and under 80 characters. If you want to add the company name, add it at the very end of the tag. Company names don't normally generate a large amount of traffic (unless you're Nike or Starbucks) and shouldn't take up valuable space in prominent spots like the TITLE tag. An example of a proper title tag would be:

```
<TITLE>Main keyword – secondary keyword from website.com (2-3 key phrases, 10 – 15 words,
80 characters max)</TITLE>
```

The META Description tag follows the TITLE tag. This tag is used by many of the small engines and directories and was once one of the most spammed HTML tags used for ranking a website. For these reasons, spiders for the larger search engines have been programmed to ignore the Description tag. However, some small sites still use it for descriptions in SERPs (Search Engine Result Pages) (Google has also started using this tag recently in their SERP's). So using it, without spamming, is recommended. To keep descriptions fewer than 250 characters (spaces included) format them in three parts. The first part is the title of the page, where all the assigned keywords are included. The second part is a sentence from the content of the body that mentions the primary keyword. The third part is a sentence from the body that mentions the secondary term. Grouped together, the META description will include a three-sentence description with the primary and secondary keywords mentioned twice. Here is an example of a description tag:

```
<META type="description" content="Copy of TITLE tag (may be a bit more descriptive version). Content from the pages body that contains primary term. Then content from the pages body that contains the secondary term. 250 characters max.">
```

The often highly spammed META Keyword tag should follow the META Description tag. This tag is very similar to the above mentioned. Only include assigned terms, 2 or 3 that you've designated to the page and are trying to optimize. This tag holds very little weight so don't try to saturate it with other useless terms. Here is an example:

```
<META type="keywords" content="list all keywords assigned to page, lowercase, separated by comma and space character">
```

When you're finished, place a comment tag that reads: <!-- This document contains information about: (insert keywords from keyword meta tag -->. The comment tag adds very little weight to the overall page, but again, every little bit counts.

Combined, these tags make for a well-formatted head section for spiders to read. Once completed, here's how the head section should look:

```
<HTML>
<HEAD>
<TITLE>Main keyword – secondary keyword from website.com (2-3 key phrases, 10 – 15 words, 80 characters max)</TITLE>
<META type="description" content="copy of title (possibly more descriptive). Content from the pages body that contains main term. Content from the pages body that contains the secondary term. 250 characters max.">
<META type="keywords" content="list all keywords assigned to page, lowercase, separated by comma and space character">
<META name="GOOGLEBOT" content="index, follow">
<META name="Robots" content="index, follow">
<!-- This page contains information about: keyword one, keyword two -->
<LINK REL="stylesheet" TYPE="text/css" HREF="(main keyword).css">
<SCRIPT TYPE="text/javascript" language="JavaScript" src="(main keyword).js"></script>
</HEAD>
```

HTML Body Optimization

You've developed your website, picked keywords, assigned them to particular pages, developed the content to support the terms, and optimized the HEAD section of your page. Now its time to create the body section, the part of the web page that people will actually be able to view. During this process, follow a first-third rule. That is, any element you can add a keyword to, you'll add the word to the first third (1/3) of it. This will place important keywords in the most prominent position in the element and thus be assigned a heavier weight than other words.

To accomplish this, add Section 508 standards to your document. These standards help users with screen readers and other accessibility issues read your website. Search Engine spiders read these tags and it's

a great advantage to include them in the optimization process. First, the summary attribute. Find and edit each TABLE tag by adding a summary attribute to it. This is used to describe the content in the given table. Study the information and include a very brief description of the contents in the table. If the table contains the site navigation use the following: `summary="Site Navigation"`. Once all summary attributes have been added to the table tags, go back and rotate your assigned keywords through the beginning of each attribute. In other words, from the first summary attribute beginning at the top, place the primary keyword, a hyphen, and the brief description from before. For example, if the first table on the site contained the navigation, the summary tag would read `[summary="Primary Keyword – Site Navigation"]`. As you continue down the code, rotate your keyword list so you evenly distribute the keywords assigned to the page into all the summary attributes.

The next element of the Section 508 standards is the ALT attribute for IMG tags. Unlike the summary attribute, don't add ALT attributes to every IMG tag. The ALT attribute is alternative text used to describe images if the user has images turned off, utilizes a screen reader, or if for some reason the image location is incorrect and the image does not appear. The only images that should have ALT attributes are ones used in HREF tags or images that need a description, like a life style type picture. In this case, the image would be broken and leave a large blank spot on the page.

First, fill in the ALT attributes without using keywords. Make your ALT attributes as short and descriptive as possible. You're trying to make the ALT attribute's length less than or equal to the length of your longest term. If the image is being used in an HREF Tag, describe the page that the image links to. Once all ALT attributes have been assigned, starting at the top of the code, rotate your keywords through the ALT attributes. By adding the keyword to the front half of the tag, it will read like this: `[alt="Primary Keyword – Image Description"]`. Now, the keyword is in the most prominent position and the element is still used in its original version. Continuing down the code, rotate through the keyword list so you evenly distribute the keywords assigned to the page into all the ALT attributes.

The final Section 508 standards of the SEO process are the TITLE attribute for HREF tags. The TITLE attribute is used for describing the target of the HREF tag. When it is utilized, moving the mouse over the link causes a tool tip window to appear and describe the link. Screen readers also use the TITLE attribute to describe the link for users that have trouble viewing the site. Like the SUMMARY and ALT attributes above, you'll first fill out the TITLE attribute before you add the keywords. Using 1 to 3 words, describe the page being targeted and then add the keywords by rotating through your assigned keyword list. The TITLE attribute will look like this: `[title="Primary Keyword – Target page description"]`. Remember to rotate through the terms assigned to the particular page to distribute your terms evenly.

Other page elements that provide a small, but useful advantage are the header and bold tags. Use the header tag to describe, in brief, the content of an upcoming paragraph or entire page. Typically, header tags are very large and can take away from the feel of the designer's layout. By using cascading style sheets however, you can control the look of the header tag and modify it, without taking away from a user's experience. Be sure to place the keyword at the beginning of the header tag, and keep the remainder short. You'll likely need to be very creative, make sure that it reads properly and that it isn't confusing for the end user. Bold tags are the simplest items to implement. Simply wrap the "B" tag around 2 instances of each keyword in the body content. You can edit the "B" tags using CSS so they don't appear as bold or so that they are even bolder than normal. This way you can use the element and still maintain site design and user experience.

Lastly, all internal links on the site should be absolute paths. The SRC of IMG tags and other elements

on the page can remain relative to ensure optimum server load time. Remember not to over use or stuff keywords anywhere that it doesn't make logical sense. Stuffing or spamming techniques can produce results in the short run, however in the long term, the site may be banned from search engines. Long-term results are the goal, and landing a website on the black list of a search engine is the last thing you want.

Information Pages

Many SEO professionals cringe at the mere mention of information pages because of the confusion of doorway pages. Doorway pages are files on your website that stand alone, and are created solely for search engines. Generally, they have a very high keyword density, and are stuffed with keyword spam. More often than not they don't make sense to readers and may result in your website being removed from search engine directories.

Information pages are integrated into your website. They're generally used on dynamic websites that are limited to what on page elements can be modified. The site's navigation scheme is generally updated to include links to and from these pages, so the user and the search engine spider can locate and utilize these files. Usually each information page focuses on one particular term or theme. They're built by the same SEO standards mentioned above, but are a bit more focused on one term as opposed to two or three. Again, these are generally used on sites that are limited because of the technology they're built with.

Site Map's and Site Directories

A site map is a tool used to help your user find any page of your site from one general location, instead of making a user browse categories and sub-categories. Aside from the general site layout and design, site maps usually do not contain any other text, only HTML text links. These links are descriptive and direct users to a particular page that is usually formatted into a readable layout. Site maps are useful for SEO for the same reasons they're useful to users. Spiders can follow these links and index the entire site rather quickly. The site map usually allows the spider to get to any page on the site within three clicks of the home page. As a result, each page is indexed quickly and helps to transfer the home page's Page Rank to other pages in the site. Sitemaps are usually accessed from the home page, with a simple HTML text link that reads "Sitemap".

A Site Directory is a slightly modified version of a site map. This file is usually placed inside a directory that has been named after the site itself. The file name should be index.html (or whatever the server has set as default). It contains links to all files that have been optimized. Along with these links are brief descriptions of each page. In this case, you should place a home page link, along with its description, as the first link on the page, along with any other information page links as well. Following the links to information pages, or after the home page link if no information pages exist, list and describe all other pages on the site that are optimized. The use of a site directory ensures that users can find the important pages as easily as possible. Having these additional links to the optimized pages will increase internal link weight to each of these pages too.

If your site utilizes reciprocating links, include a link to each of your reciprocating link pages at the bottom of the site directory. This improves Page Rank on the resource pages. The link to the Site Directory, like the site map link, should be at the bottom of the home page and labeled "Site Directory".

These two options are valuable tools in ensuring each page of your site is properly indexed, and is easily found by users of your site and search engine spiders alike.

Remember, proper search engine optimization is an ongoing process. There are many off-page items

such as link building (that will be discussed in a later paper) that are a vital part of the complete search engine optimization process as well. This document was created to provide tools to handle the basic optimization process of a website. To that end, some items have been overlooked purposely as they are not suitable for all situations. Furthermore, techniques referred to as “Black Hat” or “unethical” haven’t been mentioned because they can often lead to sites being completely removed from the major search engines and blacklisted.

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EXPANDED AUTHOR BACKGROUND

Jeff’s career began with San Diego Media, where he rendered the proprietary ecommerce system, MaxEXP, (which San Diego Media was developing at the time), 100% search engine friendly. While there, he was witness to the fact that the SEO industry was still in its infancy in how to optimize dynamically generated web pages. With no forums, previous examples, or established protocols, Jeff was able to optimize and release MaxEXP in months. Today, MaxEXP is a web services eBusiness platform that generates entire dynamic website with 100% search engine friendliness.

Later, Jeff moved to one of the top SEO firms, SEO Inc., in Carlsbad, California. There, he honed his search engine optimization skills while optimizing many small static websites and larger dynamic sites for a broad range of clients. At SEO Inc., Jeff was one of only two senior engineers with the skills to fully oversee the optimization process for fully dynamic websites.

Today, Jeff makes his home at MEA Digital, a leading online advertising agency in Southern California. As manager of all SEO operations, Jeff routinely brings his considerable talents to bear on unique and ever-changing demands of clients in a variety of industries. From retail, to education, and financial services, Jeff has enhanced PR (Page Rank) for a multitude of clients under MEA’s management.

ABOUT MEA DIGITAL

MEA Digital is a top fifty interactive marketing strategy and services firm based in San Diego, CA. The agency provides a wide array of interactive marketing services from web development to online advertising and performance marketing for world brands including: Toshiba, Oakley, Mitsubishi, Odyssey, HSBC, Kyocera Wireless, Openwave and Chopra Enterprises. As a division of MEA, San Diego’s leading integrated marketing communications firm, MEA Digital is able to provide its clients with a truly integrated approach to marketing. To learn more, visit: www.meadigital.com.



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