

PAYMENT FOR INCREASING WEBSITE EXPOSURE IN SEARCH ENGINE RESULTS - TECHNICAL AND ETHICAL ISSUES

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ABSTRACT

The objective of this research project was to survey the technical and ethical issues regarding payment for increased search engine rankings. The large number of Internet users created a potential for financial gain through marketing. It was clear that there is strong commercial motivation for ensuring that web pages appear high up in search engine results. A number of systems were put into place to enable web site owners to increase their ranking in exchange for payment. These are paid inclusion, paid listings and the selling of advertising space.

It was found that a number of unethical methods exist to increase ranking, including spamming, cloaking, doorway pages and link farms. Confusion also appeared to be common amongst users regarding the difference between paid and unpaid content.

In conclusion, it is believed that the level of commercial competition for web site ranking will only increase. Payment for casual information searching is also a development which will decrease user frustration by increasing information quality of Internet web sites.

CATEGORY

Full research paper

KEYWORDS

Internet, web site, marketing, payment, visibility, exposure, search, engine, ethical.

1. INTRODUCTION

Internet users often rely on search engines in an attempt to find relevant information on the Internet. They expect the results obtained to: be clear, appear quickly, be ranked from most to least useful and above all be relevant to their specific need. Although this expectation is often not met, it is still claimed that search engines generate approximately 80% of web site traffic (BTLookSmart 2001).

A dated but pivotal study has proven that 83% of the 800 million web pages in existence at the time, were commercial by nature (Lawrence and Giles, 1999). The importance of this commercial aspect of Internet content was confirmed when the large Internet service provider AOL took over the media giant Time-Warner (Thelwall 2001:114).

The most basic purpose of a commercial web site is to encourage visitors to purchase goods or services offered by the web site owner. Therefore, the first aim of the web site owner is to attract visitors to the web site. This is generally believed to involve registration of the pages with search engines, to allow their crawlers to visit and index these pages. The first crawler (automatic program which gathers web site data, also called robot, bot or spider) was released in February 1994 (Thelwall 2001:117). This program was called the "World Wide Web Worm", and later proved to be the precursor to similar harvesters on which many search engines would depend to gather data.

However, it has been proven in other research that "additional steps" must be taken to make web sites more visible and attractive to travellers on the superhighway - visits are not guaranteed (Thelwall 2000:150).

During the past few years, a new approach to ensuring high ranking by search engines has emerged: payment for exposure. This has evolved in a variety of technically complex and sometimes ethically questionable ways.

The principal objective of this research project was to report on technical and ethical issues regarding customer payment to increase web site rankings in search engine results.

2. SEARCH ENGINE COVERAGE, RANKING AND RELEVANCE

There are a number of sources of web site addresses available to the user. One is to obtain the URL (Universal Resource Locator, or site address) from an external source (printed press, word-of-mouth, URL guessing), and simply type it into a browser program. Secondly, the user could click on a link on one web page, and be transported to another. However, search engines and directories in the third place provide by far the largest percentage of traffic to web sites (Thelwall 2001:114).

2.1 COVERAGE

It was claimed that the maximum coverage of the total Internet by any one search engine at the end of the nineties was only 16%, while the combined coverage from all search engines was only 42% (Lawrence and Giles 1999:109).

This implies that approximately 58%, or 464 million web pages were inaccessible to most users at that time.

Another researcher claimed that approximately three quarters of web sites in existence at the time were not registered with any one of the five major search engines. It was further stated that the "description" meta tag (which could increase coverage) was generally lacking, and the use of frames on home pages (which could decrease coverage) indicated a general lack of insight into the importance of proper coding for search engines (Thelwall 2000:158).

A user can confirm these claims by loading a few search engines, and searching for text which is known to be present on some valid web sites. Not all of these web sites will be listed on the result pages in all cases. The reasons for this lack of coverage are many and varied, and some of these reasons are easy to explain. As an example: if a web site has just been published for the first time, it cannot be present in a search engine index at that very moment. However, the user is left with a feeling of frustration at being unable to access one single index which contains a listing of all the web sites available on the Internet at a given moment.

2.2 RANKING

2.2.1 Achieving Ranking

Ranking refers to the order in which search engine results are listed on the user's screen. All search engines use algorithms to rank the results of a user's search in some order before presenting it to this user. The details of these algorithms are normally a closely guarded trade secret, but often involves the weighting of certain parts of the web page being evaluated (Thelwall 2001:117).

One heuristic often used to rank a given web page, is the number of other links pointing to it. Furthermore, prominence is given to these links from pages who themselves have high link counts (Thelwall 2001:117). This approach is a mirror of the process used in the academic world of rating citations highly which are from authoritative works. However, through payment to URL link farms it is possible to create artificially large numbers of links to a certain page (Introna and Nissenbaum 2000:56). As a result, a high inlink count could depend on the value of the information on a web page, but also on the financial resources of the owner of the web page. This practice puts a question mark over the validity of the number of inlinks to a given page.

2.2.2 Value of the Top Ten

It is common practice for search engine programs to display only the first 10 to 20 results of a search by default. An empirical study has proven that travel agents using an online reservation system exhibited a strong preference for selecting a flight from the first screen of search results (Friedman and Nissenbaum 1996:330). Many other studies have confirmed this phenomenon (Courtois and Berry 1999:43, Notess 1999:84). As a result, web designers jealously compete for one of these top 10 to 20 sites (Introna and Nissenbaum 2000:56).

2.3 RELEVANCE

A sizeable part of information retrieval research covered the study of relevance (Weideman 2001:62-64). A common situation highlighted by this research was that the user's expectation of relevant answers to a search query was often not met by the search engine's list of results. Search engines face the daunting task of having to index as much as possible of the Internet as quickly as possible, evaluate the quality of each web page and present the user with the most relevant web pages out of its collection of millions (Thelwall 2001: 117). This could be one of the reasons why users are often disappointed in the degree of success of their Internet searches (Weideman 2001:69-72).

To summarize what has transpired so far:

- millions of users have easy access to information on web pages,
- the content of more than four out of five of these pages is trying to earn money for their owners,
- search engines provide the most commonly used method of access to these pages, although users are often frustrated by the results, and
- users only view the first few results provided by these search engines.

The stage has been prepared for what is inevitable: a no-holds-barred contest for the coveted top spots on search engine result pages, in an attempt to tap into the riches promised by extreme numbers of potential customers. It comes as no surprise that the commercial world has become heavily involved in the big business of marketing products and services via web sites.

3. WEB SITE MARKETING

Proper web site marketing should yield high search engine rankings and should lead to increased traffic and customer spending at for example an e-Commerce web site. As a result, web site optimisation for search engines has developed into a fine art. Methods for achieving results include HTML tweaking, careful keyword choices and a number of other approaches. Some of these (including doorway pages and cloaking) are regarded as obscure and even bordering on being regarded as illegal.

3.1 MARKETING POTENTIAL

Yahoo confirmed the popularity of search engines in 2000 by claiming 625 million page views per day (Thelwall 2001:114). The commercial potential of marketing to this kind of traffic volumes is staggering. For example, say only 1% of these viewers respond to an advertisement hosted by Yahoo, and only 1% of this 1% actually complete the purchase process. Assume the product costs \$10 (including a profit of \$1), then a turnover of \$625 000 yielding a profit of \$62 500 per day is generated!

However, it is important to note the difference between editorial and advertising content (Sullivan 2003a). Ultimately users visit web sites to find information of value to them, and not to view advertisements. A recent study has proven that interstitials, pop-ups and other forms of web page advertising irritate and frustrate users (Weideman and Haig-Smith 2002).

Other research indicates that online promotion appears to be the most common motivation for the creation of a web site (Hooi-Im and others 1998). This promotion was classified as the advertising of products or services with the intention of convincing customers to purchase them offline. With the advent of e-Commerce, the drive is on to change the emphasis from "offline" to "online" in this definition.

3.2 META TAGS

Meta tags could play a real role in the electronic marketing of a web site (Thelwall 2000:157). One author found that there is a strong relationship between the proper use of meta tags and registration with search engines. It was attributed to the fact that designers who were likely to use meta tags, were probably also likely to go to the trouble of proper search engine registration (Thelwall 2000:158).

A study was done on the value of the HTML "description" meta tag on web pages indexed by Yahoo (Craven 2001:203), and it was found that its use positively influenced indexing. Other studies have proven that usage of this and other relevant meta tags vary depending on the aim of the web site. A set of results which oppose this view comes from a study done on a sample of 200 e-Commerce based web sites. Some 69 did not use this meta tag at all, 20 used it incorrectly and the remaining 111 used it effectively (Weideman 2003:233). More recently, meta tags in general are listed as one of 12 metrics which impact on the quality of a web page (Tamimi and others 2003:147). In an early study on the effectiveness of specifically the "keyword" meta tag in making web sites electronically visible, researchers found that the presence of this meta tag substantially improves accessibility (Turner and Brackbill 1998:258).

3.3 INDUSTRY STANDARDS

The search engine marketing industry seems to be in need of marketing guidelines and ethical standards, but it does not appear as if the industry can agree on these (Sherman 2002). Google, generally regarded as being the industry leader in search engine programs, has recently attempted to set ethical standards in this regard. However, search engine optimisation vendors have considered this attempt as creating buyer confusion (Sherman 2002).

Throughout the growth of the mass of unorganised data on the Internet, one element has remained more or less constant: the important role the search engine plays in information retrieval. As the pressure increases to survive financially, two strands of which the user should take note have emerged: advertising and "pay-for-position" (BTLookSmart 2001).

4. TECHNICAL ISSUES

A variety of methods became available through which a web site owner could improve the visibility of his web site. All of them involved payment. Some of these methods include:

- paid inclusion, pioneered by Inktomi, whereby a crawler visit is guaranteed in a short period of time (Sullivan 2002c),

- express indexing, enabling impatient web site owners to hop over others in the six month queue (offered by Yahoo),
- buying a higher ranking by bidding for top positions (AltaVista & Doubleclick),
- buying keywords to guarantee high rankings (Yahoo & Lycos) (Introna and Nissenbaum 2000:57), and
- buying relevant text-based ads from Google (they launched the AdWords program in late 2000 (BTLooksmart 2001)).

4.1 PAID INCLUSION

An independent expert who is generally considered to be a world leader in the field of search engines, supported the concept of payment to ensure inclusion in an index. However, he stated that this concept was sold in a confusing way, leaving web site owners with some uncertainty as to the claims made by search engines (Sullivan 2002c).

4.1.1 Contradictory messages

As an example, FAST assured their clients that it has the freshest and largest index, but warned that their web pages will be ignored or not refreshed often. AltaVista claimed to have a very comprehensive service, but requires web site owners to continually submit their URL's. Web site owners were receiving many mixed messages from search engines.

A crucial point to note at this stage is that most search engines stated emphatically that paid inclusion will not affect ranking in search engine results (Sullivan 2003a). AltaVista claimed to concentrate specifically on ensuring fairness by not allowing paid inclusion listings to crowd out crawled (unpaid) content (Sullivan 2002b). This claim was refuted by some experiments which produced URL's containing a "?" symbol during a normal search on AltaVista - these URL's were unlikely to be picked up during a normal crawl. For example, search results in this experiment consistently included references to the URL of a leading department store over a wide range of queries on items not associated with products being sold there.

4.1.2 FTC Intervention

In an attempt to clear up this confusion, the US Federal Trade Commission (FTC) published guidelines to search engines in June 2002 on disclosure of paid content to users. These guidelines stated that a help page had to inform users that some content was paid for and was not produced by natural crawling (Sullivan 2003c).

4.2 PAID (PLACEMENT) LISTINGS

This service became available for the first time during 2001, and differed from paid inclusion by offering users the guarantee that their URL will appear in result listings in favour of other, unpaid content. Revisits by search engine crawlers are also guaranteed (Sullivan 2002a). Other terms used for this service include:

- pay for placement,
- pay for position, and
- pay for performance.

Guaranteed placement involved web site owners bidding online against competitors for placing against specified search terms. This service was initially offered by Espotting and Overture (BTLookSmart 2001). As an example, FAST/Lycos offered this service at an \$18 setup fee, plus \$12 per URL, with crawler visits guaranteed every two days for a year.

An extreme example of paid listings can be found in Overture's implementation (formerly GoTo). Their entire index is composed of web pages who are competing with others against payment for better placings (BTLookSmart 2001). Overture's main rival in the UK is Espotting.

4.2.1 FTC Guidelines

The FTC intervention referred to earlier also specified the way in which the fact that listings are paid should be divulged to the user. Instead of being hidden on a help page as with paid inclusion, the status of paid listings had to be stated on the search results page. Furthermore, it had to be clearly separated from non-paid listings, and the term "sponsored" was proposed to be used to identify paid listings (Sullivan 2003c).

4.2.2 User Confusion

The FTC guidelines appeared to cause confusion amongst users. A study was done by Consumer WebWatch with 17 users who were initially unaware of paid listings. They considered the term "sponsored" to be unclear, and some claimed that search engines are using it to disguise the fact that certain content are paid for (Sullivan 2003b).

5. ETHICAL ISSUES

Two situations raise some questions when considering ethical issues of web site marketing for search engines:

- a given web page could be excluded from search engine rankings while it in fact deserves to be there, and
- a given web page could be included in rankings resulting from payment by the owner and not intrinsic value to the user.

Commercial bias by search engines results in the favouring of "popular, wealthy and powerful" sites at the expense of others (Introna and Nissenbaum, 2000:54). Do Internet users want to view web sites whose owners paid for the privilege of appearing first on their screens, regardless of content? After all, search services are free to the user, so does the user have any right to claim advertisement free content? Do they rather want to view web pages which contain the answer to their search queries? These are complex questions with no easy answer.

It is also claimed that technical savvy can lift the ranking of one page above another. One designer could have more skills in coding a web page to be visible to search engines than another, but this does not imply that his web page contains more accurate, timely or more relevant information than the other one (Introna and Nissenbaum, 2000:57).

A number of ethical concerns about the way some web pages find their way into search engine rankings deserve mention.

5.1 CLOAKING

Some web pages are coded in such a way that one page is served to the search engine crawler, allowing it to be indexed. However, when the user selects that page from a search engine result listing, a different page is served to the user's browser. This is sometimes referred to as bait-and-switch techniques.

Some confusion exists in the industry as to the ethical correctness of this technique. Sullivan claims that some search engines actually use it themselves (Sullivan 2003d).

5.2 DOORWAY PAGES

A doorway page is an "extra" web page that was created with the sole intention of pointing to the actual, content-bearing page which might be hosted at a different URL. A company selling bicycles might register the following URL's: bicycle.com, bicycle.co.za, bicycle.co.au, bicycle.co.uk, etc. The actual content will then be hosted on web pages at bicycle.com. All the other URL's contain web pages optimised for search engines, containing little content of value, but they all point to bicycle.com. These "other" pages are referred to as doorway pages.

A parallel exists between cloaking and doorway pages in the sense that both are sometimes advocated as being legal, useful and beneficial in certain cases. It is claimed that Inktomi actually use a form of doorway pages (Sullivan 2003e).

5.3 SPAMMING

A number of spamming methods exist whereby search engines can be tricked into giving a web page a higher ranking than what it deserves based on the value of its content. The SEO industry (Search Engine Optimisation) has earned a bad reputation as a result of the implementation of some of these methods, but most search engines have subsequently been reprogrammed to recognise and reject these occurrences (Sherman 2002).

Keyword stuffing involves the repetition of the same descriptive word in the "keyword" meta tag, forcing the search engine to increase the weighting of that web page for that keyword. As a result, almost all search engines simply do not recognise this meta tag anymore, thereby eliminating a potentially useful indexing feature. Keyword stuffing is also found in the body of some web pages. This can be hidden from the user by specifying a font size so small as to make the words invisible, or by setting the text and the background to the same colour (Introna and Nissenbaum, 2000:57). The use of hidden heading text under flashing graphics can also lead to increased weighting being allocated to a page (Sherman 2002).

5.4 LINK FARMS

It has been mentioned that some search engines use the number and quality of the links to a page as a weighting factor in determining its ranking.

This has given rise to another form of potential abuse: the creation of a web page (a link farm) with a series of links to another page, merely for the sake of creating the impression that this other page has content of value (Thelwall 2001:118). Another variation on link farming is the concept of link swapping. Web sites such as www.BannerExchange.com advocates the exchange of linked banners with the express purpose of artificially lifting rankings. A number of these sites were found during a study on the effect of web page hyperlinks on the number of visitors (Thelwall 2001:120).

6. EXAMPLES

The screenshot shows a Google search interface. The search bar contains the text "dell laptop pentium 4 specifications" and a "Google Search" button. Below the search bar, there are navigation links for "Web", "Images", "Groups", "Directory", and "News". The search results indicate "Results 1 - 10 of about 10,800". A tip states: "Tip: In most browsers you can just hit the return key instead of clicking on the search button." The first result is a sponsored advertisement titled "Cheap laptop reviews" with a snippet: "... of laptop are; Toshiba, IBM, Sony Dell and Hewlett ... This Pentium 4 laptop has plenty of memory and hard ... Here are the specifications: Intel® Pentium® 4 2.4GHz ...". The URL is "www.refurbished-laptops-and-cheap-laptop-reviews.com/cheap-laptop-reviews.htm - 22k - Cached - Similar pages". To the right of the ad is a "Sponsored" box with text: "Low Price 3.2Ghz", "16" LCD, Dual Channe", "Intel 800Mhz FSB CPU", "www.rjtech.com", and "Interest: [progress bar]".

FIGURE 1 - Search for specifications showing bias

A search was done for the technical specifications of a certain make of laptop computer using a certain processor. The search keywords did not in any way refer to buying a computer, best prices, reviews, etc. The results shown in Figure 1 indicate a certain web site which achieved the first position out of almost 11 000 answers. This web page makes a strong case for selling and reviewing laptops, and it does include specifications for these products.

As shown in Figure 2, the search was repeated with a different make of computer specified. This time the same page achieved second position out of almost 9000 results. Another four tests with yet other brands yielded placing in the top five results for this web site in all cases. This seems to indicate that the specific web site, specialising in sales, ranks well in a search which did not include a reference to sales, prices, best deals, etc. Strong commercial bias appears to be evident.

Google™ [Advanced Search](#) [Preferences](#) [Language Tools](#) [Search Tips](#)

[Web](#) [Images](#) [Groups](#) [Directory](#) [News](#)

Searched the web for **Toshiba laptop pentium 4 specifications**. Results 1 - 10 of about 8,810.
 Tip: In most browsers you can just hit the return key instead of clicking on the search button.

[TOSHIBA LAPTOP COMPUTERS - introduction canon sony logitech fuji ...](#)
TOSHIBA LAPTOP COMPUTERS. Satellite Series. ... **TOSHIBA** Satellite Series. . . Satellite
 1410-303e. . . . Features: CPU: 2.0Ghz **Pentium 4**. Memory (RAM): 256MB DDR. HDD: 30GB.
www.digitalexpress.co.za/laptops/toshiba_laptops.htm - 63k - [Cached](#) - [Similar pages](#)

[Cheap laptop reviews](#)
 ... This **Pentium 4 laptop** has plenty of memory and hard drive ... As usual **Toshiba** have put it in a stylish ... Here are the **specifications**: Intel® Pentium® 4 2.4Ghz ...
www.refurbished-laptops-and-cheap-laptop-reviews.com/cheap-laptop-reviews.htm - 22k - [Cached](#) - [Similar pages](#)

Sponsor

Low Price 3.2Ghz
 16" LCD, Dual Chann
 Intel 800Mhz FSB CP
www.rjtech.com
 Interest:

Pentium 4
 Compare Prices and
 Find the Best Deals a
www.BizRate.com
 Interest:

Buy Laptops from
 Refurbished to excelle
 Low export prices for
www.USAnotebooc

FIGURE 2 - Search for specifications showing bias

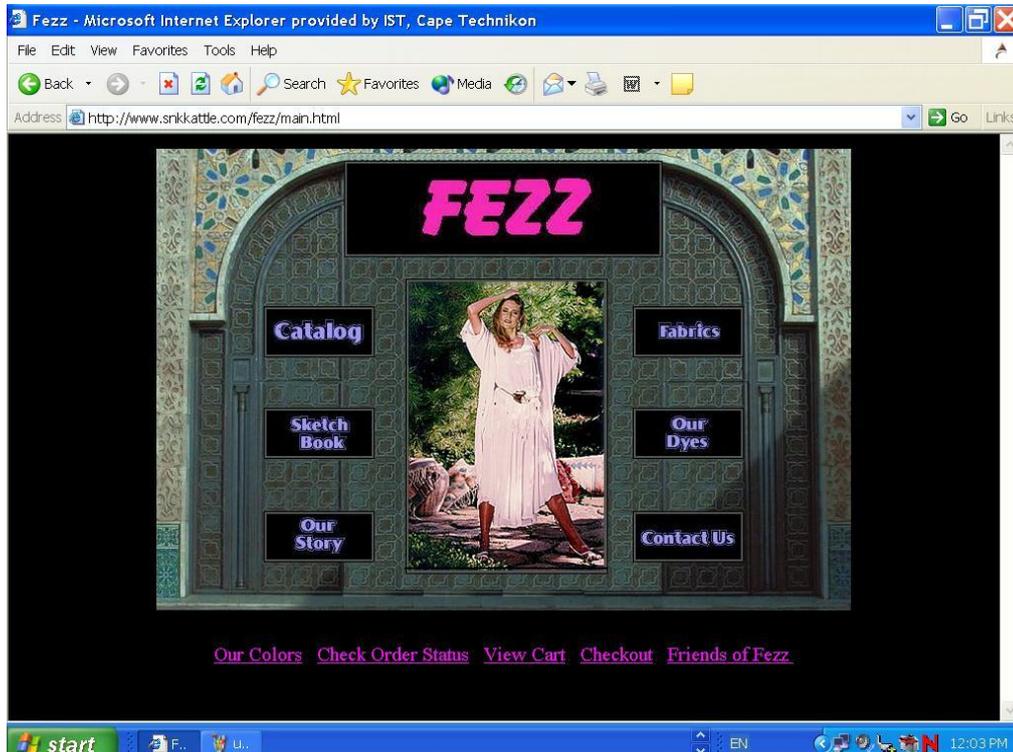


FIGURE 3 - Real home page for clothing company

Figure 3 shows the home page of a company selling lady's clothing. Most of the elements expected on this kind of page are present: a catalogue, contact page, fabrics, etc. Figure 4 shows one of a number of doorway pages to the page of Figure 3. It contains information about the real home page, with a large number of links to it (only two links are visible in the Figure). In this way a large number of legal inlinks to the home page are created, which will lift the ranking of the actual home page.

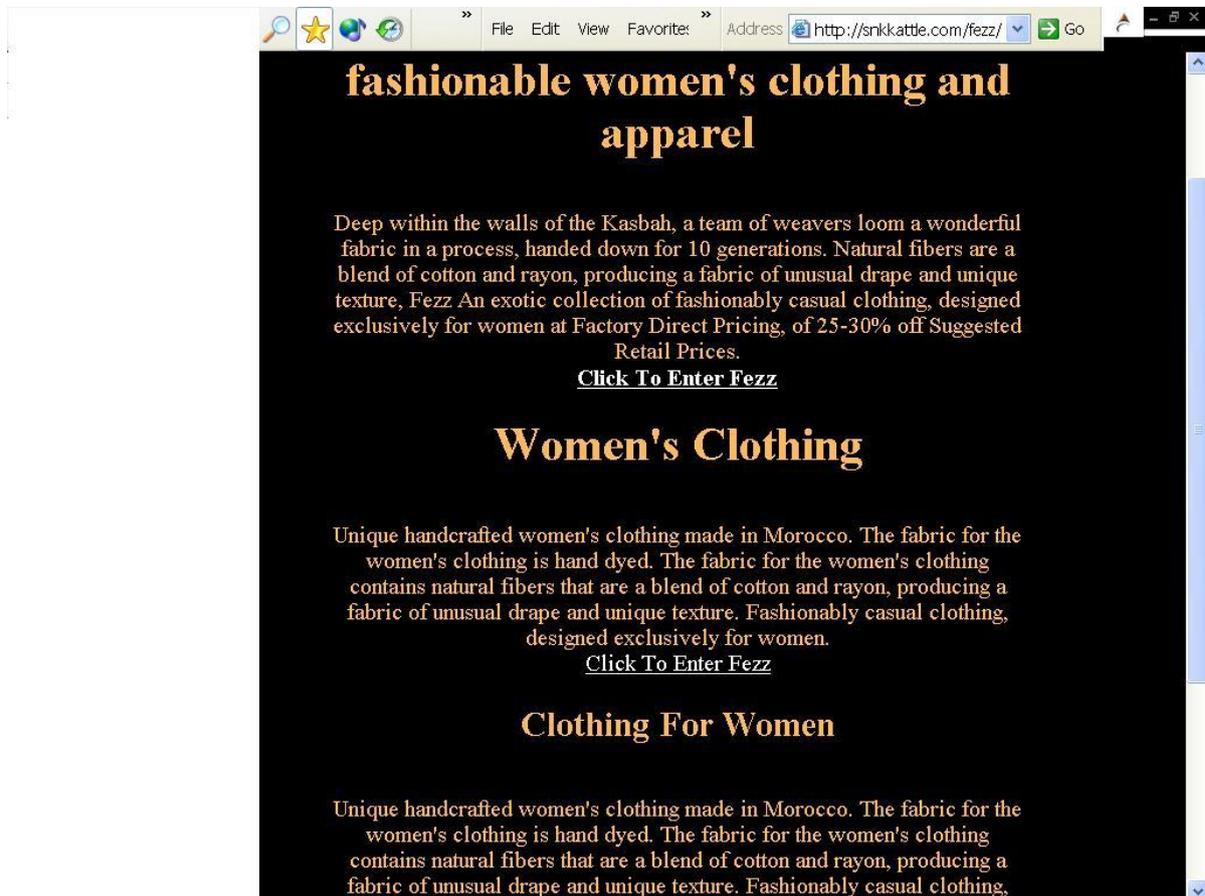


FIGURE 4 - Doorway page for clothing company

Invisible Ink

Sometimes spammers want the reader to see one message while the mail filter reads another. Their hope is that the filter will be confused by the use of random, seemingly innocent words; for example, a message containing the word "Viagra" and what appears to be a letter from the recipient's mother.

This technique is achieved by manipulating the font and background colors so that the bogus text appears on the screen in the same color as the background, making it invisible to the reader. The most common Invisible Ink technique is white text on a white background.

For white text, the spammer uses the `` HTML command again (similar to the Black Hole trick), but specifies a color instead of a size. By writing ``, the spammer tells the email program to output the text that follows it in white.

At the same time, the spammer is able to set the background color for the email using the `<body bgcolor=white>` command. Used in conjunction with the `` command, the spammer's bogus message magically becomes invisible.

In this example, the word "Viagra" appears, while the rest of the text is hidden:

```
<body bgcolor=white>
Viagra
<font color=white>Hi, Johnny! It was really nice to have dinner
with you last night. See you soon, love Mom</font></body>
```

It is sometimes possible to spot this technique in use, since the email will appear to contain a long, blank area at the bottom. But if the reader were to highlight the area, the words would magically appear as the font colors are inverted to show the selection.

FIGURE 5 - Coding example of invisible text

Figure 5 contains an explanation of how text can be put on a page which is invisible to the human eye, but visible to the search engine crawler. Other text on the same page can be made visible to the human eye.

The image shows five promotional boxes for link exchange services, arranged vertically. Each box has a light blue background and a thin border. The text in each box is as follows:

- Try Arelis 4.0 for Free**
Increase website traffic, and sales
Get top search rankings. Affil
Axandra.com
Interest:
- Increase Link Popularity**
Create reciprocal links, Improve
SE Rankings and Increase sales
www.affiliate-finders.com
Interest:
- Reciprocal Links**
Exchange your links with us!
Its free and easy.
www.lovingbarcelona.com
Interest:
- Link Exchange Engine**
Send hundreds customized link
exchange emails (Gooogle feeds).
realdeebiez.com
Interest:
- Get more reciprocal links**
The serious way to get reciprocal
links. Top rated program.
www.Axandra.com
Interest:

FIGURE 6 - Web sites for link exchanges

An example of some link exchange programs is given in Figure 6.

7. CONCLUSION

The original goal of the creators of the Internet was to easily share data between researchers in the academic community. Since then there has been a strong pull from the commercial world for exposure and usage of the Internet. Reasons for this move are coupled closely to the potential of commercial gain through large numbers of potential customers. This is borne out by the claimed 83% commercial Internet content.

The high level of competition for result ranking stems from this potential financial gain. It is concluded that this drive will only become stronger as long as the Internet provides a home for e-shopping, which in itself is a commendable development.

Meta tags seem to have lost their potential for assisting with information indexing, due to human abuse and subsequent search engine shunning. Marketing seems to suffer from a variety of unscrupulous attempts to increase rankings of web pages. It appears that every attempt by coders to achieve a high status in ranking is followed by a change in search engine algorithms to counter this attempt. This reflects back to the early days of computer viruses - every new virus appearing created a flurry of activity and new anti-virus measures. It is concluded that the marketing of web sites will involve a constant game of tag between unethical coders and search engine algorithm designers.

The confusion amongst users regarding paid and unpaid content is a result of deficient search engine PRO. At the same time, users have a free choice to ignore paid content and concentrate on web sites containing only useful content. Most users are enjoying a free service from search engines, and they can decide which one they want to use. The academic world does not enjoy the same amount of access to free information as casual users do - registration and payment is often required for access to full-text academic materials. In exchange for this payment however, high quality, peer reviewed information becomes accessible to the user.

Finally, it is concluded that payment for casual access to search engines will increase the quality of information available. Income generated from users could be applied to filter low quality web sites from search engine indices to provide smaller but higher quality data stores. At the same time instances of cloaking and spamming could be detected and those pages removed from indices.

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