

## EVALUATING YOUR WEB SITE – MEASURING ITS VALUE

#2016

Christian Super, ASI Market Research  
101 N. Brand Blvd., Suite 1700, Glendale, CA 91203

Voice: (818) 637-6470

E-mail: [csuper@asimail.com](mailto:csuper@asimail.com)

Web site: <http://www.asiresearch.com>

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### **MARKETING AND THE WEB**

Many of the earliest Web sites remind us today of television advertising of the 1950's. They were simple, one-dimensional, and cost little. Companies gained caché just for having a Web site. Now, a corporate Web site can cost hundreds of thousands of dollars and can include advanced and evolving computing technology. With increased pressure on profits, Information Systems professionals, marketers, and other corporate managers must prove the value of that investment to the organization.

The Web is being used as a marketing tool much like advertising, promotion, and direct marketing have been used for years. Measuring the success of any of these endeavors should be based upon the achievement of marketing objectives. The Web as a marketing vehicle is, however, substantially different from other vehicles.

Traditional media, like television and print, function in a one-to-many model. The marketer "broadcasts" a message through the medium that is passively received by the target audience. The interactive Web changes the model to many-to-many with consumers being empowered by the two-way communication. Ultimately, this makes the Web a powerful marketing tool since its usage can be selective and intelligent. Smart marketers can personalize their message to individual consumers and therefore can provide customized marketing en mass.

Marketers find the Web to be an excellent vehicle for many reasons. The current demographics of Web citizens – highly educated professionals with above average incomes – are very attractive to many businesses. The communication channel using the Web is wide and deep. It gives companies a global presence. The Web allows marketers the opportunity to present a depth of information that would be impractical or too expensive in other

media. Consumers can access this information on the Web 24 hours a day, seven days a week.

## **GOALS FOR YOUR WEB SITE**

Before you can measure and then prove the value of your Web site, your business must agree on the goals for the site. It is crucial to the success of a measurement effort that everyone has an idea of the success yardstick. Are you providing users an interface to a service? Are you trying to sell products or services? Are you presenting information to an interested audience?

Modem Media, a leading interactive advertising agency, has compiled a list of top site objectives. These objectives include: public relations, database building, trial/traffic generation, usage stimulation, customer retention, switching competitive buyers, promotion, and internal business processes. Other possible Web site objectives include cost-efficient release of time sensitive materials, cost reduction in providing customer support, or test marketing new products or services.

An easy way to look at the overall goal of your Web site is to categorize it into one of three major types defined by Forrester Research. Promotional sites are aimed at marketing a brand and many include objectives listed above. Content sites, created to build audiences by providing news, weather, sports, or other information, are another type of Web site. Finally, transaction sites aimed at selling products directly are a fast growing type of Web site. To Forrester's list, I have added product support sites. These sites are highly visible in the computer hardware and software industries.

Let's look at some examples of these sites. Excellent examples of brand promotion sites can be seen at the Ragu (<http://www.eat.com>) and MasterCard (<http://www.mastercard.com>) sites. At each of these sites, involving and entertaining content surrounds the promotional message. Here the challenge is getting visitors to return regularly to be exposed to the commercial content. These sites generally are industry or subject related. They add content like humor, stories, free publications or files, and links to draw an audience. The site for my company, ASI Market Research (<http://www.asiresearch.com>), is a brand promotion site.

Content sites are varied in their approaches and intent. Some content sites are advertiser-supported like free TV. An excellent, highly visited example of this type of site is Time-Warner's Pathfinder (<http://www.pathfinder.com>). Web sites can offer content that is so specialized and valuable that visitors

pay a subscription fee to use the site. The Encyclopedia Britannica site is a successful example of this breed of site. Other Web sites are hybrids of advertiser-supported and subscription-based sites. The best known example of this kind of Web site is the ESPN Sportszone (<http://espnet.sportszone.com>). Today, a rapidly growing type of content site is an internal business Web site or Intranet.

Direct sales transactions are supported at many sites across the Internet. Only some products are appropriate for sales from a Web site – low cost products that are easy to understand and may be treated as commodities by consumers. Products that are being successfully sold on Web sites include computer software, flowers and gifts, and compact disks. An excellent direct sales site, CD-Now (<http://www.cdnw.com>), offers shoppers selections that they might not find in their neighborhood music store plus in-depth product information.

Spurred by an opportunity to save money compared to phone support, many product support Web sites have been introduced. Primarily operated by computer companies, these sites are culturally consistent with the marketers' core audience. The Web sites provide an opportunity for the companies to provide value-added service to their customers like file downloads and a depth of information that would not be practical in other media. The Hewlett-Packard support site (<http://support.mayfield.hp.com>) is one example of this type of site. An excellent non-computer product support is run by Federal Express (<http://www.fedex.com>).

Obviously, some sites are a mix of these types. For example, HP provides product support and promotes its brands through its Web presence. Sites can also mix direct sales and brand imagery goals. The Gartner Group's Web site (<http://www.gartner.com>) offers research reports and provides corporate marketing information.

Sites with mixed models are often managed by different groups in an organization with different objectives. Integration of content into a consistent look and feel yields a stronger marketing message. Keeping the same graphic elements, page structure, and content approach across varying areas is a challenge but a key point in providing value to your customers.

Some final thoughts about objectives for a Web site concern the population of the Web. Those of us in the information systems profession often fail to remember that the average citizen does not embrace technology at the speed that we do. Today, the Web is still highly skewed to highly educated,

male citizens of the U.S. While a Web site will obviously reach computer companies' target markets, the markets for mainstream products and services is only emerging. This can be seen in the slow adoption of the Web by major Fortune 500 consumer products companies. Each organization should conduct research to determine how to best reach their target customer base.

## **EVALUATING EFFECTIVENESS**

Once you have determined the goals for your Web site, you can begin the task of evaluating its effectiveness. Even if your site is selling products directly (which is a great measure of effectiveness) you can use these techniques to improve how people use your site and therefore increase sales. One of the first places to look is at your own server.

The foundation of the Web is Hypertext Transfer Protocol (HTTP). HTTP uses the client-server model to transfer data between Web servers and users' browsers. A client connects to the server, requests a file, gets a response, and disconnects. One request is serviced per connection. This is a simple and efficient way to handle communication.

A "hit" refers to each transfer of a file, whether that is the HTML code for a whole Web page or each of the 12 graphic files contained on the page. However, most Web pages are combinations of text and images, where each image is stored as a separate file. When a browser requests such a page, the request for each individual file is logged.

Begin an assessment of your Web site examining your Web server's log file. Most servers support the Common Log Format (CLF) and some have added their own proprietary extensions. The server log will contain at least the visitor's host name, the HTTP request to your server including the Universal Resource Locator (URL), the date and time of the request, and the number of bytes transferred.

While at first glance the server log may seem to be a gold mine of information, there are some problems with using the server log to evaluate Web site usage. Hits are not a very useful measure because they do not equal the number of users. Host names and IP addresses indicate the computer the user is on, not the link to your site. (Information about the visitor's previous location is available in a referrer log that is becoming commonly available on Web servers.)

These host names in your log are not even particularly useful in determining where users are logged on. The major online services strip individual identification so users from all over the U.S. for example appear from "aol.com". Proxy servers associated with a firewall may service thousands of users in many locations for one corporation. Again, these all appear to be from one location in your server log. Additionally, dynamic IP addressing used by some Internet service providers and large corporations, prevents consistent identification of users.

Log analysis is complicated by caching, both by servers and by Web browser software. Many proxy servers, again used by major online services, cache frequently requested documents to improve server performance. Most second-generation Web browsers also cache pages locally to reduce the number of requests to the Internet. Both techniques prevent the server log from fully documenting use of your Web content. One hint about caching is contained in your server logs. A listing of "304" in your log usually shows a file has already been served to the user and is cached. If you actively try to reduce your server load by reusing files instead of storing unique ones, you will find "304"s.

HTTP is often called a stateless protocol. Each transaction from the client to the server and vice versa is independent and carries no information about previous transactions. Thus, the server log does not directly show the path a visitor followed through your Web site. Also, statelessness prevents HTTP from providing actual time tracking for each page on a site.

Even with all of the caveats listed, analysis of your Web server log can be extremely valuable. The use of heuristics, that make a reasonable guess at the number of user sessions, provides actionable information. A heuristic might consider requests from the same host name within a short interval as being from a user moving around your site. When a request has not been received in some set amount of time, you can make the assumption that the users have left your site. Heuristics can also be designed to infer the length of time a user spent on a page from the length of time between HTTP requests.

One important technique to remember when using heuristic estimates of users is to remain consistent to one model. There is no right or wrong way to determine users but using the data for trend analysis is dependent on consistency.

Analysis of a Web server log using heuristics can yield results about the number of times each page was requested, the average time each page was looked at, and even the paths that users take through your site. There are many approaches that can be used to complete an analysis of your Web server log: DIY (do it yourself), on-site tools, or off-site tools.

## **TOOLS FOR ANALYSIS**

You can certainly try to analyze your Web log with software you already own or can download free. Excel and Access can be used to build rules and analyze patterns in your server log. There are many free tools on the web including wwwstat and gwstat. Try searching from your favorite search site on keywords “log analysis tools.” As with many things in life, you get what you pay for with these tools. Their utility is limited and does not contain the sophisticated new features found in commercial tools.

On-site log analysis software puts the Webmaster in control of Web analysis. An on-site solution provides a high level of interactivity. Reports can be customized to meet specific corporate needs. Many of these tools link reports or databases directly to common spreadsheet and database packages. While you must use your own computing resources, generally you can run as many reports as you want for the cost of the software.

Commercial log analysis tools are readily available today. The best known of these packages are Market Focus from Interse ([http:// www.interse.com](http://www.interse.com)), WebReporter from Open Market ([http:// www. openmarket.com/ products/ webreport.html](http://www.openmarket.com/products/webreport.html)), and net.analysis from net.Genesis ([http://www.netgen.com /products/net.Analysis](http://www.netgen.com/products/net.Analysis)). Two relatively new products are available, one from e.g. Software ([http:// www.egsoftware. com](http://www.egsoftware.com)) called Webtrends and WebSpy from Razorfish ([http:// www.razorfish. com](http://www.razorfish.com)). (For a look at the relative pros and cons of Web analysis tools, see the March 4, 1996 issue of *PC Week*.)

Log analysis can also be done off-site. In an off-site system, an independent third-party receives your server logs on a secure site and builds a database for you. This eliminates the need to keep months and months of historical data on your site. It also gives you platform independence since your log files are text files that can be sent to any off-site platform for processing.

Another service provided by third-party Web log analysis companies is auditing of your Web log statistics. This service is used by companies who gain significant advertising revenue from their sites. The audit, similar to audits done for newspaper and magazine publishers, helps Web site owners

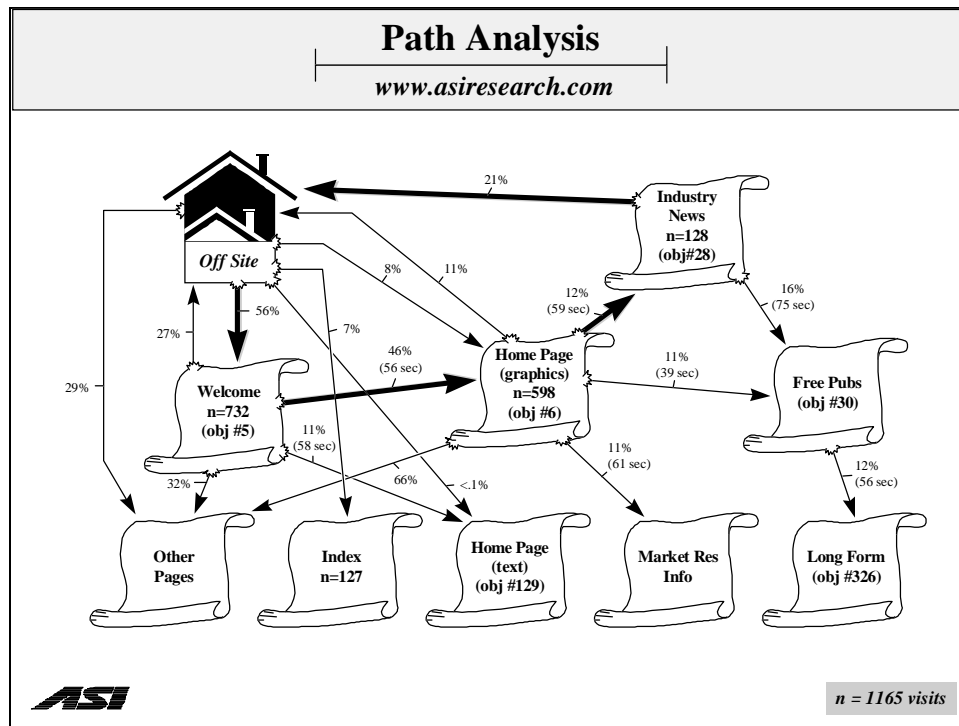
prove the size of the audience they are delivering. Buyers of advertising can then be confident in investing ad dollars on a Web site.

Off-site tools have a significant advantage over on-site tools when server log analysis is used as a basis for advertising rates. The Coalition for Advertising Supported Information and Entertainment (CASIE) is a joint project of the Association of National Advertisers and the American Association of Advertising Agencies with support from the Advertising Research Foundation. One project of the CASIE group is guiding the industry in creating standards for measuring interactive media. In a recent document, CASIE discusses third-party measurement and auditing as follows:

*“Third party audience estimates are the primary or exclusive audience data advertisers and their agencies use to evaluate all existing media. This type of measurement has developed as the best way of ensuring fairness and objectivity to both buyers and sellers.”*

Another advantage of off-site tools is that the companies providing the service are constantly advancing the science of Web log analysis. New heuristics are being developed. The analysis of the log can be in context with other sites. It is not enough to know how many people are using your site but that the usage compares favorably when compared with other Web sites. Finally, third-party analysis organizations are introducing new techniques to help you in understanding how to improve your site and help it meet your goals.

An example of one technique developed by ASI Market Research is Path Analysis. By looking at the Web log, ASI determines the percentage of people moving from page to page. Also, the Most Probable Path (MPP) is calculated to show the most common usage of the site. This tool gives our Webmaster a quick and easy way to see if visitors are interacting with the site in the way he intends.



In looking at the Path Analysis shown above, ASI's Webmaster immediately noticed that visitors were leaving the site and jumping past the home page from the welcome page. As you can see from the Path Analysis more than 25% of visitors were leaving the site from the welcome page. One goal of the site is for visitors to stay on the site and to be exposed to information about ASI's services. The welcome page was eliminated from the site and now a higher percentage of visitors is continuing to explore the site.

The Most Probable Path (MPP) is highlighted in the chart. This shows the most likely progression of visitors through the Web site. Based on this information, ASI's Webmaster recognized that industry information is a key component of the ASI site. He then contacted the marketing department for assistance in improving and expanding the content of the industry news page.

Off-site Web log analysis is provided by two leading companies. I/Pro (<http://www.ipro.com>) in conjunction with Nielsen Media Research offers I/Count and I/Audit. Off-site services are also provided by NetCount (<http://www.netcount.com>).

Let's look at an example of the kinds of information provided by a third-party Web analysis company. Below is a sample I/Count report from I/Pro.





**NIELSEN MEDIA RESEARCH**  
 299 Park Avenue  
 New York, New York 10171-0074  
 (212) 708-7600, FAX: (212) 708-7600  
 URL: <http://www.nielsenmedia.com>



**INTERNET PROFILES CORPORATION**  
 785 Market Street, 12th Floor  
 San Francisco, CA 94103  
 (415) 975-5800, FAX: (415) 975-5818  
 URL: <http://www.ipro.com>

## SAMPLE I/AUDIT™ STATEMENT

The purpose of this I/AUDIT report is to verify usage of a Web site and to state usage in audited terms. This information is to be used by Content Publishers, Advertisers, Media Buyers/Planners, and Web Developers.

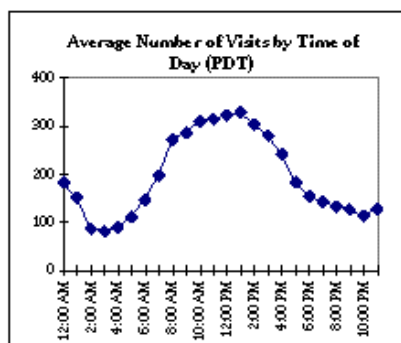
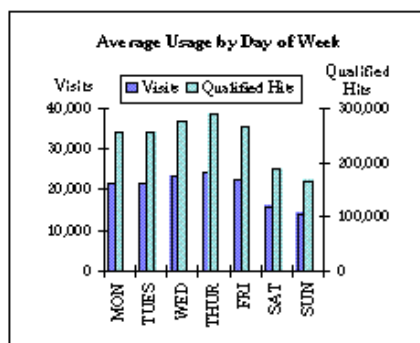
Completed October 1, 1996

Summary of Usage and Activity for September 1995:



**McNet**  
 200 Internet Avenue  
 San Francisco, CA 94103  
 (415) 555-2000  
 URL: <http://www.mcnet.com>

SUMMARY OF USAGE	September 1995
Total Visits* per Audit Period	141,869
Average Visits per Day	4,729
Total Hits per Audit Period	1,750,655
Total Qualified Hits per Audit Period	1,688,236
Average Qualified Hits per Day	55,275
Average Qualified Hits per Visit	11.90
Average Visit Length (minutes)	16:48



\* Refer to last page for definitions and explanations  
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 © 1995 Internet Profiles Corporation

The report includes the total number of visitors, statistics on usage by day of the week, and by time of day. Other pages in the standard report include information on the most accessed pages and a profile of visitors based on geographic representation and Internet domain hierarchy (e.g. com, mil, etc.).

Future developments in the analysis of visitor sessions should provide even more information. For example, the Netscape Navigator has a feature called cookies that can help software developers in tracking session usage. The server sends the Web browser a unique piece of information, the cookie, that the browser gives back to the server with subsequent requests. Thus, the server can “follow” a user through the site.

## MEASURING DEMOGRAPHICS

The demographics of your visitors are also a key to determining how to meet the goals for your Web site. Issues like what browsers and connection speed visitors are using is important in shaping the content of your site. Furthermore, direct surveys of your Web site users can provide insight into how much value visitors are receiving from the site.

The browser issue is a key one for a Webmaster. Since different browsers support different features, a Webmaster must be vigilant in understanding advancements in browsers and monitoring how his or her Web visitors are adopting browsers. Here are some statistics on browser usage adapted from the Interse site (<http://www.interse.com/webtrends>).

	Netscape 2.0	Netscape 1.0	Microsoft	AOL	CompuServe	All Other
Feb. 1996	46%	32%	6%	7%	5%	3%
Feb. 1995	0%	68%	0%	0%	6%	18%

Table does not add to 100% due to rounding

In just one year, the browser landscape has changed tremendously. Three significant new browser populations, Netscape 2.0, Microsoft’s Internet Explorer, and the America Online browser, have emerged. These changes are a challenge to a Webmaster to maintain state-of-the-art pages without leaving a significant portion of their audience behind.

Tracking browser usage on your Web site is a very straightforward proposition. Many Web server logs will capture this information. Standalone programs like BrowserCounter (<http://www.netimages.com/~snowhare/browsercounter.html>) use perl scripts to capture browser information. This information can be used to draw conclusions about your visitors because it is a census – you collect information about all of your visitors.

But, what about information about the speed of connection of your users? This data could be important in determine the extent of graphic or plug-in content that you want to develop for the site. There isn't any automated way to capture the information so you want to do a survey.

Unfortunately, surveying visitors to your Web site is not easy to do correctly. Putting up a survey page will not result in the collection of a statistically valid sample. Only some people will choose to do the survey. Do not base major decisions about your Web site on these surveys. Capturing e-mail addresses to send out surveys is another unscientific way to learn about visitors to your Web site. However, many browsers do not leave behind e-mail addresses and Web citizens are increasing putting phony e-mail addresses in their browser to avoid this kind of solicitation.

Due to the importance of understanding your visitors, use a professional market research company to help you survey your visitors. If you have a large audience, a survey of your visitors can be a cost-effective way of understanding usage of your site.

Recently, a new way to understand the demographics of site usage has become available. I/Pro now offers I/Code, a service that registers Web citizens demographics globally. Subscribers to the service receive detailed information about the demographics of visitors to their site and how those different demographics used the site. The Web citizen's individual identity is protected by I/Pro and not revealed to the Web sites.

## **PROVING THE VALUE**

Proving the value of your site involves more than just looking at the site itself. The Web site is only part of an integrated marketing program. Each part of the program affects and is affected by the other parts. Many companies are putting Web addresses in their television and print advertising. Some are even running ads just to get people to their sites. In turn, the sites are generating more awareness by customers so they notice a marketer's other advertising.

Measuring the payout of traditional marketing factors like television advertising and promotion requires considerable expertise and resources. But, when the complexities of a Web site are added to that mix, the analysis of the value of a Web site defines the leading edge of marketing research. Few organizations in the marketing research industry have the expertise and resources to look at Web sites as part of an integrated marketing effort.

In the end, evaluation of a Web site is not a goal, it is an on-going process. Continue to reassess the goals of your site and its effectiveness in meeting these goals. Attention to this effort will allow your organization to prove the value of the Web site and have it grow with your company for future endeavors.

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