

Evaluating a website based project

Quantitative and qualitative evaluation

Quantitative evaluation attempts to *measure* or obtain a quantitative fix on what is going on. It counts instances or frequencies of ratings and uses the numbers which emerge to provide a picture of what is happening.

Qualitative evaluation attempts to *describe* what is going on. The descriptions can consist of observations, transcripts of interviews, photographs, videotapes or other kinds of information which convey the quality of what is being evaluated.

Often quantitative evaluation is associated with the use of questionnaires, and qualitative evaluation with the use of interviews. However questionnaires can ask open-ended questions and collect qualitative data, and interviews can ask standard closed questions and count how often different responses are elicited.

Criteria for success

These are usually based round a number of areas, including:

- knowledge and understanding
- skills
- attitudes and values
- enjoyment
- inspiration and creativity
- activity
- behaviour
- progression
- social outcomes
- strategic outcomes
- technical/operational outcomes
- traffic
- content

Common online measurement tools

Hits – a visit to a single page will normally result in tens or hundreds of 'hits' on the server, as each image on the page is loaded as a separate request. Clearly counting these hits alone is not a good indication of usage, since the number of hits per page varies from page to page, and is really an arbitrary number more reflective of the complexity of individual pages on the website than the website's actual popularity.

Page impressions - are useful in determining usage, but alone they give no indication of how many people are using the site. A single page view may generate multiple hits as all the resources required to view the page (images, .js and .css files) are also requested from the web server.

Visits/visitors & Unique visits/visitors - Users are counted in terms of 'visits' - a single session on the site, and 'unique users' - the total number of individual users, regardless of the number of visits they make within a given period. A unique user

counts once within the timescale. A visitor can make multiple visits. Various means are used to calculate the number of visits and unique users, none of which are 100% accurate.

Grouping IP addresses - One of the methods used by log analysers to calculate visits and unique users is to analyse the 'IP address' of incoming requests. In theory this number is unique to an individual user, and so by grouping requests from the same IP address together, a 'session' can be identified.

The problem is that sometimes multiple users or entire organisations appear to share the same IP address, resulting in many users being considered as one. This is especially likely if your site is used by large institutions (such as schools).

Web-based log analysers do not suffer from this problem, relying instead on 'cookies' to track users uniquely. If in doubt, try to compare the two approaches.

Repeat Visitor - A visitor that has made at least one previous visit. The period between the last and current visit is called visitor recency and is measured in days.

Pages per visit - gives you an indication of how well people are exploring your site (although if too high it can point to an overly complex site structure).

Duration of site visit - average time spent on the site during each visit. Can also be misleading - e.g. a visit may be short because the content is quick and easy to find or may indicate that the website was not what the user expected so they have quickly exited. Conversely, longer visits may indicate that the site is rich in interesting content, or that your content is difficult to find so users are getting lost and spending more time on the site than necessary.

Most/least popular areas of the site - A glance at the most popular pages on your site can often be revealing, and it doesn't always correspond with expectations. Your usage statistics also record abuse by your users, attempts by hackers to break your website, and errors caused by missing links, broken pages or programming mistakes.

Bounce Rate / % Exit - The percentage of visits where the visitor enters and exits at the same page without visiting any other pages on the site in between.

Search terms used to reach the site - Log analysers are able to retrieve the keywords which users typed into search engines when trying to find your site, and by aggregating this information they can show the most commonly used (and hence most successful) search terms.

Search terms used within the site - again show the most commonly used and most successful search terms.

404 errors - indicate broken links that need fixing.

Site surveys - good for gathering feedback on your site, but the participants are self-selecting. Many users block pop-up windows. Talk to a techie about configuring the survey to stop people seeing the survey once they have completed it.

Feedback - usually technical, but may also want to encourage users to send feedback about what they like about the site, how they use it, etc

Merits of different web statistics packages

Firstly decide on the reports you want to create now and in the future.

For example, if you want to monitor the health of your website, can the package report on performance and technical aspects, errors, server loading and site usage? If you will be running pay-per-click campaigns, can it report on marketing aspects, where your traffic is coming from and the search terms used to find your site? If you are assessing what bandwidth package you should choose from a service provider, then bandwidth reports are essential. If you want to check that your code is not causing any problems can it create error reports?

Will you need to share these reports? Will you need to send them by email? Do you need to import things into another package? Would you like them produced automatically by your web server so that you can view them online?

Some packages can produce HTML, PDFs, Excel sheets, and Word documents, so knowing how you want to use the information is essential.

Some analysis programmes report on the actual raw information (eg what were the most requested pages), which is very useful for tracking usage of your website. Others aim to make inferences about your visitors (eg are they a returning user?); this usually ties in with marketing of the website.

Here's a quick overview of Analog, AWStats, ClickTracks, Google Analytics, Summary, Visitors, Webalizer and WebTrends7.

Analog - reports on everything you might want to know. It is released under the GPL (free) licence. It can be customised to include and exclude anything, and it can be run on multiple platforms. It has the ability to filter by IP address, define search engines, but it refuses to generate any inferred reports such as pathways and exit pages. Its configuration is straightforward. Analog's reports are slightly easier to share by email as they are all on one long page. It hasn't been updated since December 2004.

Accuracy - good

Cost - GPL (free)

Configuration - straightforward

Reports - readable

AWStats - matches Analog's vast array of reports and runs as a Perl script so is ideal to run on your web server allowing online access to the reports. It has an active developer network and is still being updated. AWStats has a hierarchical navigation tree to allow you to view its many different reports. It requires some technical skills to get up and running due to its fiddly set-up. Reports are well presented with excellent documentation. It is an ideal solution to provide online access to reports. Like Analog it is also released under the GPL free licence.

Accuracy - good

Cost - GPL (free)

Configuration - straightforward

Reports - readable

Click Tracks - is a commercial webstats package starting at around £250. It is aimed at helping you market your website and focuses on pay-per-click campaigns, especially which search engines are driving traffic to the site. It has a distinct visual style but lacks some of the essential reports (e.g. error reports, page impressions) to be of general use and keep track of your website's health.

Accuracy – no info

Cost - \$495(£265) - \$2995 (£1592)

Configuration – not required

Reports - very readable

Google Analytics - is similarly marketing-focused. While it's useful to track marketing activity and make decisions when running pay-per-click campaigns on Google Adwords, it lacks the depth and detail to provide general-purpose monitoring information. Google Analytics requires you to include a piece of JavaScript code at the foot of each page you want to track. You can then log into the Google Analytics website and view reports.

Accuracy is good.

Cost: basics are free - \$5 (£) for additional reports, and the software version starts at £525.

Configuration - requires code addition to web pages

Reports - very readable

Summary - has some great visual reports that aren't generally seen in any other package, making for a really useful guide to when and where users came from. Summary generates some interesting, unique and genuinely useful graphs. However, if Summary is not run on the web server then sharing the reports will be tricky, and with the source code unavailable, integration on a server may not be straightforward.

Accuracy is average

Cost - \$59 (£30) for reports on three domains

Configuration - straightforward

Reports - complex

Visitors - is a very basic command line tool, providing simple and quick analysis, but again it doesn't have the reports or features to make it of general or specialist use.

However, the generated report does give good information about how each report is created. It gives an overview of traffic and focuses on Google for a few reports. No ability to exclude or hide certain referrers, or IP ranges.

Accuracy - average

Cost - GPL (€8 for a win32 compiled version)

Configuration - very basic

Reports - readable

Webalizer - comes pre-installed by many hosting companies. It is a basic log analyser producing around 10 basic but very readable reports and some easy-to-digest graphs. Unfortunately it fails to report on in-depth information like errors and failed page requests, and so lacks the depth of reporting to make it noteworthy.

Accuracy - good

Cost - GPL (free)

Configuration - straightforward

Reports - very readable

WebTrends version 7 - is a commercial analysis program capable of creating all the reports you might need, with the ability to filter out information based on an extensive list of criteria. It has a simple graphical interface that allows you to configure the reports. It is capable of generating well laid-out reports in a range of formats but with a high price tag. However, it has a high price-tag compared to the other solutions, with really only Word export as its unique feature.

Accuracy - good

Cost - \$699 - \$9995

Configuration - straightforward

Reports - very readable

Recommendations

As with anything else, it really depends what you need to know and what functionality you need from these analysers. Four packages - Analog, AWStats, Summary and Webtrends - create a good range of reports. All things being equal, Webtrends might just swing the balance with its range of export formats and menu-driven set-up, but it is expensive and it

won't run on your web server so you will need to find a method to share the information across your organisation.

Summary produces some very individual and genuinely useful reports and is also reasonably priced. It is let down though by having a slightly awkward user interface, not enough of a problem to put you off if you want these reports but more complex than say AWStats. You need to navigate through a tree of links to find specific reports and once you've found the report you want, sharing it with others by email isn't simple.

Analog is good for producing individually customised reports for different projects and emailing them. However, if I were an organisation that wanted to monitor a single site and be able to share the reports online, I would opt for AWStats.

	Analog	AW Stats	Click Tracks	Google Analytics	Summary	Visitors	Weba-lizer	Web Trends
Reads your logfile reports	Y	Y	Y	N	Y	Y	Y	Y
Summary of figures	Y	Y	Y	N	Y	Y	Y	Y
Breakdown by month/year/day	Y	Y	Y	Y	Y	Y	Y	Y
Page views	Y	Y	Y	Y	Y	Y	Y	Y
Request report	Y	Y	Y	Y	Y	Y	Y	Y
Host report	Y	Y	N	N	Y	N	N	Y
Referrer report	Y	Y	Y	Y	Y	Y	Y	Y
Search engine report	Y	Y	Y	Y	Y	N	Y	Y
Error reports	Y	Y	N	N	Y	N	N	Y
Browser	Y	Y	N	Y	Y	N	Y	Y
OS	Y	Y	N	Y	Y	N	Y	Y
Filetype	Y	Y	N	N	Y	N	N	Y
Bandwidth	Y	Y	N	N	Y	N	N	Y
<i>Customisation</i>								
Exclude robots	Y	Y	N	N	Y	?	N	Y
Can exclude project IPs	Y	Y	N	N	Y	N	N	Y
Wizard configuration	N	N	Y	Y	Y	N	N	Y
Can be run with no set-up	N	N	Y	N	Y	N	N	Y
<i>Platform supported</i>								
Source code available	Y	Y	N	N	N	Y	Y	N
Mac	Y	Y	N	N	Y	Y	Y	N
Win	Y	Y	Y	Y	Y	Y	Y	Y
Linux/Unix	Y	Y	N	N	Y	Y	Y	N
Easy to run on own server	Y	Y	N	N	N	Y	Y	N
<i>Other features</i>								
Readable reports	Y	Y	Y	Y	Y	N	N	Y
Graphical reports	Y	Y	Y	Y	Y	N	Y	Y
Can share by email	Y	N	Y	N	N	Y	Y	Y
Word export	N	N	N	N	N	N	N	Y

Qualitative measurements of evaluation success

Positive external evaluation findings
Feedback from users (e.g. anecdotal evidence of use in the classroom)
People recommending the site to others
Peer accreditation
Award wins
Cost per user (for different types of user: easy to reach, hard to reach, primary/secondary audiences, active participant, passive user)

Moving Here (schools website)

www.movinghere.org.uk/schools/default.htm

For an example of an in-depth *qualitative* evaluation of a website for schools see:

<http://www.archimuse.com/mw2007/papers/arbach/arbach.html>

Extract:

User testing session for an on-line resource typically involves a user being observed (and possibly recorded) in a closed environment, guided by a tester through pre-set questions and assigned actions. The surroundings are not those in which users might normally use the Web site: this user is working alone. So what happens when a testing session is carried out in a classroom with a large number of people? Taking user testing into the user environment rather than bringing the user into closed surroundings allows spatial, emotional, and social issues to influence the way the Web site is used – and although the results may be more difficult to quantify, they may prove much more useful in our understanding of how the site will ultimately be used by its audiences. This paper examines user testing of on-line resources in a classroom setting, using as a case study the schools' e-learning resources developed for the Moving Here site (<http://www.movinghere.org.uk>). The Moving Here Schools evaluation programme involved teachers giving feedback about the site in various development stages and then participating with their students in a classroom testing stage. In classroom testing sessions, a team of evaluation consultants observed classes working through the site with their teacher and found that this type of testing was more effective in highlighting changes that should be made to the site. The paper will consider the expectations, challenges and opportunities associated with 'habitat testing' and suggest how museums can make this type of evaluation programme work in schools.