

# Reporting and Analysis

## Abstract

*Web analytics tools provide huge amounts of data, and the prospect of sorting through that data to determine what is useful and what is not can be daunting. This chapter of Using Web Analytics in the Library offers descriptions of different metrics and types of data, as well as guidelines for finding the data most important for a given situation.*

The literature suggests again and again that you choose a few key web analytics metrics, selected directly from your library's mission, goals, and objectives and the resulting key performance indicators to analyze your website's success. The vast amount of unused data in your analytics program may bother you because you feel it's wasted, but remember that if you are not using the data for actionable insights, it is actually worthless and literally wastes your time. Concentrate instead on as few as five key metrics that will align very specifically with your pre-defined goals and objectives. This chapter will review the process of selecting metrics and reports that are appropriate to your goals and help you measure your website's success.

Also, keep in mind, as you begin to scan for numbers, that the data from your Google Analytics (GA) program should be combined with other kinds of evaluative tools (surveys, requests for feedback, and formal usability studies) so that you can constantly be working to improve customer satisfaction. As you begin to review metrics and to think about reporting, keep that purpose firmly in mind; give your administrators information, not just data.

## General Overview of Metrics and Reporting Options

The amount of information you will begin to receive from GA can seem overwhelming at first. It helps to start with a basic understanding of some of the most used metrics and how they might help you. See chapter 2 for some definitions and descriptions; this chapter will focus specifically on how to use metrics to measure success.

## First-Level Metrics

In his book *Advanced Web Metrics with Google Analytics*, Brian Clifton identifies initial visitor data that will give you a baseline as you begin to understand your traffic, your users, and potential concerns. Looking at these numbers will start to show you how and by whom your library's website is being used. A hands-on review of these first-level metrics inside your own GA account will also provide you with an excellent introduction and practice for navigating the GA interface, and through this practice you will begin to discover the many options of the program.

Initial visitor metrics include the following:<sup>1</sup>

- How many daily visitors do you receive?
- What is your average conversion rate? (See chapter 3 for setting goals that produce conversion rates specific to your library.)
- Which of your pages are most visited?
- What is the average time on site, and how often do visitors come back?

- What is the average visit page depth (how many pages are being viewed within your site), and how does this differ by referrer?
- What is the geographic distribution of your visitors, and what languages do they use?
- How “sticky” are your pages? Do visitors stay on your site, or do they leave after viewing only one page?

As mentioned above, if you are new to GA, these questions can help you feel more comfortable with the interface and the metrics that will matter to you. As you begin to navigate through the screens, be aware that GA gives you many, many chances to drill down further with individual bits of data. Always look for the standard blue text signaling deeper links to more information about that topic or data. GA’s many opportunities for fine-tuned discoverability are a great strength of the program.

## Viewing Reports

A point of information as you begin to look at the GA screens is the program’s use of two key vocabulary terms: *dimensions* and *metrics*. As you will see as



**Figure 13**  
Google Analytics Dashboard.



**Figure 14**  
Advanced Segments selection on the Dashboard.

you begin to look at the reports, the *dimensions* in GA are the “text strings,” often words or parts of URLs, that identify and describe an item. The *metric* for each dimension is the corresponding count for that dimension. GA tables list the dimensions to the left and the metrics to the right. Also, the GA report screens include many embedded help notices, including *sparklines*, or small, dense pop-up explanations at different hotspots on the screen.

To view your reports, click the View Report link in the opening GA screen (see figure 6). This link is your basic overall access to GA reports, and it takes you to your Dashboard screen.

## Your Dashboard

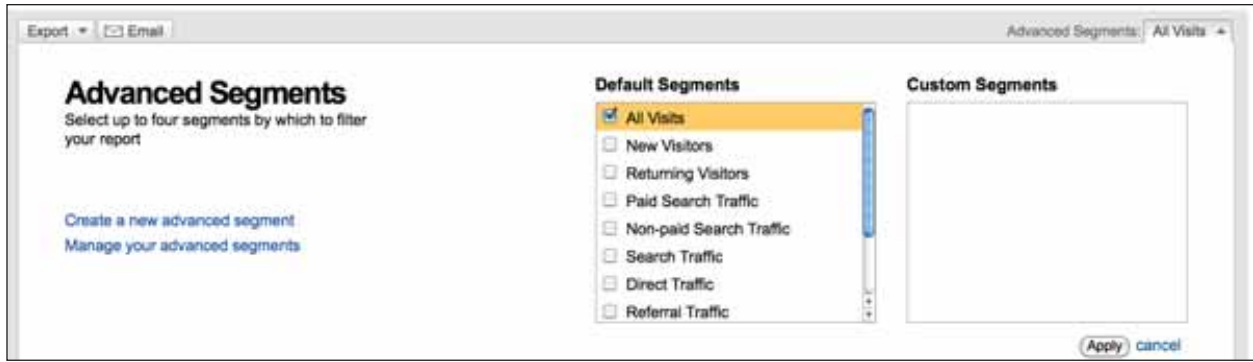
The Dashboard is the first section you see when viewing your reports. You will see various abridged reports as small images, brought together on one screen for an initial visual administrative overview. You can customize your Dashboard to your own specifications so that the reports that interest you are organized and accessible on your opening screen. Up to 12 reports can be removed, added, and reordered according to your desired layout. From the Dashboard, you can begin to click on individual reports, and then individual metrics, to access your data. As you drill down with mouse clicks, the left-hand text menu of the GA screen will also expand, and your breadcrumbs (upper left) will also reflect your path and current location in the site. While the menus are quite helpful as points of reference, GA is designed so that the drill-down feature is the recommended path toward viewing the metrics in context.

As each user can arrange the Dashboard to individual specifications, each one looks different. Figure 13 shows one example.

Working clockwise from the upper right-hand corner, you see an Advanced Segments option (figure 14).

You can choose to view All Visits, or click the triangle from that drop-down menu to get to the options shown in figure 15.

Back to the Dashboard, you next see the current date range. The default date range in GA is the last 30 days. However, there is a drop-down menu option where you can change that date range depending on



**Figure 15**  
Expanded Advanced Segments menu.



**Figure 16**  
Date View options.

the particular period you'd like to view (figure 16). You can select the monthly, weekly, or daily view; changing that option will also change your graph. When selecting date ranges, be savvy in your comparisons with previous periods. For example, April visits may reasonably be lower than May visits simply because April is one day shorter.

The date range you select can be a powerful way to track website usage in coordination with special events or activities in the library. For example, you may want to change to the weekly view to track usage leading up to and immediately following a major author visit, exam week activities, or library gaming night. Simply noticing that website usage went up is helpful to demonstrate the importance of the website as a component of your overall marketing and communication structure. But zeroing in on usage surrounding a specific event can help you learn even more about how your visitors might have been different during the week. For example, you can look at the geographic sources of visits during the week of the special event to see if you attracted a wider audience, and if so, where the new visitors came from. Can you look at bounce rates differently that week to see if perhaps people left your site without finding information about the event? As you become more familiar with the GA report screens, these are the kinds of clues you find

to help you discover more than just the popularity of your site.

Again back to the Dashboard screen, find the various metrics organized under the mid-screen graphic category Site Usage. There you will find quite a few of the standard metrics, such as overall number of visits, time on site, pages viewed (depth of visit), and percent new visits. (Again, percent new visits would be a good metric to watch in the days surrounding a special event.)

Beneath this section are the report snapshots you have selected for your basic view. Beneath this section are the report snapshots you have selected for your basic view. The Dashboard layout in figure 13 includes the Site Usage, Visitors Overview, and the Traffic Sources Overview. Moving back to the left-hand side of the screen, you find more of the basic menu items. Remember that each item in the basic menu can be expanded via mouse clicks, and the left menu items also expand automatically to reflect your drill-down mouse actions in the graphic views.

## Google Analytics Reports

The reports available through GA cover all the basic metrics mentioned throughout the previous chapters,

including total number of visits, unique or returning visitors, time on site, depth of visit, time on page, referrer, and bounce rate. In addition, GA offers some additional useful reports. Here are some examples, with the main menu item shown in parenthesis after the individual report item:

- Map Overlay (found under the Visitors menu).
- Languages (found under the Visitors menu).
- Visitor Trending and Visitor Loyalty (found under the Visitors menu).
- Mobile (found under the Visitors menu).
- Traffic sources overview, with its various options.
- Site Overlay, or In-Page Analytics (found under the Content menu).
- Segmentation View

### Map Overlay

The Map Overlay report is a great visual view of your visitors' geographic locations. You can easily see volume and quality (visit depth, etc.) of your visitors, and you can zoom to city level. There are a variety of uses for this tool for libraries, depending on your type of library and the different collections you are promoting through your online presence. Identifying your users and then drilling down to see what pages they viewed can be another way to understand whom you are serving and how you could better meet their information needs.

### Languages

The Languages report can be useful to libraries of all types, as we all find we are serving diverse populations both locally and beyond. Noting which geographic area our visitors come from is not enough to fully understand the first-choice languages of the people we are serving. Understanding their languages of choice can help in developing face-to-face programs and services, collection development, and staffing, not to mention providing appropriate language options within the website itself.

### Visitor Trending and Visitor Loyalty

Libraries tend to have a very loyal following of core users. In addition, we hope to be continually recruiting users to the digital branch. Using the Visitor Trending and Visitor Loyalty report can help you see where you stand with return and new visitors, and how those metrics shift in parallel with other events and trends at the library.

### Mobile

The Mobile report will show you which mobile devices and which mobile carriers visitors are using to access

your site. These numbers are growing dramatically and are predicted to continue to grow, and they can help you watch trends among your own users as you plan future site development.

### Traffic Sources Overview

The Traffic Sources Overview item expands to offer you an extensive list of reporting options. In addition to the Overview report, it includes information about direct traffic, referring sites, search engines, and keywords visitors used to find you. Knowing these keywords can be particularly helpful in understanding your users, although of course we don't know what keywords they used that did not result in a successful search. Qualitative metrics such as user studies would help here.

### Site Overlay or In-Page Analytics

The Site Overlay feature loads an actual page from your website and then adds a visual layer including key metrics for each link on that page. You will see small boxes superimposed on top of your webpage that indicate the number of clicks at that item. This can be an extremely beneficial visual snapshot of what's happening with your menu structure and with your visitors' overall behavior on that webpage.

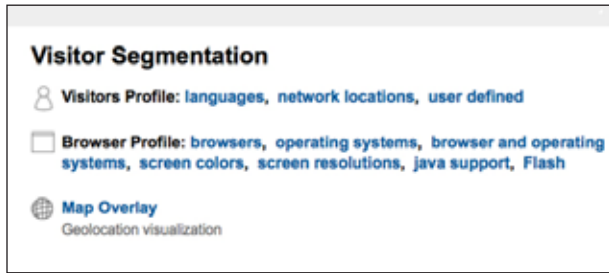
Many people find, however, that the Site Overlay feature is unreliable and full of bugs. The new In-Page Analytics, currently available in Beta, is seen as a preferable alternative.<sup>2</sup>

### Site Search

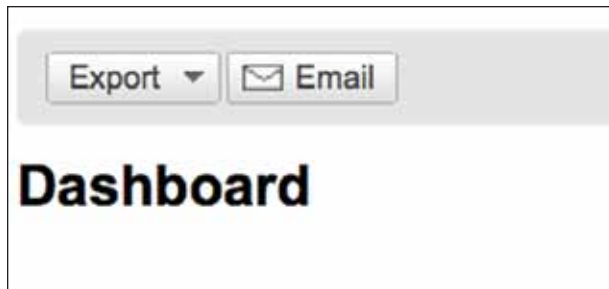
Site Search gathers metrics from your internal search engine, if you have one. Customers tend to rely more and more on this feature, and it's extremely beneficial to know the terms they use within the search box. Every time visitors type a term in your search box, they are telling you exactly what they expect to find on your site.<sup>3</sup> This information can be very useful for librarians, as we tend to be stuck in our own professional lingo and often don't realize that ours is not a language clearly understood by our users! And, in general, when we know what our customers are looking for, we can consider that a community wish list, and act accordingly.

### Segmentation

Advanced segmentation allows you to separate out a user group in GA to learn more about their website behavior. Figure 15 shows the built in segmentation options in GA. In addition, various spots within the program also offer segmentation options. See the Visitors item on the left-hand menu, and see how you can segment users from that screen (figure 17).



**Figure 17**  
Segmentation options from the Visitors menu.



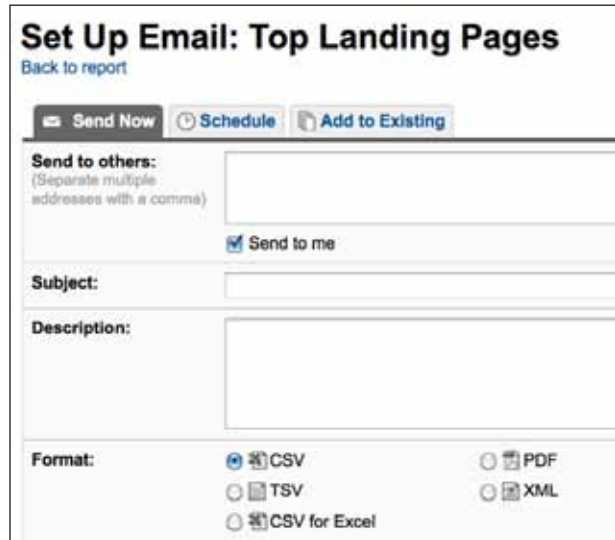
**Figure 18**  
Export and Email options from the Dashboard.

### Custom Reports

The Custom Reports feature creates your own report, depending precisely on the information you want to see, organized to your own specifications. GA provides a drag-and-drop feature to select the metrics and create multiple levels of subreports. The menu item for Custom Reports is on the left-hand side of the Dashboard, under the general menu.

### Google Analytics Intelligence Reports

Google Analytics Intelligence is currently a Beta service that monitors common metrics, looks for significant variations, and sends you automatic alerts as a result of those variations. Going beyond even the basic Custom Reports option, the Intelligence reports aim to alert you to things you would otherwise miss—the “unknown unknowns,” as Avinash Kaushik calls them. You can find the Intelligence menu item in the main left-hand Analytics menu section, and can use either automatic reports or custom reports. Many of these reports are associated with e-commerce, such as a custom Intelligence report that would watch for a revenue drop in a specific geographic area. But you may find uses for your specific library as you become more aware of your organization’s goals and how the website helps toward those objectives. For example, if you have just started a Twitter account or some other social networking service, Intelligence reports can tell you if there is a significant and unusual surge in usage you otherwise might miss.



**Figure 19**  
Setting up e-mail reports.

## Backing Up and Exporting Data

Google Analytics commits to storing data for up to 25 months, although so far Google has shown no evidence of removing data from accounts older than that. Nevertheless, you may choose to back up your data and also to manually export report data. You can modify your GATC so that the script simultaneously sends data to the GA servers and also to your own web server log files. For details about this process, see Brian Clifton’s excellent book, *Advanced Web Metrics Using Google Analytics*.<sup>4</sup>

To export copies of reports, choose either the Export or Email option in the left-hand corner of the center dashboard screen (figure 18).

You can e-mail reports in a variety of formats, including PDF, XML, and CSV. In addition, you can set up regular periodic e-mails of specific reports using the same buttons on the report screen (figure 19).

## Access to Reports

You can add users to your account in order to make GA reports accessible to others in your organization (figure 20). You can add users through the User Manager link, found in the center of your Analytics Settings screen. You may select View Reports Only as the access type.

You may also add additional administrators to your account from this screen. And, as noted above, you may set up automatic distribution of reports via e-mail to yourself and to others. It’s important to consider who among the members of your staff might benefit from seeing your analytics reports. Various department heads and managers who receive your website reports could



**Figure 20**  
Adding users to an account.

offer valuable insights. Consider making these conversations a regular feature in organizational meetings.

## Benchmarking

Through benchmarking, GA compares your data with website usage data from websites in similar markets. This process involves anonymously sharing aggregate data from other GA customers. You can opt in or opt out of the service at any time by editing your user profile, although when you opt in, the data stored in that period remains in the GA system. This feature allows you to put your metrics into broader perspective. All identifying information is removed from the data of organizations that choose to participate. Check this report once a quarter or once a year, simply to get some comparison data about your site.<sup>5</sup>

Benchmarking is found under the Visitors menu category, and will show as an option only if you choose to share your information anonymously. Find the data-sharing options under your account settings. Choose to benchmark by size and by industry category list. Find the options by following the menu path Visitors > Benchmarking > Open Category List.

## Data Visualization

Sharing your data in unexpected formats can create impacts beyond the typical printed report. Data visualization is one way to communicate your report results with greater impact. For example, consider the Keyword metric, where the GA program generates a list of keywords that visitors have used in search engines to find you. Rather than simply sharing that list, which people may or may not spend time analyzing, dump the words and numbers instead into an open source word cloud tool such as Wordle. In general, get to know a little more about the different rationales for using bar charts, pie charts, ad tables. Data visualization has been around for quite some time—consider mind maps and the classic work of Edward Tufte. However, it is being discussed as an important way to communicate

web metrics as well. Paul Signorelli reviewed the potential of this method of data sharing in the January 2011 ALA TechSource webinar on web analytics.<sup>6</sup>

Wordle  
<http://wordle.net>

## Conclusion

In general, look for trends, not single numbers. Start with a few metrics that relate directly to the goals for your library’s website, and build from there. Keep in mind that you are looking for *actionable insights*, and if the data does not help you to make decisions, it is virtually useless. Combine the information from these Google Analytics reports with insights you receive from qualitative sources, such as user studies, online surveys, and focus groups. Use the continuous improvement process of organizational goal setting, data collection, data analysis, action, and evaluation as a framework for web analytics.

The next section will describe some library case studies, where librarians’ use of Google Analytics has helped them gain insights into their websites and their users.

## Resources

Booth, Char and Paul Signorelli. “Library Analytics: Inspiring Positive Action through Web User Data.” ALA TechSource webinar, Jan. 20 and 27, 2011.

Clifton, Brian. *Advanced Web Metrics with Google Analytics*, 2nd ed. Indianapolis, IN: Wiley Publishing, 2010.

Instant Cognition. <http://blog.instantcognition.com>.

Kaushik, Avinash. “Beginner’s Guide to Web Data Analytics: Ten Steps to Love & Success.” Occam’s Razor. Nov. 15, 2010. [www.kaushik.net/avinash/2010/11/beginners-guide-web-data-analysis-ten-steps-tips-best-practices.html](http://www.kaushik.net/avinash/2010/11/beginners-guide-web-data-analysis-ten-steps-tips-best-practices.html). Accessed March 22, 2011.

## Notes

1. Brian Clifton, *Advanced Web Metrics with Google Analytics*, 2nd ed. (Indianapolis, IN: Wiley Publishing, 2010), 8.
2. Char Booth and Paul Signorelli, “Library Analytics: Inspiring Positive Action through Web User Data.” ALA TechSource webinar, Jan. 2011.
3. Clifton, *Advanced Web Metrics*, 122.
4. *Ibid.*, 139–141.
5. *Ibid.*, 108.
6. Char Booth and Paul Signorelli, “Library Analytics: Inspiring Positive Action through Web User Data,” ALA TechSource webinar, Jan. 20 and 17, 2011. See also Instant Cognition, <http://blog.instantcognition.com>, a blog about web analytics and data visualization, and Avinash Kaushik, “Beginner’s Guide to Web Data Analytics: Ten Steps to Love & Success,” *Occam’s Razor*, Nov. 15, 2010, [www.kaushik.net/avinash/2010/11/beginners-guide-web-data-analysis-ten-steps-tips-best-practices.html](http://www.kaushik.net/avinash/2010/11/beginners-guide-web-data-analysis-ten-steps-tips-best-practices.html) (accessed March 22, 2011).