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Web Analytics 2.0

THE ART OF ONLINE ACCOUNTABILITY
& SCIENCE OF CUSTOMER CENTRICITY

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The Awesome World of Clickstream Analysis: Metrics

New Web Analytics 2.0 mind-set: got it. New shiny set of tools: yep. Ready to jump in? You betcha!

It's time to start exploring the awesome world of Clickstream analysis with the building blocks of metrics and key performance indicators (KPIs).

I'll destroy some myths, take down (with love) some highly recommended but unactionable methodologies, and help you get better at diagnosing the causes of poor performance.

That means, with this chapter, you'll start honing your skills to become an analysis ninja!

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Chapter Contents

When people say "web analytics," they really mean web metrics. Your boss rarely asks for analysis; she asks for "data" (metrics) or "reports" (KPIs). You and I of course know better; we give her analysis only, and it's based on a tortuous examination of the metrics and KPIs. If you remember nothing else, remember this: life is about taking action, and if your work is not driving action, you need to stop and reboot.

We have made a ton of progress in the past few years. Through rose-colored glasses I recall how every webmaster was once ecstatic about simply reporting hits on their website. It took K.D. Paine (`www.measuresofsuccess.com`) to truly enlighten us about what *hits* represented: How Idiots Track Success. That is not meant to offend anyone. Rather, it's just meant to highlight that in 1992 perhaps hits meant something—that someone requested a page. Today, in a world where every home page sends 50 or 100 hits and rich experience dominates, hits mean nothing.

The next step in our evolution was *page views*. Since the early Web was dominated by ad-driven revenue models, we all started to obsess about page views. More page views meant more opportunities to annoy with a banner ad that featured a bouncing monkey. Page views are still a decent measure of success, but they are increasingly becoming useless—not just because of Ajax, Flash, and video-driven sites. Measured in aggregate, page views mean nothing.

We have been living in the era of *visits* for the past few years, or, as some tools call them, *visitors* (more on this later in the chapter). Visits have been the currency used to measure macro success. They do mean something: a person came to your site and consumed some content.

I believe we are now living through a transformative moment.

The Web is a serious business. Even really large content companies that have been living under rocks are realizing that they need to "go digital" in a big way. Because of all this pressure, we seem to be moving to using *outcome-based metrics* as a true measure of health and success.

Next time you see me, don't tell me how many visits your sites had; tell me the Conversion Rate metric if you do e-commerce, or tell me about the Revenue Trends metrics. If you are a content site, tell me how the Depth of Visit metrics look. If you are Facebook, don't tell me the number of profiles you have; rather, tell me about your Visitor Loyalty metric.

We've evolved from hits to page views to visits. Now, we have Outcomes.

Standard Metrics Revisited: Eight Critical Web Metrics

Now let's return to the basics, rethink our core beliefs, and move into the future. I'll discuss some of our bedrock web metrics, but in each case I will illustrate nuances and complexities behind the computation of these metrics and how they make our lives challenging. You'll certainly learn the definitions of these metrics, but my sincere hope is that you'll learn how to think in a more sophisticated manner.

Before we continue, here's a quick clarification: a *metric* is a quantitative measurement of statistics describing events or trends on a website. A *key performance indicator* (KPI) is a metric that helps you understand how you are doing against your objectives. That last word—objectives—is critical to something being called a KPI, which is also why KPIs tend to be unique to each company.

Visits and Visitors

Visits and Visitors form the bedrock of nearly every web metric calculation. You'll see them prominently displayed in your web analytics tool, but you'll also find them in your search reports, your exit pages, your bounce rate computation, your conversion rates, and so on. So, your Visits and Visitors are very important.

Figure 3.1 illustrates the problem: each tool seems to have its own sweet way of reporting these numbers. They also tend to compute those numbers differently. When StatCounter says Unique Visitors, it actually means Visits. When ClickTracks (a part of Lyrics HQ) says Visitors, it means Visits.

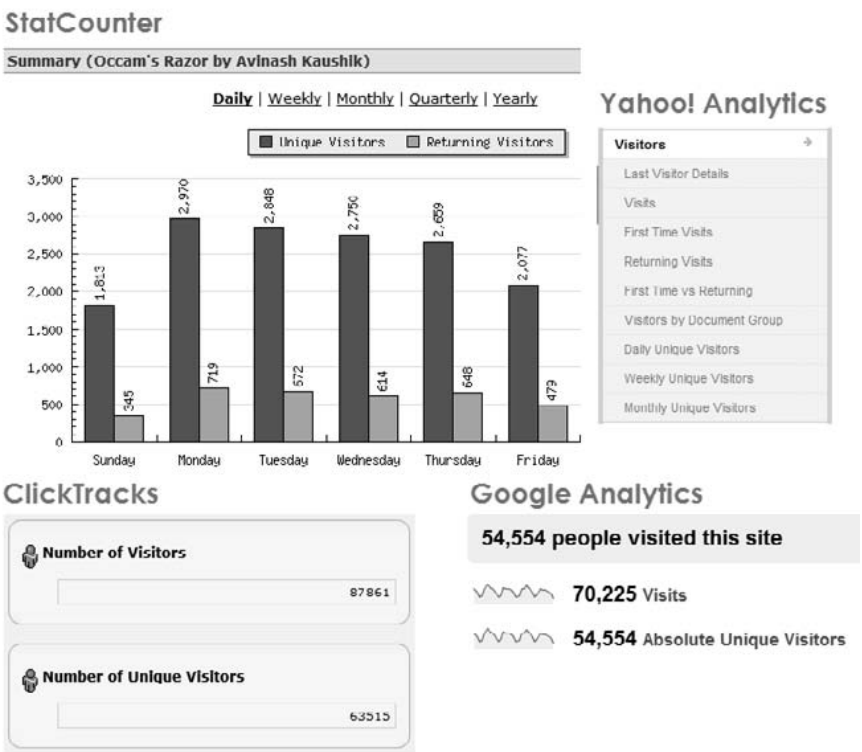


Figure 3.1 Visits, Visitors, Unique Visitors, and Absolute Uniques

So, here's lesson 1: as soon as you unwrap your shiny new analytics tool, spend five minutes identifying the details about these two important metrics the tool is reporting.

Although there is a lot of confusion about Visits and Visitors, at the end of the day each vendor is trying to measure the process of real people visiting your websites. And the vendors do that by measuring two important things: Visits and Unique Visitors.

Visits

Visits report the fact that someone came to your website and spent some time browsing before leaving. Technically this visitor experience is called a *session*.

Sessions are most commonly referred to as Visits (and perhaps only in ClickTracks now as Visitors). Sessions are usually a collection of *requests* from someone who is on your website. Here's how it works:

1. If you use a JavaScript tag solution, when someone requests the first page or item from your website, then your analytics tool starts a session for that person from that browser.
2. Each additional request from that person is attached to a unique session ID.
3. When the person leaves your site, that unique session ID is used to "stitch" together the pages viewed into one cohesive visit.
4. When you run a report for any given period in your web analytics tools, Total Visits is the *count of all the sessions during a given time period*.

In most modern web analytics tools, a session, or *visit*, is defined as lasting from the first request to the last request. If the person simply leaves the browser open and walks away, then the session is proactively terminated after 29 minutes of inactivity.

Please check with your web analytics vendor to learn what sessions are called in your tool. They could be masquerading as Visits, Visitors, Sessions, or some other label.

Unique Visitors

In computing Unique Visitors, the web analytics tool is trying to approximate the number of *people* who come to your website. Here's how it works:

1. If you use a JavaScript tag solution, when someone requests the first page or item from your website, your analytics tool will set a unique cookie on that person's browser.
2. This cookie remains on the browser even after the person leaves your website. It contains a unique anonymous string of numbers and characters. No personally identifiable (PII) information is included.
3. Each time someone visits your website from that browser, this persistent cookie ID is used to *recognize* that the same browser has returned.
4. When you run a report for any given time period in your web analytics tool, the Unique Visitors metric is the *count of all the persistent unique cookie IDs during a given time period*.

You should be aware of some important nuances and caveats when you look at the Unique Visitors metric. First, it is likely, but not always true, that each unique visitor is a unique person. Therefore, you must understand that although the Unique Visitors metric is a decent proxy for the number of unique individuals visiting your site, it is not a perfect measure.

Second, the Unique Visitors metric can be influenced by browsers that don't accept cookies or those that reject third-party cookies. Most modern analytics tools use first-party cookies that are rejected a lot less (the rejection rate is approximately 2 to 5 percent). Third-party cookies are rejected at a much higher rate (approximately 10 to 30 percent).

Even with the previous caveats, the Unique Visitors metric continues to be a superior approximation of the number of *people* visiting your website.

Compare it, for example, to the Visitors or People reported by panel-based systems, which use *monitoring software* to measure *people*. They usually use a small panel to mathematically approximate the *people* who visit your site (admittedly after applying complex algorithms). One commonly bandied-about company employs just 180,000 people who use the monitoring software to approximate the behavior of 200 million Americans who surf the Web. Quite suboptimal.

Perhaps in the future we will all have radio frequency ID chips in our bodies, and those chips will automatically alert a website that the same person is visiting (regardless of browser, PC, or mobile device). Until then let's not quibble; we'll use the Unique Visitors metric from our web analytics tool. It is useful, and it is actionable.

Next, let's really get *jiggy with it* and understand something complicated.

In many web analytics tools, you'll see Daily Unique Visitors, Weekly Unique Visitors, Monthly Unique Visitors, and, sometimes, Absolute Unique Visitors. Each metric gives you very different information, so let's examine this slightly yucky phenomenon using the data in Figure 3.2.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt
Month 1	Week 1	Day 2	Dennis	Matt	Dennis
Month 1	Week 1	Day 3	Matt	Matt	
Month 1	Week 2	Day 1	Matt	Ian	
Month 1	Week 2	Day 2	Ian	Jim	
Month 1	Week 3	Day 1	Jim	Avinash	Bryan
Month 2	Week 1	Day 1	Jim	Avinash	Bryan
			Angie	Jennifer	Michelle

Figure 3.2 Website's Unique Visitors data

Now let's measure the complex set of metrics that stares back at you when you crack open Omniture (or another like-minded tool). But before you do, realize that what you see will depend on the time period you select. Arrrgh!

As you examine all the different types of Unique Visitors in your tool, keep an eye on the metric called Absolute Unique Visitors. I'll use that metric as a proxy for how unique visitors should be computed correctly, regardless of the selected time period.

Month 1 and Week 1 for End of Day 1

To make matters simple, I excerpted just one time period in Figure 3.3.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt

Figure 3.3 Visits to the website on one day

In this example, if you run your reports at the end of day 1, your analytics tool will report the following details:

Daily Unique Visitors: 3

Weekly Unique Visitors: 3

Monthly Unique Visitors: 3

Absolute Unique Visitors: 3

That makes sense, right? Do a happy dance, high-five someone next to you—heck, give them a hug and a kiss (*only* if that is OK in your neck of the woods!).

Month 1 and Week 1 for End of Day 2

Now let's make our details a little more "complicated," as shown in Figure 3.4.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt
Month 1	Week 1	Day 2	Dennis	Matt	Dennis

Figure 3.4 Visits to the website on two consecutive days

If you run your reports at the end of day 2, you will see these details:

Daily Unique Visitors: 5

Weekly Unique Visitors: 3

Monthly Unique Visitors: 3

Absolute Unique Visitors: 3

Slow down the happy dance a bit.

Note the silly effect on Daily Unique Visitors, even though the same folks from day 1, Dennis and Matt, visited on day 2. They get *counted twice*.

Life lesson: Daily Unique Visitors is a useless number if you are looking at a period of more than one day!

Month 1 for End of Week 1

Let's keep going. Figure 3.5 shows the data for one complete week.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt
Month 1	Week 1	Day 2	Dennis	Matt	Dennis
Month 1	Week 1	Day 3	Matt	Matt	

Figure 3.5 Visits to a website during week 1

Crack open your analytics tool—it has been a long week—and look at the metrics; here's what you'll see:

Daily Unique Visitors: 6 (!)

Weekly Unique Visitors: 3

Monthly Unique Visitors: 3

Absolute Unique Visitors: 3

Note the continuing uselessness of the Daily Unique Visitors number.

Figure 3.6 shows the Daily Unique Visitors report from a web analytics tool and illustrates this point.

Day	Daily Unique Visitors	%
April 12, 2009 Sun	1,277	11.78%
April 13, 2009 Mon	1,812	16.72%
April 14, 2009 Tue	2,051	18.92%
April 15, 2009 Wed	1,710	15.78%
April 16, 2009 Thu	1,856	17.12%
April 17, 2009 Fri	1,436	13.25%
April 18, 2009 Sat	697	6.43%
Total	**10,839**	**100.00%**

Figure 3.6 Daily Unique Visitors report

By now you know why there is a frowning face in the Total row. Right? Repeat life lesson: Daily Unique Visitors is a useless number if you are looking at a period of more than one day!

Month 1 for End of Week 2

Let's solidify the lesson by stretching the time period a bit more, as in Figure 3.7.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt
Month 1	Week 1	Day 2	Dennis	Matt	Dennis
Month 1	Week 1	Day 3	Matt	Matt	
Month 1	Week 2	Day 1	Matt	Ian	
Month 1	Week 2	Day 2	Ian	Jim	

Figure 3.7 Unique Visitors data for two weeks

Gather everyone in close proximity into the office, form a circle, hold hands, and now open your analytics tool:

Daily Unique Visitors: 10 (!!)

Weekly Unique Visitors: 6 (!)

Monthly Unique Visitors: 5

Absolute Unique Visitors: 5

The Weekly number is wrong because it counts Avinash, Dennis, Matt, Matt again, Ian, and Jim. It counts Matt again because he visited during both weekly time periods.

Life lesson: the Weekly Unique Visitors metric is useless if you look across multiple weeks. I covered earlier why Daily Unique Visitors is, to put it mildly, suboptimal.

OK, only two more scenarios left. Hang in there; it gets better.

End of Month 1, for the Whole Month

Figure 3.8 illustrates the data set that we'll consider now.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt
Month 1	Week 1	Day 2	Dennis	Matt	Dennis
Month 1	Week 1	Day 3	Matt	Matt	
Month 1	Week 2	Day 1	Matt	Ian	
Month 1	Week 2	Day 2	Ian	Jim	
Month 1	Week 3	Day 1	Jim	Avinash	Bryan

Figure 3.8 One month's website visitors data

By now I am sure you are 100 percent up to speed on what you will see.

Daily Unique Visitors: 13 (!!!)

Weekly Unique Visitors: 9 (!!)

Monthly Unique Visitors: 6

Absolute Unique Visitors: 6

The tool has now triple- or double-counted both the Daily Unique Visitors and Weekly Unique Visitors.

Life lesson: both Daily Unique Visitors and Weekly Unique Visitors numbers are useless when you look at a period of a month.

Let's look at one last scenario, not to make your brain hurt but rather to ensure you reach the state of maximum analysis ninja enlightenment!

End of Month 2, for the Two Months

After all these dissections, Figure 3.9 takes us full circle back to the start of our journey.

			Site Visits By. . .		
Month 1	Week 1	Day 1	Avinash	Dennis	Matt
Month 1	Week 1	Day 2	Dennis	Matt	Dennis
Month 1	Week 1	Day 3	Matt	Matt	
Month 1	Week 2	Day 1	Matt	Ian	
Month 1	Week 2	Day 2	Ian	Jim	
Month 1	Week 3	Day 1	Jim	Avinash	Bryan
Month 2	Week 1	Day 1	Jim	Avinash	Bryan
			Angie	Jennifer	Michelle

Figure 3.9 Website's Unique Visitors data

You're probably tingling with excitement; here's what you'll see:

Daily Unique Visitors: 19 (gasping for air!)

Weekly Unique Visitors: 15 (oh my!)

Monthly Unique Visitors: 12 (!)

Absolute Unique Visitors: 9

The tool has now triple- or double-counted everywhere, with the Daily Unique Visitors, Weekly Unique Visitors, and Monthly Unique Visitors numbers.

The correct measure of *unique* is the Absolute Unique Visitors metric because it de-dupes the unique visitors across the entire time period.

Life lesson: both Daily Unique Visitors and Weekly Unique Visitors numbers are totally useless when you look across months. Use Monthly Unique Visitors with caution, knowing it merely de-dupes and then sums up the number for each month.

If your tool provides Absolute Unique Visitors, you are in luck because then you get true unique visitors across whatever arbitrary time period you choose. The bottom line is there are only two visitor metrics in web analytics: Visits and Absolute Unique Visitors (see Figure 3.10).

Figure 3.10 Visit metrics from Google Analytics

Do not get sucked into spurious versions of these two simple visit metrics. I am sure you are asking yourself, why do web analytics vendors put us through this torture? Simple: Computing power (or, really, the cost, for them).

The task of calculating your true real Unique Visitors number across an arbitrary time period or across multiple weeks or months is computationally intensive. That means more processing time and higher costs for the vendor. So, doing daily, weekly, and monthly counts (and then summing them up) is cheaper for them.

Google Analytics, XiTi, and Nedstat are amongst the rare vendors that provide the truly de-duped Absolute Unique Visitors metric by default, that is, at no additional cost to you.

Now, dear reader, you have truly achieved a higher level of analysis ninja proficiency! Above all else my fondest hope is that this section teaches you how to think critically about website metrics and that you should probe below the surface and ensure the metrics pass the basic sniff test. You should apply this critical thinking to all metrics you encounter.

Time on Page and Time on Site

After Visits and Visitors, perhaps the next foundational metric in web analytics is Time. It measures the time that visitors spend on an individual page and the time spent on the site during a visit (session).

Few people actually understand how time on a page or on the site is actually measured. As with most web analytics concepts, Time is more complex than you might realize. But the brave never fear silly things like complexity. We embrace complexity, and we conquer it!

To understand time, we will use a simple scenario, illustrated in Figure 3.11.

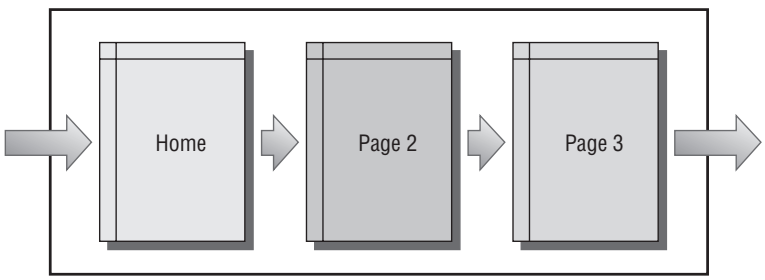


Figure 3.11 A representative visitor session on your website

Someone surfs over to your website and requests your home page, which starts a visit (session) on your website. The visitor then requests two more pages from your site before deciding to leave your website.

Figure 3.12 illustrates the metrics we want to compute for this visit:

Time on Page (T^p) represents the time spent on each page.

Time on Site (T^s) represents the time spent during that session on the website.

Let's walk through the process of computing each of these metrics. Figure 3.13 shows the time when the first request for the home page comes in.

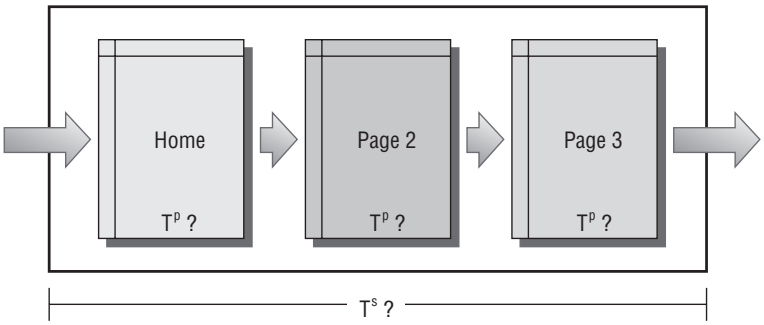


Figure 3.12 Time on Page and Time on Site

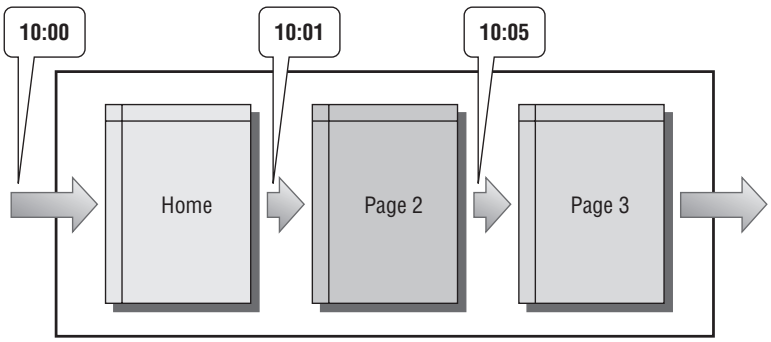


Figure 3.13 Home page requested at 10:00

There is an entry in your log file (weblog or JavaScript tag—it does not matter) that would read, "Someone has requested the website home page file at 10:00."

Technically, the message actually looks something like this:

```
111.111.111.111 - - [08/Oct/2009:10:00:00 -0400] "GET / index.html HTTP/1.1
200 10801 "http://www.google.com/search?q=avinash+kaushik&ie=utf-8&oe=utf-8
&aq=t&rls=org.mozilla:en-US:official&client=firefox-a" "Mozilla/5.0 (Windows; U;
Windows NT 5.2; en-US; rv:1.8.1.7) Gecko/20070914 Firefox/2.0.0.7
```

Notice the time stamp there? So far, all your analytics program knows is when a page was requested, which is why we have this:

T^p = N/A (not available)

T^s = N/A

Next, more fun happens on your site: someone clicks a link to page 2 from your home page, as shown in Figure 3.14.

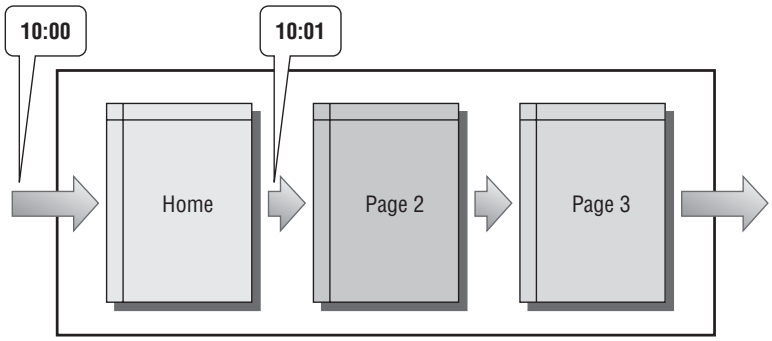


Figure 3.14 Computing Time on Page for the home page

Now there is a new entry in your log file that essentially reads, "The same visitor requested page 2 at 10:01." Now your web analytics program can compute some time metrics! The program knows how long the visitor spent on the home page. It subtracts 10:01 from 10:00 and gets one minute. Hence:

T^p (home page) = one minute

Notice that the only way the analytics tool knows how long someone spent on one page is by looking at the two time stamps: one from the request for the first page and one from the request for the second page.

Next, the blinking "get a $200 rebate on a $210 product" link on page 2 entices the person to click to page 3 to buy the product (see Figure 3.15). More sweet success!

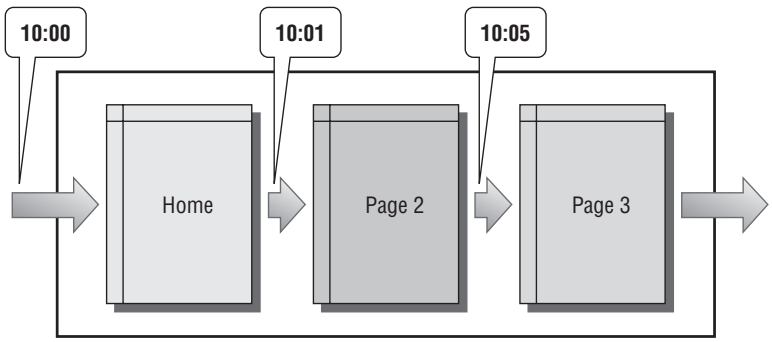


Figure 3.15 Time on Page for product page

The magical math outlined earlier happens (10:05 minus 10:01), and for page 2 here's the result:

T^p (page 2) = four minutes

The visitor reaches page 3 and notices that the rebate offer applies only to people who live in Antarctica! The visitor exits on page 3 (see Figure 3.16).

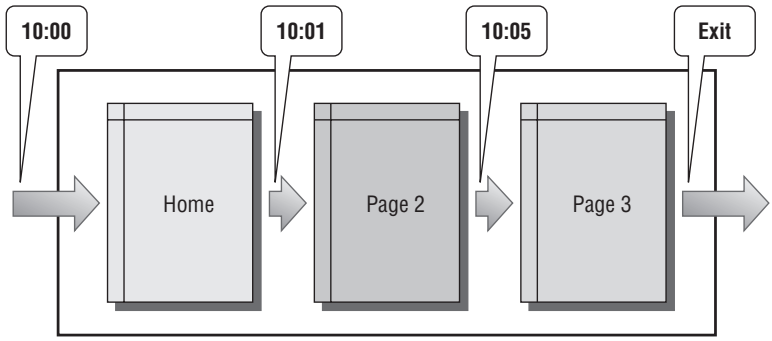


Figure 3.16 Complete visitor session

How long did it take to find and read the rebate fine print? You could reasonably guess if you knew how long the visitor spent on page 3. The problem is that your log file is missing one time stamp to do the magic math.

T^p (page 3) = The time of the page request (10:05) minus the time of next page request (N/A)

Hence:

T^p (page 3) = zero minutes

The analytics tool has no idea how long the visitor spent on the last page on your site. This flaw is true for nearly all web analytics programs in terms of default behavior.

Let's summarize the metrics using Figure 3.17.

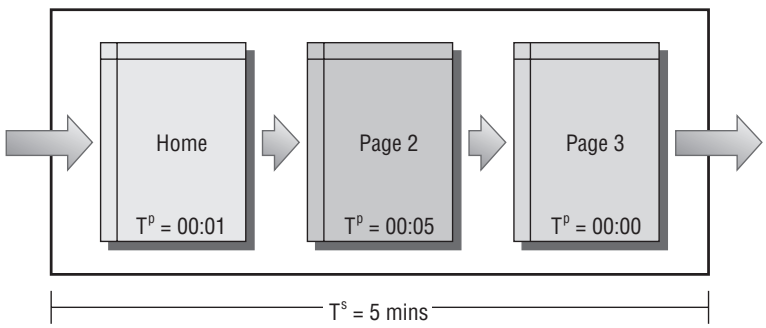


Figure 3.17 Computing Time on Page for each page and Total Time on Site

T^p (home page) = one minute

T^p (page 2) = four minutes

T^p (page 3) = zero minutes

T^s = five minutes (Time on Site, also known as Session Length)

Now that we have Time under our belts, let's consider two special cases so the lesson truly sinks in.

Lesson 1: The Single-Page View Session

Figure 3.18 illustrates a visit to your website that had only one page view, and then the person left your website.

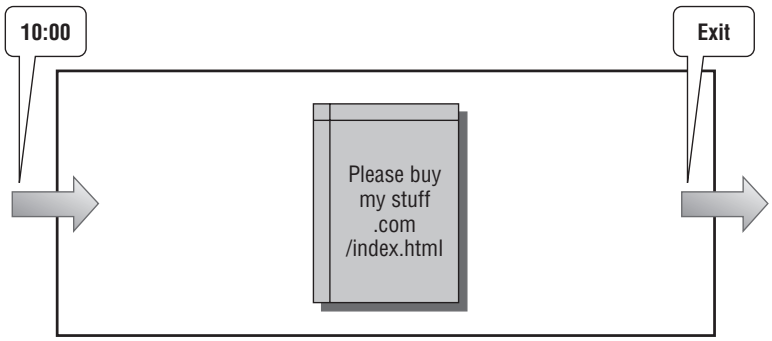


Figure 3.18 Single-page view website session

The challenge in computing Time metrics for this session is that the required second time stamp is missing. The analytics tool records when the page was requested (10:00), but it does not know when the exit happens.

Figure 3.19 shows the information computed in this case by your analytics tool.

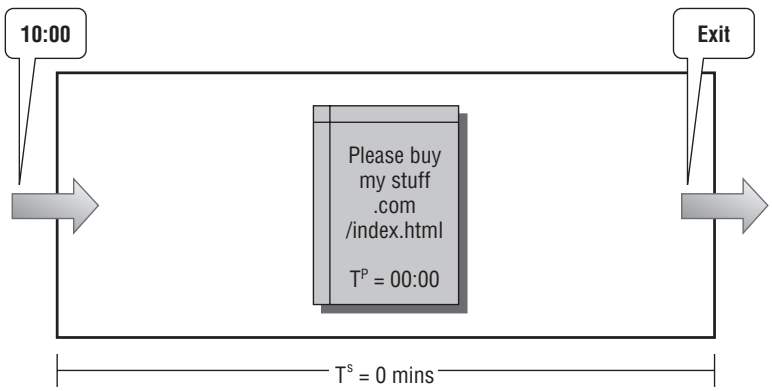


Figure 3.19 "Missing" Time on Site and Time on Page calculations

T^P = zero minutes

T^S = zero minutes

Be aware of this important fact as you report your analytics data.

Here's a slightly different scenario where the outcome is the same as earlier. The visitor came at 10:00 but leaves the browser open when they rush away as the visitor's spouse yells at them to do the dishes. Cleaning the dishes takes an hour. In the analytics

tool, the session is terminated at the end of 29 minutes of inactivity (the default setting in most session-based web analytics tools). The metrics for that session will be as follows:

T^p = 0 minutes

T^s = 0 minutes

Options for Computing Time on Last Page

There is an exception to this "missing time on last page" rule: some hacks are available that allow you to compute the time on the last page (or the only page). One such hack involves adding extra code to your pages that would capture the fact that the page was "unloaded" (technically, the `onbeforeunload` event) in the browser. The `onbeforeunload` event provides the missing time stamp.

Even if you force a time for the page exit, your analytics tool will ignore this data unless you specifically ask your vendor to make an exception and redo their algorithms to take the data into account. If you parse your own web logs, then it may be a bit easier to accommodate this new piece of data into your calculations. Ditto if you use your own data warehouse.

Lesson 2: The Case of Tabbed Browsing

Nearly all browsers now allow you to open different tabs for links on a site. This creates an interesting scenario from a measurement perspective. Figure 3.20 illustrates the scenario.

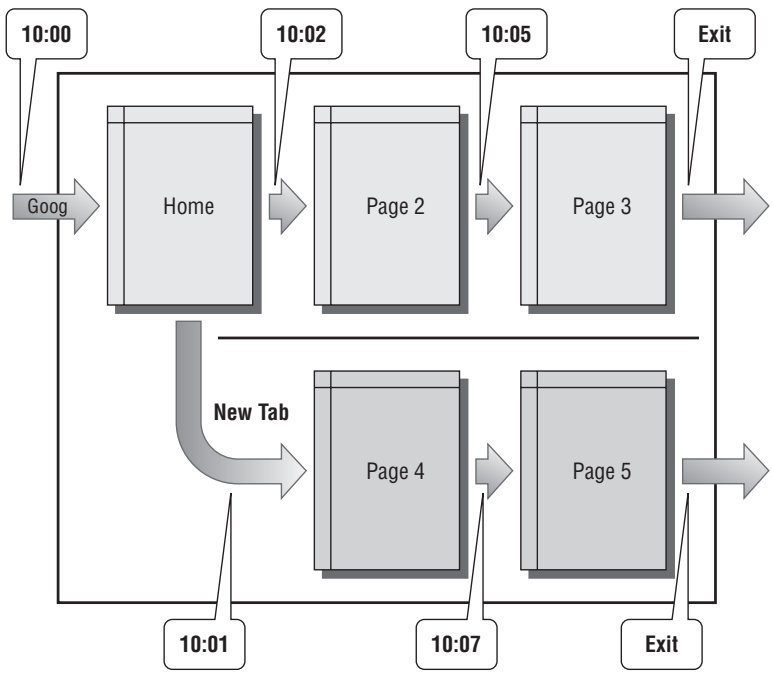


Figure 3.20 Website visit with tabbed browsing

A visitor comes to your home page. From there your visitor opens the first link in a new tab but continues to scan the home page. He clicks a link to page 2 from the home page, then on to page 3, and then closes the tab (or moves away and forgets about it).

The visitor goes to the tab opened from the home page to page 4 of your site, spends time there, and goes on to page 5 in that tab. Then the visitor exits. How is time on site computed?

Some, increasingly rare, analytics tools will simply create two sessions for this visitor and measure time separately for both sessions using the method that you have learned in this chapter so far.

Most web analytics tools will collect all the requests during this session and *normalize* the tabbed browsing behavior. Figure 3.21 shows how the *normalization* happens.

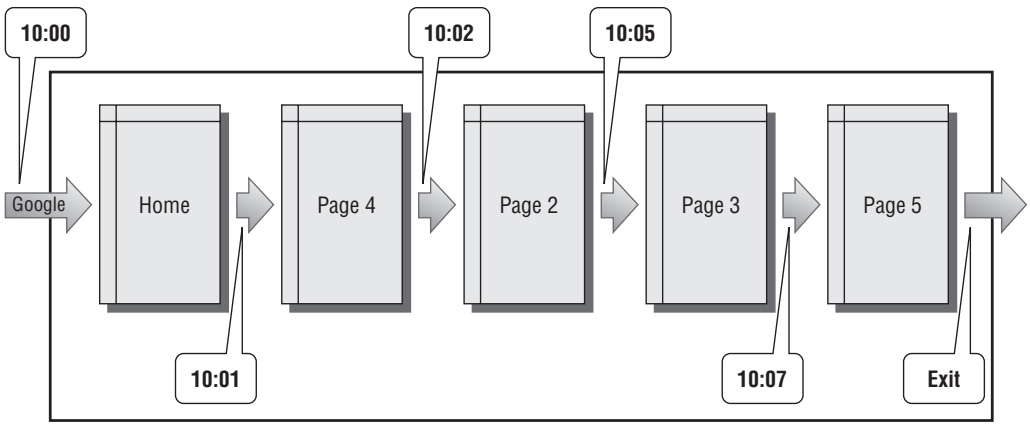


Figure 3.21 Normalizing the tabbed browsing experience

Now that everything is fine and dandy for the tool, it can easily compute the two metrics:

T^p (home page) = one minute

T^p (page 4) = one minute

T^p (page 2) = three minutes

T^p (page 3) = two minutes

T^p (page 5) = zero minutes

T^s (session duration) = seven minutes

That's it. Sure, it is a bit complex, but see how utterly logical it is?

None of the previous information should imply, overtly or covertly, that Time on Site is not a good metric. Far from it. For many businesses it can be a critical metric. Once you understand exactly how time is computed, you can make more informed

decisions. In many cases, Time on Site can be a better metric than even Unique Visitors.

Bounce Rate

I have been known to call Bounce Rate the sexiest web metric ever! I am fond of measuring Bounce Rate for several reasons:

- It is a metric that is available as a standard metric in pretty much all tools. (In cases like Omniture, where it is not, you can still easily compute it.)
- It is really hard to misunderstand what Bounce Rate measures.
- It is actionable on multiple levels, especially at identifying the low-hanging "fix me now" fruit.
- It measures customer behavior, perhaps the most holy of the holy goals in measurement.

So, what does this mysterious, smoldering, sexy metric measure? From a website visitor perspective, it measures this phenomenon: "I came, I puked, I left." OK, the following is the technical definition: the percentage of sessions on your website with only one page view.

A few tools in the market allow you to use Time to measure Bounce Rate. That is, they measure the percentage of sessions where Time on Site was less than five seconds. It is increasingly rare to see this method of computation (which does make me a bit sad because I like this more aggressive definition).

Figure 3.22 shows how Bounce Rate might look in your analytics tool, in this case in the French tool XiTi.

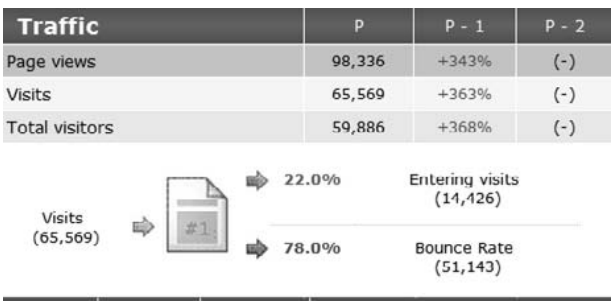


Figure 3.22 Bounce Rate in XiTi

On the left are all the people who visited the website during this time period, 65,569. To the right of that, the number on the top represents those who chose to click any link on the landing page and see more than one page (22%). On the bottom is the big cry-inducing number: 78 percent of the people who came to this site refused to give the website one pathetic click.

Think about it. Not even one tiny click! It is the lowest bar of success: all you want from the visitor in terms of Engagement is one click, and you failed.

That is the beauty of Bounce Rate. At a macro level, it shows how much you stink. It doesn't matter who you are; you could be a B2B website, an e-commerce website, or a site with pictures of monkeys dressed as office workers.

So, you need to measure the Bounce Rate of your site on at least two levels. You need to measure in aggregate at an entire site level, as shown in Figure 3.22. And you need to measure the Bounce Rate of your top landing pages (also called the Top Entry Pages report), as shown in Figure 3.23.

Entry Page Title	Visits	%	Bounce rate
Web Analytics Blog | Occams Razor by Avinash Kaushik	69	21.84%	68.12%
Standard Metrics Revisited: Dail... Occams Razor by Avinash Kaushik	21	6.65%	66.67%
Googles Search-based Keyword Too... Occams Razor by Avinash Kaushik	14	4.43%	85.71%
Excellent Analytics Tip#2: Segme... Occams Razor by Avinash Kaushik	11	3.48%	81.82%
40 - The Best Online Survey For ... Occams Razor by Avinash Kaushik	8	2.53%	87.50%
The Three Greatest Survey Questi... Occams Razor by Avinash Kaushik	8	2.53%	75.00%
Google Analytics Releases Advanc... Occams Razor by Avinash Kaushik	7	2.22%	85.71%
10 Insights From 11 Months Of Wo... Occams Razor by Avinash Kaushik	6	1.90%	100.00%
Blog Metrics: Six Recommendation... Occams Razor by Avinash Kaushik	5	1.58%	80.00%
Excellent Analytics Tip #8: Meas... Occams Razor by Avinash Kaushik	4	1.27%	100.00%
Subtotal	**153**	**48.42%**	**75.16%**
Total	**316**	**100.00%**	**75.95%**

« PREVIOUS 10 NEXT 10 »

Figure 3.23 Top Entry Pages report, Yahoo! Web Analytics

You want to take quick action based on your web analytics data? In 10 seconds this lovely report will help you identify the pages that are not doing their job by bouncing traffic like crazy.

The Bounce Rate metric also produces a lovely report because the world is dominated by search engines, and those search engines, not you, determine the home page of your website. In Figure 3.23, you see the top 10 home pages of your website. Fix 'em, and you'll have a colossal impact on your profitability.

Here are additional tips for actionability:

- Measure Bounce Rate for your website's top referrers. Your top referrers tell you who your true BFFs are. These are not the referring sites that just send you traffic but rather sites that send you traffic that does not bounce.
- Measure Bounce Rate for your search keywords (paid and organic). Perhaps you are optimized for the wrong keywords, or perhaps your landing pages stink; either way, you need to fix them.

See what I mean when I say that Bounce Rate is a hugely actionable metric?

Exceptions and Excuses for Bounce Rate

Exception

There is one obvious case where measuring the Bounce Rate metric in aggregate might be suboptimal: blogs.

Blogs are a unique beast amongst online experiences: people mostly come only to read your latest post. They'll read it, and then they'll leave. Your bounce rates will be high because of how that metric is computed, and in this scenario that is OK.

So, don't measure the Bounce Rate for a blog in aggregate. Segment your data, and measure Bounce Rate for your New Visitors. You don't want them to just come and leave after reading the post. You want them to subscribe to your RSS feed. (That's one click! No bounce!) You want them to read your About page (and be impressed with your magnificence and come to the site again). You want them to click ads (heavens!), and so on. All these actions are of business value to you.

Excuse

I have to admit, I get a bit miffed when I hear an excuse that goes something like this: "I don't have an ecommerce site. I don't have conversions. I don't have to worry about Bounce Rates." What?

I have a hard time imagining that any for-profit business exists where zero clicks from a visitor on its site is a success. Say I have, as an example, a dictionary website. I want people to see the definition and maybe also bookmark my page for future use (boom, no bounce) or check other definitions (and click ads and give me revenue). Another example is Yellow Pages websites. They exist to "bounce" you, or get you out to another site, namely, a site of their advertiser. Well, in that case, remember that Bounce Rate is one click, so you measure those people who come to your site and don't click an advertiser listing and leave your site (bad for you).

Bounce Rate equates to people taking absolutely no action on your site. If you make an "excuse," I'll push back because I don't fundamentally believe for any site—for-profit or nonprofit—that success is a one-page view. There are rare exceptions, as with blogs earlier, but think really hard before believing you are the exception. I'll cover more about measuring blogs and social media in Chapter 9.

Exit Rate

In discussing the Exit Rate metric, I want to accomplish two things: (a) question some conventional wisdom and (b) illustrate how a seemingly helpful metric can actually be completely unproductive.

Exit Rate metrics are all the rage. What Exit Rate measures is simple: how many people left your website from a certain page. Check out Figure 3.24.

Content Performance

Pageviews	Unique Pageviews	Avg. Time on Page	Bounce Rate	% Exit
463,841 % of Site Total: 100.00%	363,033 % of Site Total: 100.00%	00:01:28 Site Avg: 00:01:28 (0.00%)	51.86% Site Avg: 51.86% (0.00%)	29.42% Site Avg: 29.42% (0.00%)

	Page None	Pageviews	Individual Page performance: % Exit
1.	/if/idealist/es/AdvancedSearch/Jol	40,027	19.30%
2.	/if/idealist/es/SiteIndex/AssetSear	36,677	61.27%
3.	/if/idealist/es/SiteIndex/AssetSear	34,436	61.97%
4.	/if/idealist/es/Home/default	24,870	21.91%
5.	/if/idealist/es/AdvancedSearch/Vo	12,661	13.24%
6.	/if/idealist/es/ControlPanel/MainPag	11,570	10.99%
7.	/if/idealist/ca/Myldealist/Login/login	7,168	11.23%
8.	/if/idealist/es/SiteIndex/Search/sea	7,077	36.07%
9.	/if/idealist/es/SiteIndex/AssetSear	5,482	37.18%
10.	/if/idealist/es/Myldealist/Register/0-	4,837	17.49%

Figure 3.24 Exit Rate (% Exit) for website pages

On paper, this metric is supposed to show the *leakage* from your website. In other words, where do people exit after they start their session? It should illustrate pages that you should *fix* to prevent leakage and get customers to buy more or sign up more.

The problem is that everyone who comes to your website has to leave. They will browse around your website and leave from any arbitrary page. Their exit from a page is no indication of the greatness, or lack thereof, of that particular page!

Maybe they entered the site, completed a task (say, making a purchase or signing up for a credit card), clicked back to your home page, and left. That's not a failure, is it?

Here's another challenging case: Conversion Rates for most sites hover around 2 percent. Ninety-eight percent of visitors to your site will leave without delivering the outcome that you desire. How do you parse which exits were because you stunk and which exits were people who came, never wanted to transact, read what they wanted to, and then left—which is OK?

If you have to overlay your own opinions and interpret any metric to determine whether the data is "good" or "bad," then you have a bad metric on your hands. Exit Rate is one such metric.

So, should you not worry about exits? *Au contraire*! Can you separate good exits from bad exits without overlaying your own opinions on the data? *Mais*, *oui*! Use your new BFF, Bounce Rate.

Remember what Bounce Rate measures: of the people who enter your site on a given page, how many leave from that page without clicking anywhere on the site and without looking at any other pages? Those are "bad" exits.

To ensure there is no confusion, I'll reiterate: Exit Rate shows the percentage of people who entered anywhere on the site but exited from a particular page. Bounce Rate shows the percentage of people who entered on a particular page, did nothing, and exited from the site on the same page.

An Exit Rate Exception

There is one exception to the exit rates rule (I know, I know, life is nuanced and complicated!), and that's structured experiences.

Structured experiences are areas on your site where someone must go from page *x* to page *x*1 to page *x*2, and so on. When visitors move along through these pages, then that's success for you. Think of going from Add to Cart to Start Checkout to Complete Credit Card Info, and so on.

The Exit Rate, on any page, indicates a "bad" exit. But in this case it is called Abandonment Rate, to distinguish what is actually happening in terms of customer experience.

Use Abandonment Rate to measure submitting leads, signing up for an email newsletter, or completing any closed multipage process.

Conversion Rate

Is there any another metric that we focus more of our love and attention on than Conversion Rate? Not yet. And perhaps that is how it should be. We are investing in our websites, so we should measure what comes of them.

Conversion Rate, expressed as a percentage, is defined as *Outcomes divided by Unique Visitors (or Visits)*. Outcomes are customarily the submission of an order on your ecommerce website.

That's fairly straightforward, right? It actually is—except one minor thing. Should you use Unique Visitors or Visits? You'll recall Unique Visitors measures unique browsers who visit your site, and Visits measures one particular time (a session) by that unique browser. Each unique visitor might visit your site multiple times (Visits).

The answer is, it depends on your business mind-set. If you choose Visits as the denominator, you assume that every visit to your website is a chance to get someone to place an order and get someone converted.

If you choose Unique Visitors as the denominator, you grant that it is OK for a person to visit your website multiple times before making a purchase. That behavior is a lot more common on the Web. Some might buy right away, but most will learn a bit, go home, and ask permission from their spouse to make a purchase, or they'll research a bit and come back.

So, in choosing the denominator, you are deciding which mental model is right for your company. That choice will influence which referrers, campaigns, keywords, and sources you'll value most.

A good place to use Visits is for sites where the same visitor will make multiple purchases during a short duration of time (say a week).

From my experience, working with different websites—ecommerce and non-ecommerce—I have concluded that most customer behavior is pan-session (across multiple visits). Hence, I strongly recommend using a mental model that reflects customer behavior, so use Unique Visitors in the denominator.

Using Unique Visitors will ensure that your conversion rate calculations more closely reflect the real-world purchasing and consideration process of your customers. It is not "BUY NOW! BUY NOW!" It is "Come visit our website. Thoughtfully consider whether we are a fit for you; it's OK to go back and check with your boss/wife and then conclude the purchase."

The metric you choose will have a broader mind-set, execution, and marketing impact on your organization. Check which denominator your web analytics tool uses. For example, Google Analytics and Omniture (and many others) use Visits by default.

Engagement

The Merriam-Webster dictionary defines *engaging* as "tending to draw favorable attention or interest." We should all try to create website experiences that draw favorable attention or interest. The challenge in the context of measurement is that "favorable attention or interest" is incredibly hard—if not impossible—to measure.

Much blood, sweat, and tears have been expended in the world of web analytics toward measuring Engagement. Some have gone so far as to create torturous, complex formulas that calculate the baby, the bath water, and the kitchen sink. Result: nada. OK, there is some output, but it's ugly and just about useless.

Metrics masquerading as Engagement in the analytics-o-sphere are not really metrics, they are an excuse to (a) not accept the limits of possible and (b) hide what is actually being measured.

Let's take the second excuse—hiding what is measured—first. Many people measure the time a Visitor spends on the website and call it Engagement. (With your permission to vent for a moment, might I just say that I fiercely dislike this trend of the "sexification" of metrics. If you are measuring Time on Site, call it Time on Site and not Engagement!) The challenge for an analyst, or a marketer, is to distinguish between someone who happily spent 10 minutes on `www.nytimes.com` soaking up all the news and someone who was frustrated for 9 minutes because they could not find the story they wanted. Both would be "engaging" experiences using this formula.

Ditto for folks who define Engagement as *the number of repeat visits by a visitor.* In this past week, I visited `www.lenovo.com` eight times because Lenovo decided to

stop supporting System Update. I was stressed and frustrated because I had to locate drivers for my ThinkPad X301 by using its suboptimal internal site search engine! How do you distinguish those visits from someone who visits the Lenovo site regularly to learn about the latest products and updated features?

Now apply this type of emotional filter to any metric (or multiple metrics that you are mashing up) to measure Engagement. It's important to know that if you must overlay your own opinions and interpretations to understand the metric, then you might be on the wrong road.

We all want websites that engage customers. Why can't we measure them with web analytics tools? My friend Theo Papadakis shared this brilliant insight with me: quantitative data (web analytics) is limited in that it can measure the *degree* of Engagement but not the *kind* of Engagement.

Theo defines these terms as follows:

Degree The degree of positive or negative Engagement lies on a continuum that ranges from low involvement, namely, the psychological state of apathy, to high. An engaged person is someone with an above-average involvement with his or her object of relatedness.

Kind Customers can be positively or negatively engaged with a company or product. A more in-depth examination of kind would reveal its content, usually a mixture of emotional states and rational beliefs, such as in the case of positive engagement, sympathy, trust, pride, and so on.

The number of times someone visits your site, frequency of Visits, helps you understand the degree of Engagement. For example, "Visitors who come from search typically tend to visit our website 15 times in the subsequent 30-day period (degree)." There is no layering on top about whether those 15 visits were good or bad (kind).

Take another example: Depth of Visit, as shown in Figure 3.25.

Page Views per Visit	Visits	%
1 page(s)	192,518	78.12%
2 page(s)	28,948	11.75%
3 page(s)	10,899	4.42%
4 page(s)	5,225	2.12%
5 page(s)	2,830	1.15%
6 page(s)	1,832	0.74%
7 page(s)	1,120	0.45%
8 page(s)	794	0.32%
9 page(s)	554	0.22%
10 page(s)	418	0.17%
Subtotal	**245,138**	**99.47%**
Total	**246,454**	**100.00%**

Figure 3.25 Distribution of Depth of Visit, Yahoo! Web Analytics

The more pages a visitor sees, the deeper their journey and the higher the degree of Engagement. But this metric again does not distinguish the *kind* of Engagement.

Here are some other metrics and tasks that can capture degree of Engagement: Time on Site, registering on the site, subscribing to RSS feed or newsletter, submitting a comment, or downloading content. You can probably think of many others.

Two conclusions from this discussion are important to bear in mind throughout your web analytics journey:

- It is impossible to derive the *kind* of visitor Engagement (positive/negative) using web analytics alone, and, therefore...
- When we discuss customer Engagement in the context of web analytics, we are in fact discussing the *degree* of Engagement.

The next time you take quantitative data to your C-level executives, you should first state that your engagement index measures *degree of Engagement* only.

As you create your own metric to measure an engaging experience, consider these important challenges:

- Use web analytics data to measure degree of Engagement, and be open to using other sources to measuring the kind of Engagement.
- Each website and business tries to accomplish something unique. It is good to know what your competitor is doing or measuring, but you want to identify something that lines up uniquely against your website's goals. That something may be different even when compared to your direct competitor.
- In Chapter 1 we covered the importance of measuring Outcomes. A good engagement definition will measure some semblance of an outcome. So you had a high degree of Engagement, but what was the outcome for the business? This is a great stress test of whether you are on the right path.
- The term *engagement* means anything and everything to each person. Current definitions, even when used in the context of the Web, are overly broad (to cover every nuance) or sometimes too narrow (hence unique to just one business). Few people understand what the term means, and that poses a communication and actionability challenge. You don't want to measure a mouse and call it a lion.

Let me close this section with some ideas for measuring the *kind of Engagement* visitors had on your website:

- Use inline or on-exit surveys and ask your customers. You could ask them directly, "Hey, buddy, are you engaged with our site?" OK, maybe reword that a smidgen. The point is, get qualitative data.
- Go for an indirect approach with your surverys by measuring the *likelihood to recommend* as a metric. Likelihood to recommend is a strong proxy for Engagement because it measures the greatest gift you can get from your customers: that they will recommend your business to others.
- Use primary market research. A number of companies will go *door-to-door* (OK, phone call to phone call), ask brief qualitative questions, and report back

to you the kind of Engagement your current or prospective customers have with your web business.

- Use the other awesome proxy: *customer retention over time*. Do long-term analysis of people who come back again and how often (non-ecommerce) or make repeat purchases (ecommerce). We're talking months of data, segmented for online and offline (then compare) and for various micro-segments of your online population. Super awesome.

We all want to engage with our customers. But as analytics practitioners our goal is to use the right metric. We must work hard to get to the root cause (rather than making an excuse) and share the cause and effect with our decision makers. Then and only then will the metric be actionable.

Engagement at its core is qualitative. It is difficult to measure via pure Clickstream (web analytics data). Think differently when you approach the Engagement metric. I'll talk more about surveys and other wonderful qualitative analysis in Chapter 6.

P.S. I picked Engagement as the last specific metric to introduce to you because I wanted you to see how incredibly difficult metrics and analysis can be. We have to understand the limits of data; there is no easy ride if you want glory. Good luck.

Web Metrics Demystified

I have stressed several times throughout this chapter that web metrics are unique to each business. By walking through eight different metrics in this chapter—Visits and Visitors, Time on Page and Time on Site, Bounce Rates, Exit Rates, Conversion Rates, and Engagement—you have also learned various life lessons about the nuances of picking web metrics.

In this section, I'll bring the whole thing together with a set of *rules* I have formulated from my own experience. These rules have come from painful lessons, but I now apply them with religious fervor in my web analytics execution, be it for my startup, Market Motive, or for a large business I might be working with such as Dell or Sephora or Google.

You'll learn how to find diamonds in the rough, you'll learn how to know that a metric you have identified for your management dashboard is actually a good one, and you'll learn the process you can, and should, use to keep your web analytics metrics relevant. Excited? I am.

Four Attributes of Great Metrics

In a world where metrics and key performance indicators are a dime a dozen, how do you know which one is your *must-have darling*?

The following four attributes are all great—nay, magnificent—for metrics to possess.

Uncomplex

Great metrics are almost always uncomplex. Because we make little headway with the recommended metrics foisted on us, we create complex metrics. We'll have six things, each with its own unique multiplier, predicting the position of the sun when visitors click on our site!

Consider this: decisions in companies are not made by one person. If you want action, then the democracy needs to understand performance, and the democracy needs to make decisions. The democracy needs uncomplex metrics that they can easily comprehend.

If you are the only person who understands the metric or the key performance indicator, then you have just guaranteed that your company will not take action.

Don't sexify, uncomplexify.

Relevant

Is the metric you have chosen relevant to your business? Because we have so many metrics, we pick our favorites and then stick with them. The problem is that each business is unique, even businesses that seem similar.

In *Web Analytics: An Hour a Day*, I use the examples of Best Buy and Circuit City. You might think that they could measure their websites with similar web metrics. Nothing could be further from the truth.

The only thing they have in common is that they sell large-screen TVs on their website. Everything else is different: their business models, their priorities, and how each tends to use the Web in its multichannel portfolio. So, the metrics for each company to measure success are also different.

You can seek inspiration from your friends and competitors. But you must truly stress test that the metrics you identify are relevant to measuring the success objectives that are unique to you and your website. I'll discuss ways to measure success for different businesses in Chapter 5.

Timely

A few years back, I interviewed at one of the biggest companies on the Web. They had just closed their quarter, and it had been tremendously profitable. I asked them the reasons for that great success. The following anecdote is 100 percent true:

> *Them*: "We just kicked off the query against our data warehouse; it typically returns the results in three months."
>
> *Me*: Stunned silence.

I learned a very important lesson on that day: be on time or die.

That big company's stock price today is a fraction of its price then. Although not all of the decline is related to their ability to measure, you can imagine how hard it is to succeed in your business if it takes you three months to learn what worked three months ago.

Great metrics arrive in a timely fashion so that your business decision makers can…make timely decisions.

I am not a big fan of real time (see my blog post "Is Real-Time Really Relevant?" at `http://sn.im/akrealt`). But between real time and three months, there is a sweet spot. Find out what your sweet spot is, and then ensure that you can collect and analyze your data—get your metrics with insights—in that sweet spot.

Even the greatest metric in the world is useless if it takes nine days while your world changes every three days. Be timely. Sacrifice complexity and perfection for timeliness.

Instantly Useful

Instantly useful is when you understand quickly what the metric is and you can find the first blush of insights as soon as you look at it. I absolutely love this one. Smooch, smooch, kiss, kiss.

I credit my early experience with ClickTracks for that love because Dr. Stephen Turner and John Marshall eliminated all the non-value-added stuff from the application. There were fewer metrics, which were presented in a way that made it easy to understand performance and get the first blush of insights.

Figure 3.26 shows a great example, the What's Changed report in ClickTracks.

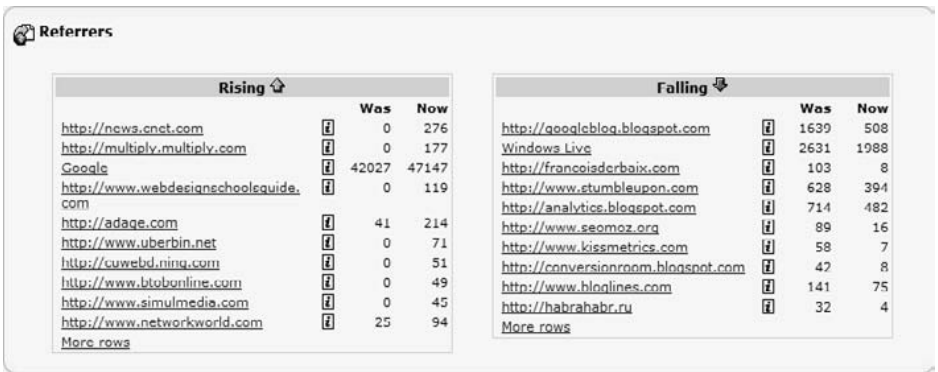


Figure 3.26 What's Changed referrers report from ClickTracks

Anyone can tell you what your top referrers were this month or last month. The ClickTracks report shows you *what you should care about*: referrers that rose in their importance this month and those that went down a cliff.

All the complexity is "hidden," and there is no junk. There's only the stuff you should care about. It will take some nice analysis and time to understand all the nuances and unlock the mysteries and deep stuff (just the way it works with your spouse and friends!), but the first blush is there.

In a data democracy, metrics have to meet the bar of being instantly useful. And not just that, think of your various levels of management at your company and how little they know. If you send them a metric and it is not instantly useful, then it will be instantly ignored.

You want instantly useful metrics, no explanations required, because that will give you an opening to show your deep stuff: to explain the nuances and highlight your analysis!

Smooch, smooch. Yes?

Example of a Great Web Metric

Let me give you a very simple example that I think will crystallize the previous methodology.

I think Bounce Rate is a great metric. Here is how it passes the required four attributes test:

Uncomplex It measures single-page-view visits. Or, "I came, I puked, I left." It's easy to understand, explain, and propagate. Enough said.

Relevant It identifies where you are wasting marketing/sales dollars and which pages stink when it comes to delivering on the "scent." Those two things apply to most web businesses. Bam!

Timely Bounce Rate is now standard in pretty much every web analytics tool and available in every report. Every day. Nice!

Instantly Useful You can just look at it and know what needs attention. You see a 25 to 30 percent Bounce Rate for your site, and instantly you know things are fine. You look at a page with a 50 percent Bounce Rate, and you know that page needs attention. You see a campaign or keyword with a 70 percent bounce rate, and you know there is a fire.

Set aside a half hour today or tomorrow to apply the four attributes test to your own important web metrics. What do you see?

Three Avinash Life Lessons for Massive Success

I've hinted at some painful battle scars that I've earned from waging my web analytics campaigns. The following are three lessons that come directly from the front lines.

Perfection Is…the Enemy of Good Enough

Data quality on the Web is not perfect; things change too fast, everyone wants a piece of data yesterday, and your competitors are strong. Don't spend time getting things perfect when it comes to your metrics.

If you have 90 percent confidence in the data, then make a decision. Don't wait for perfection. Too often we spend too much time distracted by missing tags or the hoopla of deleted cookies. Follow best practices, and then move on. Go for precision and not accuracy (more on this in Chapter 10).

As my friend Stuart Gold says, "An educated mistake is better than no action at all."

Critical Few, Baby, Critical Few!

I owe Steve Bennett, the former CEO of Intuit, all the credit for this important lesson. He constantly pushed everyone to identify their *critical few*, whether it's priorities, goals, or metrics.

My interpretation of critical few is this: when the entire proverbial platform is burning, what is most important? That statement has phenomenal clarifying power.

If your business is on the line, how do you know things are going well or badly? Cutting through all the clutter of data, which metrics are your *critical few*? You probably have at most three critical few metrics that define your existence.

I'll cover how to diagnose the critical few in the next section and get into more detail in Chapter 5.

The Web Metrics Lifecycle Process Is Your Friend!

Metrics, no matter how great, must stand the test of time and business changes. I recommend the simple Web Metrics Lifecycle Process outlined in Figure 3.27.

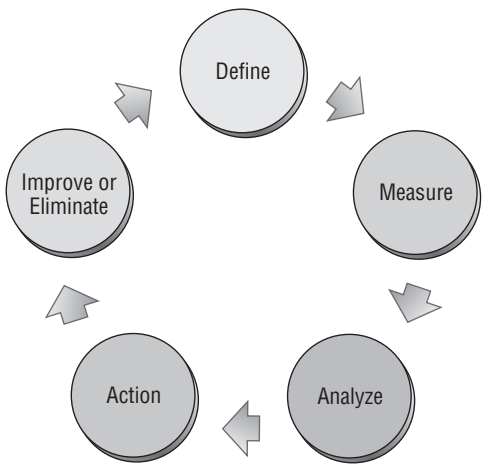


Figure 3.27 The Web Metrics Lifecycle Process

The idea is quite simple. Use the *four attributes of great metrics* test to identify your critical few metrics, go measure them, then analyze the data you collect, and take action.

Then there's the fork in the road. If you can't take action with anything, then perhaps you are using the wrong metric for your business. Eliminate it. If you can take action, figure out how you can improve it further.

Execute the Web Metrics Lifecycle Process in a timely manner; I recommend at least once a quarter. Some metrics will stay—those are your best friends. Others will outlast their value. Give them a warm hug and say, "Bye-bye."

Strategically Aligned Tactics for Impactful Web Metrics

In the next three sections, I will outline three strategic elements related to web metrics. The first element, *diagnosing root cause*, is a technique to help you unravel insights from your critical few metrics. The second element, leveraging custom reports, argues that creating custom reports can accelerate understanding of the site's performance. Finally I'll make the case for starting with a solid understanding of the macro view of your site's performance rather than wandering around in the weeds.

Taken together, these tactics should make you more than great at doing the kind of impactful analysis that transforms organizations.

Diagnosing the Root Cause of a Metric's Performance—Conversion

The simple process of identifying a metric as your key performance indicator and creating a graph of it rarely helps you find insights. There is more to it than that.

In one of his talks, my friend Neil Mason shared the slide in Figure 3.28. It was a very funny way of showing the variables he would use to predict how many people came to his talk.

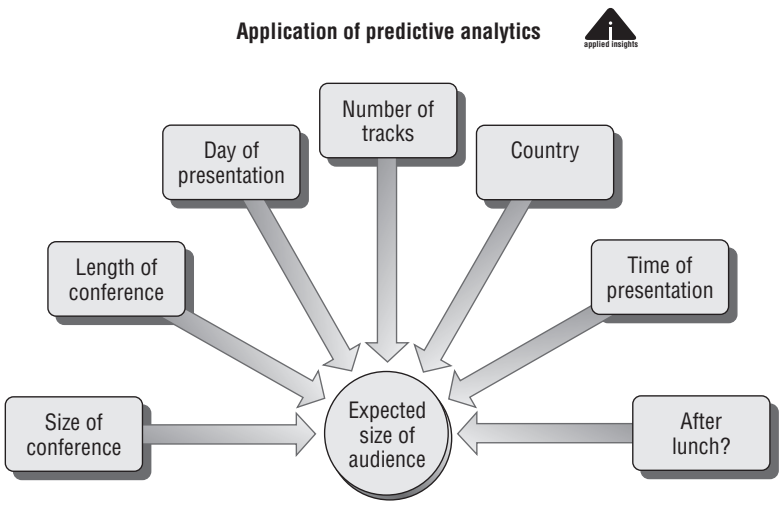


Figure 3.28 Application of predictive analytics—Neil Mason

Notice how incredibly well conceived it is! Neil thought of all the elements, and now he has a magic formula that spits out a useful number. But if estimating an audience is so complicated, imagine how difficult it might be to understand why your website is doing better this month or did worse last month.

I am going to adapt Neil's model to outline a methodology you can use to do real root cause diagnosis of your top key performance indicators. Let's use Conversion Rate as an example (though you can do this with any metric).

Your boss comes into your office and tells you to improve Conversion Rate by 10 percent. Not by 10 points, which would be huge! By 10 percent. What do you do?

Should you run out and spend a ton of money on affiliates, email campaigns, or paid search ads? Should you run to identify the demographic profiles of people who visit your website? (That was a trick question. The answer is no!)

Instead, I recommend going through an exercise, with your marketers and other smart people, that helps you identify all the variables that could cause Conversion Rate to go up or down.

Figure 3.29 shows the results of that exercise for my ecommerce website.

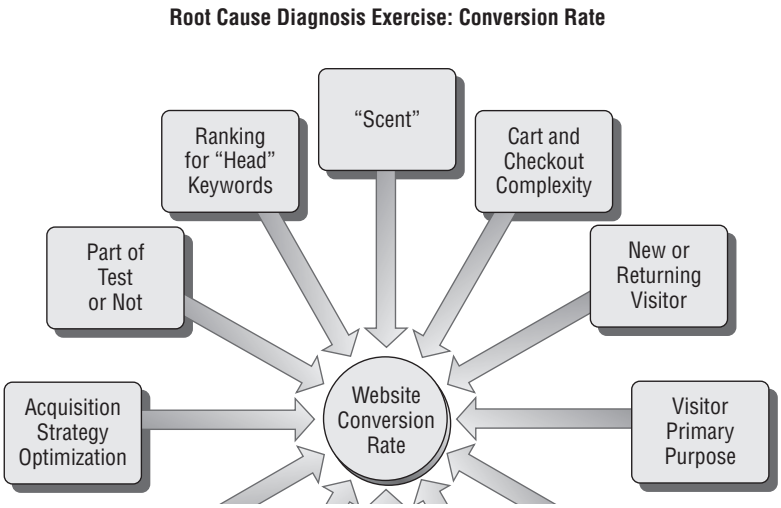


Figure 3.29 Root cause diagnosis exercise

Before you can figure out how to improve Conversion Rate, you need to identify all the influencing *levers*. That's what you see in Figure 3.29.

Conversion Rate depends on your acquisition strategy (where you spend money to acquire traffic), your organic search keyword ranks, the ease of your checkout process, the distribution of why people come to your site (primary purpose), the website "scent" (ability of your campaigns to deliver traffic to the most relevant pages), and so forth.

Next you need to collect data for each of the variables you have identified. Analyzing those variables will help you identify where the true opportunities for improvement are.

The output of this exercise will be something like this: "here are 3 areas out of 15 where we stink." Now do a cost-benefit analysis of where you can get the maximum bang for your buck. If you have done a good job of identifying all the variables, then after this exercise you'll be surprised at what you need to improve to win. It won't be the obvious areas.

You should take away three lessons about this humble process:

Lesson 1: This exercise is of tremendous value.

Lesson 2: This exercise is hard.

Lesson 3: You can't improve what you don't understand.

There is one important reason this methodology always works: it forces you to dig in a methodical manner and let the data, not opinions, drive action. It's work, but then there is no such thing as a free lunch.

Leveraging Custom Reporting

The most underappreciated problem with understanding the performance of your metrics is, wait for it…standard reports!

Our tools are full of wonderful standard reports that were created with the best of intentions by thoughtful people at our web analytics vendor. These people don't understand your business! It's not their fault, though—they're doing the best they can.

As an example, check out the standard report from Google Analytics shown in Figure 3.30.

Site Usage | Goal Conversion | Views:

Visits	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate
27,895	1.54	00:01:39	76.52%	78.92%
% of Site Total: 45.04%	Site Avg: 1.56 (-1.09%)	Site Avg: 00:01:52 (-11.62%)	Site Avg: 68.51% (11.68%)	Site Avg: 76.77% (2.81%)

	Keyword	None	Visits ↓	Pages/Visit	Avg. Time on Site	% New Visits	Bounce Rate
1.	avinash kaushik		1,239	2.35	00:03:58	49.48%	52.95%
2.	avinash		707	2.94	00:04:19	37.77%	52.76%
3.	survey questions		671	1.10	00:00:13	99.11%	93.44%
4.	occam's razor		614	2.07	00:02:43	53.09%	57.98%
5.	4q		402	1.50	00:01:49	55.72%	77.86%
6.	working at google		215	1.18	00:01:00	93.95%	90.23%
7.	web analytics tools		188	1.74	00:02:11	75.00%	67.02%
8.	kaushik		167	1.96	00:02:17	55.09%	58.68%
9.	occame razor		160	2.05	00:03:40	40.62%	57.50%
10.	working for google		142	1.11	00:00:54	92.96%	90.85%

Figure 3.30 The standard Search Keywords report—Google Analytics

Nice. Lots of data and metrics. Hmm…I don't need Pages Per Visit. Time on Site is distracting. I just want the last two columns. Oh, and the best practice in judging the value of a referring site is to look at Outcomes or Conversions. Where is that? Oh, I have to go to another tab, which is shown in Figure 3.31.

Site Usage | Goal Conversion | Views:

Visits	Goal1: All Posts	Goal2: About	Goal3: Speaking Engagements	Goal4: Subscribers	Goal Conversion Rate	Per Visit Goal Value
27,895 % of Site Total: 45.04%	0.90% Site Avg: 1.00% (-10.18%)	1.47% Site Avg: 1.73% (-15.13%)	0.55% Site Avg: 0.53% (4.57%)	0.54% Site Avg: 0.72% (-25.49%)	3.45% Site Avg: 3.98% (-13.15%)	$0.35 Site Avg: $0.40 (-11.50%)

	Keyword	None	Visits ↓	All Posts	About	Speaking Engagements	Subscribers	Goal Conversion Rate	Per Visit Goal Value
1.	avinash kaushik		1,239	4.36%	10.41%	2.99%	2.10%	19.85%	$1.87
2.	avinash		707	2.83%	5.66%	1.98%	1.98%	12.45%	$1.26
3.	survey questions		671	0.15%	0.00%	0.30%	0.00%	0.45%	$0.07
4.	occam's razor		614	2.77%	2.20%	1.79%	2.12%	0.90%	$1.07
5.	4q		402	0.75%	1.00%	0.75%	0.75%	3.23%	$0.39
6.	working at google		215	0.00%	0.93%	0.00%	0.00%	0.93%	$0.05
7.	web analytics tools		180	0.00%	0.00%	0.00%	0.53%	0.53%	$0.00
8.	kaushik		167	1.80%	6.59%	2.40%	2.40%	13.17%	$1.35
9.	occame razor		160	1.88%	2.50%	3.12%	3.75%	11.25%	$1.50
10.	working for google		142	0.00%	0.70%	0.00%	0.00%	0.70%	$0.04

Figure 3.31 The standard Goal Conversion report—Google Analytics

Lovely. I see my conversions, but I just lost the metrics I wanted. How do I judge quickly if things are going well?

This problem happens with pretty much every tool, and it is a below-the-surface issue that actually hinders progress. But you don't have to deal with this issue. You can fix it using the custom reporting feature available in most web analytics tools on the market. Hurrah!

Figure 3.32 shows the Google Analytics custom reporting interface.

The custom reporting interface is quite straightforward. On the left you type in the metric or dimension you want to report on. You drag and drop it on the right box (you see me dragging the Per Visit Value metric to the score card area), and you are done.

While I am at it, notice that I also added custom drill-downs into the data. I can go from Keyword to the Source of that Keyword and then to Search Term, which will help me see what searches people perform when they come from specific keywords. For example, the number-one search by people who come on the keyword *Avinash* is "compare analytics platforms." How interesting!

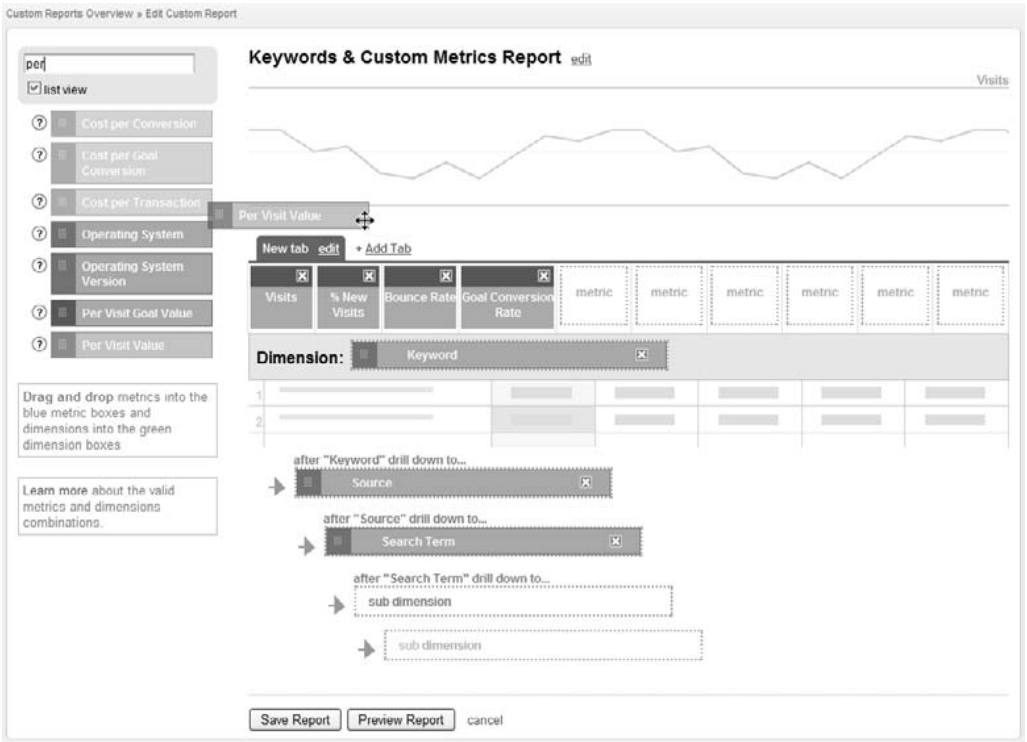


Figure 3.32 Creating custom reports with custom metrics—Google Analytics

Figure 3.33 shows my finished custom report with just the metrics that I am most interested in, which are metrics that in a single clean view will help me understand performance better and take action.

My Glorious Custom Metrics Report

Visits	% New Visits	Bounce Rate	Goal Conversion Rate	Per Visit Goal Value
27,898	76.52%	78.92%	3.45%	$0.35
% of Site Total: 45.04%	Site Avg: 68.51% (11.68%)	Site Avg: 76.77% (2.80%)	Site Avg: 3.98% (-13.16%)	Site Avg: $0.40 (-11.51%)

	Keyword	Visits ↓	% New Visits	Bounce Rate	Goal Conversion Rate	Per Visit Goal Value
1.	avinash kaushik	1,239	49.48%	52.95%	19.85%	$1.87
2.	avinash	707	37.77%	52.76%	12.45%	$1.26
3.	survey questions	671	99.11%	93.44%	0.45%	$0.07
4.	occam's razor	614	53.09%	57.98%	8.96%	$1.07
5.	4q	402	55.72%	77.86%	3.23%	$0.39
6.	working at google	215	93.95%	90.23%	0.93%	$0.05
7.	web analytics tools	188	75.00%	67.02%	0.53%	$0.08
8.	kaushik	167	55.09%	58.68%	13.17%	$1.35
9.	occams razor	160	40.62%	57.50%	11.25%	$1.50
10.	working for google	142	92.96%	90.85%	0.70%	$0.04

Figure 3.33 Finished custom report—Google Analytics

Let me give you one final example of how standard reports can fail you. The standard Landing Pages report in Yahoo! Web Analytics shows you Visits, % Visits, Page Views, and something called a Browse Rate. But you have already learned on this page that the most important metric for Landing Pages is…Bounce Rate!

Figure 3.34 shows how you can quickly fix this problem using the custom reporting interface of Yahoo! Web Analytics and make the report your very own.

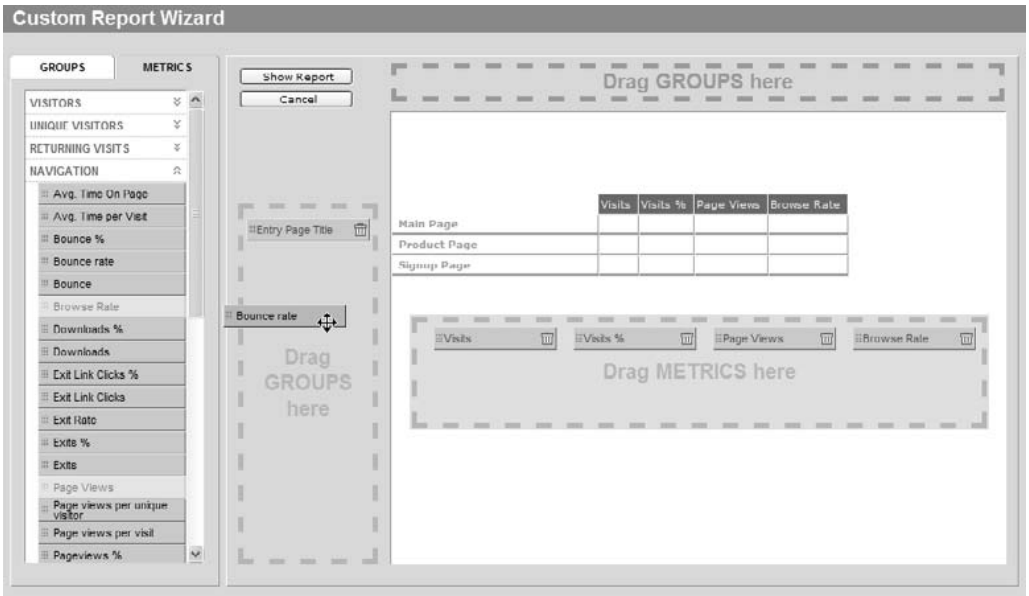


Figure 3.34 Customizing the Landing Pages report—Yahoo! Web Analytics

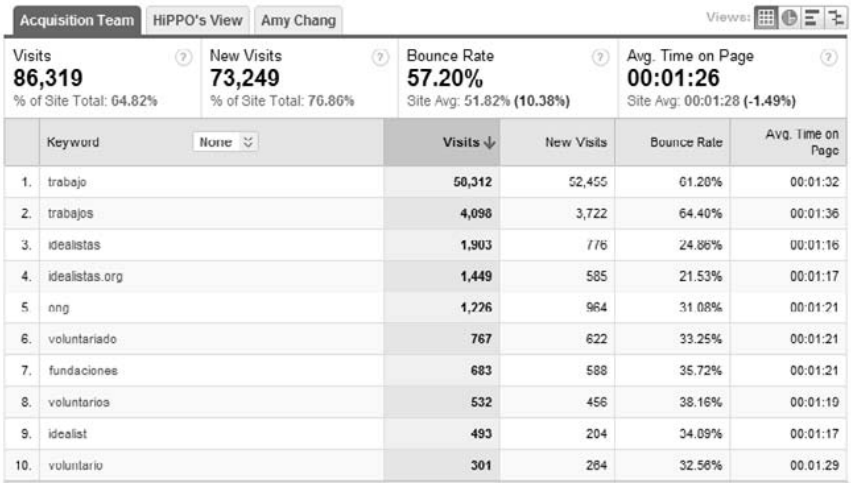
You drag the Bounce Rate metric to the Metrics box. As soon as you are done with that, go ahead and hit the trash box icon next to Page Views and Browse Rate, and you are done!

You'll understand performance better and take action faster simply by creating reports with metrics that are important to you.

Creating Micro-ecosystem Reports

Some tools such as Google Analytics allow you to add multiple tabs with data on your custom report. Currently you probably have a ton of reports running around the company for each person or group that wants their own nuanced report. Silly. You can eliminate this problem by creating just one report (hence one central place for people to go to) and customizing what each stakeholder sees with multiple tabs (see Figure 3.35).

The first tab shows the four metrics on which the acquisition team's performance will be judged. The second tab is for the Big Boss: he cares only about Visits, Conversion Rate, Revenue, and Shipping Revenue (money, money, money!). Finally, the third tab is for Amy, who wants to see Clicks and Visits only.



Acquisition Team | HiPPO's View | Amy Chang — Views:

Visits	New Visits	Bounce Rate	Avg. Time on Page
86,319	73,249	57.20%	00:01:26
% of Site Total: 64.82%	% of Site Total: 76.86%	Site Avg: 51.82% (10.38%)	Site Avg: 00:01:28 (-1.49%)

	Keyword (None)	Visits ↓	New Visits	Bounce Rate	Avg. Time on Page
1.	trabajo	50,312	52,455	61.20%	00:01:32
2.	trabajos	4,098	3,722	64.40%	00:01:36
3.	idealistas	1,903	776	24.86%	00:01:16
4.	idealistas.org	1,449	585	21.53%	00:01:17
5.	ong	1,226	964	31.08%	00:01:21
6.	voluntariado	767	622	33.25%	00:01:21
7.	fundaciones	683	588	35.72%	00:01:21
8.	voluntarios	532	456	38.16%	00:01:19
9.	idealist	493	204	34.09%	00:01:17
10.	voluntario	301	264	32.56%	00:01:29

Figure 3.35 The search "micro-ecosystem" report—Google Analytics

With one report, a *micro-ecosystem* report, you have provided everyone a central place to get all their data. And it's metrics customized to each stakeholder. That's the way to create a data-driven organization!

Starting with Macro Insights

This section will serve as a bridge between your newfound knowledge thus far about metrics and the next chapter, which specifically focuses on analysis and important analytical techniques.

You'll have access to lots of data, perhaps more than you ever wanted. Typically, you will open the tool and instantly start with "How is that page doing?" or "Can I report on all the campaigns that are driving traffic to these six pages and measure retention?" or "I have my key KPIs, and I want a detailed report across all top pages on the website."

Basically you jump gleefully into the weeds. Not that I blame you; it seems like so much fun. Sadly, though, this leads to a classic problem: you can't see the forest for the trees.

My recommendation is to *never* start in the weeds, but instead start with a profound understanding of the forest, of the big picture. I call it focusing on getting the *macro insights* first.

When you are in the weeds with your daily reports and your deep metrics, *everything* can seem important. It is tough to know what to explore and what to ignore. So you do everything. No surprise then that you fail to improve your company's bottom line in any significant manner.

Focusing on macro insights, however, is the simplest thing you can do. It is easier than analysis, and it's much easier than all the weed-level stuff. Yet few people spend time with the macro (perhaps it is hard to resist the allure of having every piece of data, for every page and every visitor, at your fingertips).

Before you put on the Tarzan suit and swing into the jungle, make sure that you ask four simple questions for macro analysis. Each question will help you figure out exactly where you need to dive deep into data. Your boss will love and adore you, because rather than shoveling reports, you'll identify specific, actionable items that have a strategic impact on the business.

Q1: "How many Visitors are coming to my website?"

Didn't I say this was going to be easy?

This is the simplest first question you can and should answer. Measure Visits to your website (sum of sessions) and measure Unique Visitors (sum of unique persistent cookie IDs).

For both of these metrics, focus on the long-term trends. Go as far back as you can to look for seasonal trends and look for other patterns in the data. Establish your comfort level, specifically, that you understand these metrics and that they are being measured correctly.

Tip: As you measure Visits and Unique Visitors, avoid diving into the number of repeat visitors, and this rate or that view, for now. Just for now. Hold your horses.

Q2: "Where are Visitors coming from?"

Ohhh…now it's getting interesting. This question is so full of promise and hope and goodness!

Look at two reports: Referring URLs and Search Keywords. You will almost always be surprised at how people find you.

Referring URLs help you understand which websites are sending you traffic and which are not. It is a great way to begin to understand both what you are doing that is causing traffic to come (relationships, direct marketing, other campaigns, affiliates, and so on) and what you have not done that might be causing traffic.

Look for surprises; you will find them.

With search dominating the landscape, at least for now, look for how much traffic you get for search engines (in your referring URL's report), and then dive deeper into what keywords and key phrases send traffic from each search engine. This is a gold mine of actionability, specifically for search engine optimization (SEO) and, if you are big enough, pay-per-click (PPC) marketing.

Look for nonbranded keywords. They will indicate that you are getting *prospects*—people early in the consideration cycle—and that you are getting traffic at the right level for your branded keywords.

At the end of this quick journey, you can go back to your boss and outline which acquisition strategies are more important and which are not working.

Note: Notice we are not looking at countries, states, or ZIP codes. Unless you are in a deeply geo-specific business (say, in Europe), these can be a distraction at this early stage.

Q3: "What do I *want* Visitors to do on the website?"

The problem with web analytics data is that once you get access, it can be a huge time sink. Every place you turn there is a new piece of data—a new rabbit hole you can jump down. And it can be kind of fun.

Don't do that! Step away from your website, and take a long, hard look at yourself and your business.

Then answer these simple questions:

Why does your website exist?

What are your top three web strategies (paid campaigns, affiliates, trying to get Digg'ed)?

What do you think should be happening on your website?

Write down the answers, and publish them far and wide in your company and your local newspapers.

The output (your answers) could be metrics or KPIs that you think measure success. It could be simply a list of acquisition strategies for your website (SEO, PPC, DM, and so on), or it could be a mission statement that somehow ties to your company bottom line. You can calibrate the altitude later, but you must have some precision about what you want your customers to do on your website.

Note: *Marketers, analysts, website owners*: Notice that "What do I want the Visitor to do?" is the third question and not the first one. That is because my experience suggests that you need some context from your web data to even think about visitor actions clearly. Often, sans the web data, you don't have enough understanding of basic web reality to help you answer these questions correctly.

Q4: "What are Visitors actually doing?"

It's the moment of truth, baby!

Now you take your first shallow dive into the data. Look at these four details in your reports:

Top entry pages Home pages are dead. Thanks to search and marketing campaigns, people come directly deep into your website. Identify the top 20 "home pages" of your website. Mark these as important, educate your boss, and start to wean her or him away from obsession with your website's home page.

Top viewed pages This is a great way to know what content is being consumed, and it will probably be different from what you think should be consumed. The top viewed pages can also help you, in conjunction with top entry pages, see why people end up looking at what they do.

Site overlay (click density) analysis For your top viewed pages, look at the site overlay report, and analyze the click patterns (only on the top 10 most viewed pages on your site, to keep it simple). It will help you understand navigational challenges on your website, it will help you understand visitor intent, and it will suggest optimization actions you can take.

Abandonment analysis You have surely created your first couple of funnels right now (for your order-taking process or for the steps it takes to submit a lead or take a donation). Check out the funnel steps where the highest abandonment is happening. Visitor behavior there will identify big opportunities that will improve outcomes for you, fast.

The goal is for you to simply get acclimated with content consumption and navigation behavior on your website. This will give you so much more context and a richer understanding of customer behavior. That in turn will be critical as you dive in to measure obvious famous metrics such as Conversion Rate.

> **Note:** The ordering of details is important. We tend to dive directly into measuring Conversion Rate, and it will turn out to be rather pathetic. Then we work our way backward (with our eyes closed), and inevitably we get frustrated. A better ordering is to understand customer experience to the extent you can with these simple reports and then work forward. Also notice we have not done path analysis. Thank goodness!

So, there you have four simple questions that help you look at the big picture. You can start calibrating what's most important for your website based on the data and begin to understand your priorities. The questions are simple and straightforward.

My goal in teaching you the life lessons of Web Analytics 2.0 is to encourage those who have just started with web analytics, or those who are currently frustrated to focus on macro analysis and not step into the quicksand of micro analysis. Far too often we all go micro, and sadly we are never able to go back.

Up next, the glorious world of deeper data analysis.

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