

When More is Not Better: Page Tags

*The Dramatic Proliferation of Script-based
Tagging and the Resulting Need for a
“Chief Data Officer”*

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Executive Summary

“**The Internet is here** to stay,” they say, and so site operators and marketers continue to look for ways to maximize their investment in the online world. Be it creating more engaging experiences, delivering more valuable advertising, or simply selling more product through lower-cost channels, nearly every business today has some effort underway to better leverage the online and mobile channels. They also say, “Without measurement there can be no improvement,” and so a byproduct to our collective rush online is the deployment of solutions designed to measure the effectiveness of our efforts.

Web analytics and digital measurement solutions are designed to help companies continually measure and improve their online efforts. Small blocks of data, or “tags” feed these measurement solutions, which can then measure a visitor’s movement through the site, show them different content and advertising, survey them, and more. Tags present a relatively low-barrier to entry into digital measurement and are the default data collection strategy for millions of web sites and web-based applications worldwide.

Available data suggests we have entered into an era of “tag proliferation.”

Case in point, one well-known brand is reported to have 28 different tags on their purchase transaction page in an effort to document the transaction to their various measurement, marketing, and internal systems. While exceptional, this company is far from alone, and this example highlights the fact that the use of tags is rapidly becoming a problem.

In *Web Analytics Demystified*’s opinion, the problem with tags is three-fold:

- ♦ Tags become a panacea, replacing sound business measurement practices
- ♦ Tags can slow down page loading and degrade the consumer experience
- ♦ Tags have the potential to erode data confidence when poorly managed

Despite these challenges, like the Internet, tag-based data collection and site optimization is clearly here to stay. With this in mind *Web Analytics Demystified* proposes that organizations leveraging tags take a more pro-active approach towards their use. Specifically we are advocating for a nominal “Chief Data Officer”— someone to examine, own, and manage site-wide tagging efforts in an effort to ensure that this proliferation happens for a reason, that the reasons are sound, and that the results deliver clear business value. ❖

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The Dramatic Proliferation of Tags

While their emergence was slow in the beginning — likely owing to Information Technology concerns about bandwidth, page load times, and data ownership — in the past three years the growth in availability and use of JavaScript-based page tags can only be described as explosive. Hundreds of technologies have been developed to leverage page tags to power a diversity of site and marketing efforts including:

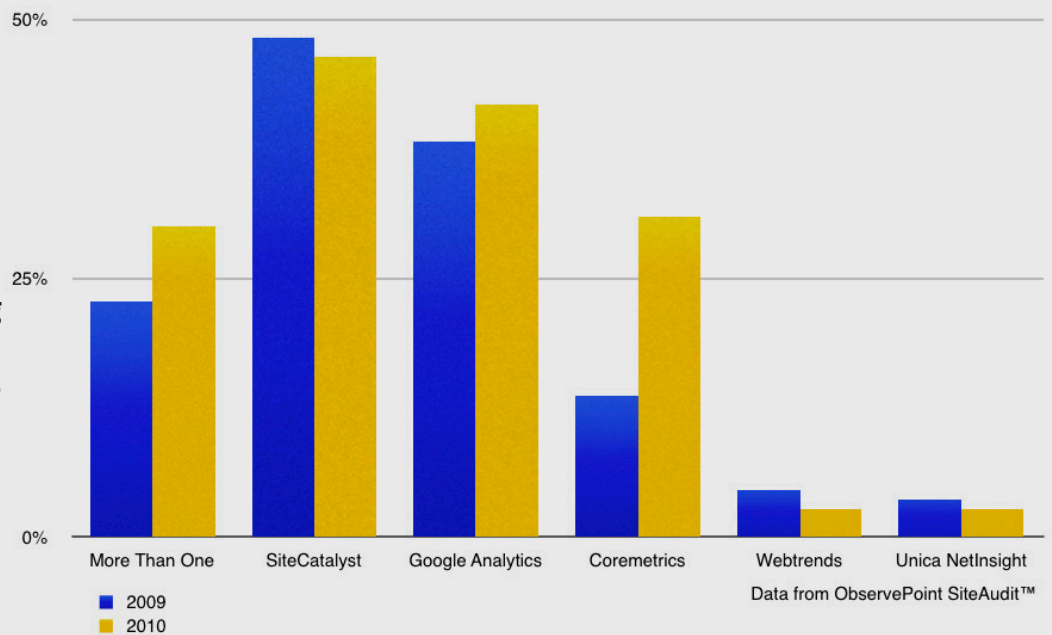
- ♦ Web analytics solutions that use page tags to facilitate the collection of data;
- ♦ Audience measurement solutions that increasingly use page tags to improve the quality and confidence in their panel-derived estimates;
- ♦ Site optimization solutions that use page tags to manage the rendering of alternative content and offers;
- ♦ Email marketing solutions that use page tags to track recipient response, behavior on site and conversion;
- ♦ Ad serving solutions that use page tags to manage the placement, rotation, and targeting of advertising units;
- ♦ Search marketing solutions that use page tags to verify clicks and track search-driven conversion events;
- ♦ Affiliate marketing solutions that use page tags to track affiliate-driven sales and revenue;

The proliferation of tags has become so acute and often difficult to manage an entire category of “page tag management” solutions has emerged from various vendors — solutions that ironically are powered by yet another JavaScript-based page tag.

What’s worse, many companies have taken to co-deploying page tags from competing vendors in a single sector, for example Omniture SiteCatalyst and Google Analytics. According to a study conducted by ObservePoint, in 2010, nearly one-third of all retailers had more than one web analytics tag placed on their web site, as well as other tags for advertising, email marketing, search, and targeting (*See Fig. 1*). What’s worse is that this is a 30% increase from 2009, likely owing to the improvements made to Google Analytics during the last half of 2009 and the dramatic growth in Coremetrics deployments.

Figure 1.

**Percentage of Top
100 Internet Retail
Web Sites Containing
Individual or Multiple
Web Analytics
Solutions**



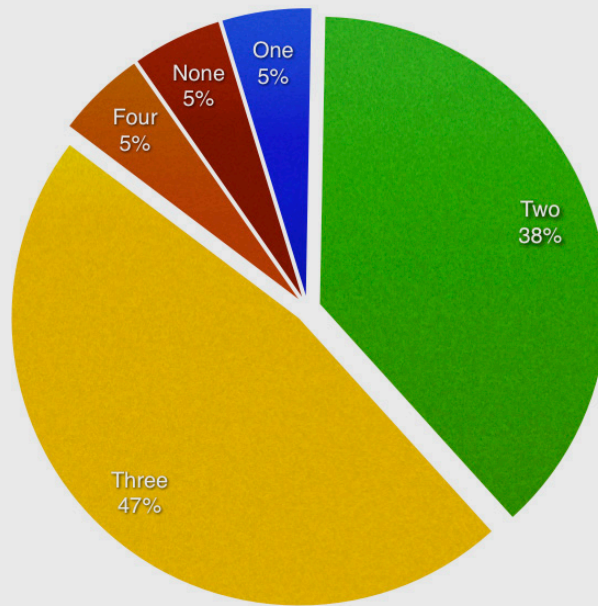
More relevant to the notion of proliferation of tags is this distribution of web marketing tools and technologies powered by JavaScript page tags. The following pie chart (See Fig. 2) examines the percentage of online retailers by number of web analytics, display advertising, and audience measurement services deployed across the top 100 Internet retailing sites.

This data excludes other common tag-based services like feedback and survey, email, social networking, and customer communication services (click-to-chat, click-to-call, etc.) Given the ubiquity of conversion tracking from email service providers and the increasing number of deployments of social services from Twitter and Facebook, the numbers presented here may be conservative by as much as half, perhaps more.

This data suggests that tag proliferation is real, and happening at an increasing pace. While Web Analytics Demystified cannot fault business owners from wanting to deploy the latest-and-greatest technology to help understand and improve the online customer experience, we caution our clients based on three primary observations: data confidence, load time considerations, and the fact that more tags doesn't mean more accuracy.

Figure 2.

**Number of Tag
Based Web Analytics
Solutions Deployed
by Percentage in
Top 100 Internet
Retailers**



Data from ObservePoint SiteAudit™

Data Confidence

Tagging looks easy, and certainly those vendors depending on a page tag do everything in their power to encourage the belief that getting these scripts deployed is a “slam dunk” and will be completed in days if not hours. Unfortunately, the truth is not nearly as pleasant; depending on the vendor and tag and given the increasing complexity of interaction found on most business-focused web sites, tag deployments can take weeks, months, or more.

The difficulty typically arises from four main areas:

- ♦ Multiple web deployment systems;
- ♦ The necessity to populate server-side data into tags;
- ♦ Site ownership spanning multiple geographies and business units;
- ♦ Organizational challenges associated with defining data collection requirements.

Certainly there are cases where tags can be deployed “universally” through common header and footer files, although emerging media and technologies are increasingly limiting this opportunity. The end result is typically a rolling deployment of tags that never appears to be truly complete, which, given the fact that these systems don’t report or function when the tags aren’t present, results in gaps in the data.

These gaps, in our experience, have the potential to erode confidence in the resulting systems, especially in the case of web, search, ad, and email analytics. Given the somewhat bumpy history each of these systems have, punctuated by hiccups in data collection, suddenly required upgrades and service outages, a lack of coverage is yet another reason for stakeholders who “don’t like the numbers” to question the accuracy of the systems deployed.

Load Time Considerations

During the early days of tag-based data collection systems the single most common complaint revolved around the observation that these tags added to the overall size of the page being downloaded. Information Technology groups, adept at using tools like Keynote and Gomez, were constantly under pressure from business and marketing groups to “make the site load faster”. The technologists fairly noted that any tag caused a performance degradation and pushed back on business and marketing, opting instead for server-side data collection technologies.

Over time digital measurement vendors evolved their pitch to marketing into a predictable combination of “people have fast connections to the Internet” and “our files are designed to be cached in the browser.” Both statements are fundamentally true and so over time I.T. ceased their resistance to tag-based data collection, leading us to where we are today. Unfortunately “fast connections” and “browser caching” fail to take into account one major trend in technology today: the emergence of mobile browsing.

As smart phones and other connected devices like Apple’s iPad become increasingly important to how individuals connect to the Internet, download times once again rear their ugly head as a site development and deployment consideration. Especially given that not everyone has a 3G or 4G enabled device, and even if they do, not every location will provide 3G or 4G speeds. Given recent browser advances and the ability to render “normal” web pages, Web Analytics Demystified suspects that tag proliferation will have an adverse effect on the mobile browsing experience.

Additionally, while these files are typically cached in the browser to improve performance, the first request for any file or any subsequent request after the browser history has been cleared always necessitates the download. In the context of the aforementioned sports brand having 28 tags on their order confirmation page, it is very likely that few of those tags are cached, further degrading the visitor's experience at the most critical step in the transactional process.

More Tags Does Not Mean “More Accuracy”

When companies have deployed more than one of any largely overlapping solution Web Analytics Demystified issues caution. While the reasons for this occurrence vary, we often hear clients rationalize: “we don't trust Solution A so we also deployed Solution B for confirmation.”

This, in our opinion, is a mistake.

Universally, each vendor and solution in a given technology set has a different data processing and storage strategy, resulting in different definitions of the terms used to describe the data collected. So despite the fact that Solution A and Solution B both report on something called a “Visitor”, the chances that two co-deployed solutions from two different vendors on the exact same pages will report the same number of “Visitors” is essentially nil.

The reasons different systems produce different numbers are various: tag placement on the page, tracking methodologies, data storage, and the nuanced way that individual vendors define supposedly “standard” terms in web analytics. Eric Enge of Stone Temple Consulting did a good job detailing this specific challenge in his 2007 “Web Analytics Shoot Out”¹ but regardless of the reason, the result is the same: overlapping tags have a tendency to decrease the overall confidence in reporting from all deployed solutions.

When different numbers are reported questions are raised about the accuracy of both systems. Unless very specific guidance is issued to the business regarding the use of concurrent systems, end users either gravitate towards the system (and numbers) that they best understand or gravitate towards whichever system is giving them the answer they are currently looking for.

Tag Proliferation: What can be done?

These observations, juxtaposed against the dramatic increase in use of tag-powered technologies, paints a picture of an increasingly fragile site architecture where sites are becoming mash-ups of multiple external scripts, some of which have the potential to negatively impact the overall visitor experience if not managed correctly. Unfortunately, few business leaders ever show tremendous interest in simplifying the status quo, instead preferring to deploy the latest and greatest technology in an effort to gain the upper hand on the competition.

Given this last observation, Web Analytics Demystified prefers to offer practical advice. Instead of telling you to “stop deploying so many tags” we will instead issue caution regarding the situation and encourage readers to consider adding a Chief Data Officer to the organization. ❖

The Chief Data Officer (CDO)

The Chief Data Officer's role is to understand the flow of information within the connected business and to keep an eye on the various points of data collection including, but not necessarily limited to, tag-based sources. While your business may not be large or complex enough to warrant having this position be a senior executive, if your company is making extensive use of tag-based data collection and page manipulation tools, someone should take responsibility for keeping track of these tools.

The CDO's Responsibilities

The Chief Data Officer's responsibilities are relatively simple, at least in the context of this white paper:

- ♦ To maintain a high level of visibility into the external objects deployed throughout the web site, especially those used for data collection;
- ♦ To manage the deployment of tag-based data collectors, including version and quality control processes, along with other Information Technology resources;
- ♦ To maintain some level of relationship with each of the vendors providing tag-based solutions, at least as a participant in the conversation alongside business leaders who likely "own" the technology investment;
- ♦ To manage internal expectations regarding data collection overall, and to own the determination of which systems are expected to provide information to specific efforts requiring data and information;
- ♦ To continually audit data collection technology and processes to ensure data quality and communicate data confidence throughout the organization.

Fundamentally the Chief Data Officer should maintain a complete understanding of the *who, what, where, when, why* and how data is collected across the web site (and in large enough companies, the entire Enterprise.) For example:

- ♦ Who is collecting the data, and for whom is the data being collected?
- ♦ What applications are being used to collect and store the data?
- ♦ Where is the data coming from, and where is it going?
- ♦ When was the last time the data was reviewed or used?
- ♦ Why is the business collecting the data?
- ♦ How is the business putting the data to use?

While some readers may blanch at the idea of a central owner for this type of information, perhaps seeing the role as an impediment to being “agile” or to leveraging diverse emerging technologies to solve business problems, *Web Analytics Demystified* would encourage those readers to honestly answer the following question:

How’s that going for you?

In our experience, companies that eschew process and governance for agility and innovation commonly have a great deal of difficulty justifying expenses, qualifying opportunities, or calculating return on investment. These companies have a tendency to keep throwing ideas at the wall in the hopes that something will stick; the problem is that sometimes the best ideas are less-than-obvious until the data is carefully examined — something you can’t hope to do if you don’t understand or have confidence in your data and sources.

The CDO’s Toolchest

In addition to a broad understanding of the multiple technologies deployed throughout the web site, *Web Analytics Demystified* recommends that the Chief Data Officer stack the deck in his or her favor by deploying a handful of useful technologies and tools. In addition to the usual suspects — site performance monitors, session replay technology, and “hackers tools” to inspect individual pages — *Web Analytics Demystified* recommends deploying two relatively new applications: tag auditing services and a continuous tag monitoring application.

Tag Auditing Services

One unusually fallacious assumption that too many business owners make after investing in a tag-based solution is that “the implementation went as planned and Information Technology has assumed responsibility for the solution.” Except in simplest of situations, this assumption is all too often false and, when anyone bothers to look, huge gaps in data gathering often exist. This situation is exacerbated by a variety of common challenges including:

- ♦ Multiple vendors or agencies creating content;
- ♦ Multiple deployment technologies being used across the site;
- ♦ Different business units responsible for content deployment;
- ♦ Different geographies responsible for content deployment;
- ♦ Sites have been added through acquisition or independent development;
- ♦ Sites have been added to support emerging technology (e.g., mobile);
- ♦ Multiple technologies being used to collect the same data.

Even when a common “header/footer” deployment is used or a so-called “Universal” tag is leveraged, Web Analytics Demystified all too often finds gaps in the deployment of data collection technology. While the failure usually results from a breakdown in internal process and governance, the solution is surprisingly simple. Tag auditing services, such as those provided by this paper’s sponsor ObservePoint, can be directed to crawl your web site and report back on what tags where found where (*See Fig. 3*).

More importantly, tag auditing technology can report back on gaps in the deployment, highlighting pages, micro-sites, and entire domains that are missing technology that has already been bought and paid for (*See Fig. 4*).

Finally, and perhaps most importantly, the most useful tag auditing services are going to provide additional granularity regarding individual elements in the page tag, especially where those variables are required for the tag to function properly (*See Fig. 5*).

Figure 5.

Variable-level reporting found in ObservePoint SiteAudit showing how often individual Omniture variables are not populated.

| Omniture Variables Report | | |
|--|---|--|
| URL | Pagename | Channel |
| 1. http://www. .com/weather/radar/interactive/ | interactive radar | iradar c3=iradar;c5=iradar;c11=Data Not Available;c12=Data Not Available;c13=Data Not Available;c14 |
| 2. http://www. .com/life/programming/nbcplayer/ | video:library:full-episodes:index.shtml | c2=Online;c3=Video;c4=Video Library;c6=http://www. .com/video/library/full-episod Entertainment;c9=NBC Network;c10=24/7 Video;c11=24/7 Video video:library:full-episodes:inde Network 24/7 Video;c13=New;c |
| 3. http://www. .com/life/arcade/default.aspx | us.tv; _EXP_GAME_affiliate | us.tv c3=us.tv;c4=. ;c5=us.tv;sy |
| 4. http://www. .com/news/green/good-green-fun.aspx | widget Green Screens Electronic Recycling Event | c3=widget;c4=widget Green Screens Electronic Recycling Event ;c6=www. .com;c7=4i c8=Green Is Universal;c9=Corporat |

While some site owners might be tempted to run a tag audit report once and, after correcting whatever errors are found cease auditing activity, Web Analytics Demystified's opinion is this is a huge mistake! Modern web sites, especially those deployed by any large enterprise, are highly dynamic and subject to constant addition, revision, and removal. Every new page deployment is an opportunity for something to break, so tag auditing, just like site performance auditing, is an "always on" initiative.

Regarding the need to continuously monitor tag deployment, ObservePoint's customer VML found ongoing reporting invaluable when a developer launched an update that had unfortunate ramifications on their Omniture reporting:

"Last month I had a situation where we pushed to production as usual, verified everything, and then went about business as usual. But when we pulled our monthly dashboard data, half the data was missing.

"One of our developers had deployed a hotfix for something that broke the analytics, but nobody told me that the site had been touched, and I wasn't watching the reports as closely as I should have. I see lots of value not only in verifying your tagging once, but having it done on a periodic basis automatically, and having the system alert me when things change."

Craig Scribner

Senior Data Analyst, VML

Tag Monitoring Services

While tag auditing services provide an ongoing view into whether purchased technology has been properly deployed, tag monitoring services solve a slightly different problem: tag-based services only provide value if they are active and functioning properly. It seems obvious, but companies often learn the hard way that software-as-a-service (SAAS) is easy to build but much harder to maintain, especially through the dramatic growth some of these applications appreciate.

What's more, tag failure can be either parties' fault — the vendor or your own company. Especially in complex implementations and environments where the difference between proper application functioning and not can come down to a single line of JavaScript, a single DNS entry, or a single external file.

Unfortunately, most if not all tag-based data collectors function with a move-forward model, e.g., data collection starts from the moment that the tag is properly deployed on the site, and have no latitude to go back after the fact and reprocess data. With this in mind the onus is clearly on both the vendor and their customer to ensure that data collection is uninterrupted, Unfortunately, the customer will too often fail to monitor on their end, instead opting to scream at their vendor when things go awry.

Fortunately, a variety of services are available to monitor for the result of a tag-based technology functioning properly. For example, performance-monitoring solutions like those provided by Keynote and Gomez can be trained to continuously ping for service uptime, as can customer experience management solutions like those provided by Tealeaf and others. Additionally, companies including this paper's sponsor ObservePoint make tag-specific monitoring solutions.

"Ensuring data integrity is important to our marketing analysis team. Our partnership with ObservePoint gives us confidence that analytics data collection and critical content on dozens of international domains is always reporting accurately. SiteAudit has helped us identify points of reporting duplication, which has reduced margins of error and also provided significant savings on data collection fees."

Elizabeth Shepherd

Head of Data Strategy and Business Intelligence, Hotels.com

With tag auditing and monitoring solutions in place, the Chief Data Officer has a fantastic opportunity to improve organizational awareness and trust in digitally collected data and information.

The CDO's Opportunity

We propose that the Chief Data Officer's role has the potential to further escalate the importance and value of web and digitally-collected data within any business. As the lines between online and offline continue to blur, the need to have reliable data flowing through connected channels into the traditional business and customer intelligence infrastructure becomes paramount. The converse is also true: lacking reliable and trustworthy data, business leaders are unlikely to treat online channels as the valuable source of information and insights they ultimately are.

Web Analytics Demystified has worked with dozens of companies who are significantly invested in web and digital analytics solutions but who fail to take advantage of their investment. Because the online channel is usually new, nearly everyone in leadership has some opinion about how the web site should look, how it should operate, and what results they should expect. Inevitably when strong leaders form opinions they are hesitant to back down, so when data manifests that suggests an alternative might perform better, the response is often "well, Google Analytics says something different and comScore says something different, so I simply don't believe your data."

At this point, the traditional web analyst is dead in the water; the data is different because in many cases it is designed to be different. But the CDO's mandate is to enforce the widespread use of a single, audited and verified web analytics solution as a "gold master" for data used for the decision making process. Business users can use any number of services — and trust us, they will — but the Chief Data Officer has the opportunity to draw the line and say "Enough! We have one Enterprise standard for online data that is audited and verified and we trust it. We trust these numbers. Use them."

With this mandate, and in the context of the other responsibilities outlined earlier in this paper, our belief is that the Chief Data Officer can propel your businesses use of digitally collected data well ahead of where it likely is today. Again, keep in mind that the title is irrelevant provided the responsibility is given to someone senior, respected, and trusted within the organization. Their opportunity is to make web data a core component of business decision making, not a debated afterthought or worse, an under-utilized cost center creating a financial drag on the rest of the organization. ❖

Web Analytics Demystified's Recommendations

If yours is like many sites out there you already have a number of tag-based solutions deployed to collect data, modify content, and otherwise improve the overall visitor experience online. But the deployment of these solutions does not come without risks that require management and mitigation. Unfortunately, the most common strategy for managing and mitigating this risk is to assume that someone else has everything under control.

Because we constantly see the problems associated with this ill-conceived strategy, and in the context of the information presented throughout this white paper, Web Analytics Demystified makes the following recommendations:

Recommendation #1: Assign a “Chief Data Officer”

If nobody is assuming oversight responsibility for the site-wide deployment of JavaScript-based page tags we recommend immediately correcting that situation by assigning a “Chief Data Officer” within your organization. While you may select a different title the idea is that your CDO will be:

- ♦ Relatively senior and have enough clout to make changes when warranted;
- ♦ Technically skilled in order to understand the nuances of tag-based deployments;
- ♦ Politically astute to mitigate the inevitable wrangling over vendors, solutions, and deployment schedules;
- ♦ Thick skinned, since the shift from “unmanaged” to “managed” usually creates internal tension.

Recommendation #2: Actively Manage Your Tags

Once your Chief Data Officer is in place the next step is to get a handle on the “*who, what, where, when, why and how*” behind each tag-based solution and, with that information in mind, begin to actively manage tag deployments. Here we recommend tag auditing and monitoring solutions to proactively approach the combined problem of making sure that tags are properly deployed and continually functioning.

Furthermore, do not make the mistake of believing that you can “hand check” your tag deployment. Any site of size or complexity will inevitably have too many moving parts to reasonably be monitored systematically by viewing page source, using a “freebie” browser plug-in, or by watching for anomalies in the data. Automation is the key to effective tag management.

Recommendation #3: Don't Over-Tag

Finally, don't over tag your site. Many companies may turn a deaf ear to this recommendation, but just because a solution exists doesn't mean it should immediately be put into your production environment. And just because your Information Technology group insists that “only they can deploy tags” does not make it true — marketing and business users have become particularly adept at sneaking tags into containers designed for content, often supported by vendors simply trying to make a sale.

Don't get us wrong — we are huge fans of tag-based technologies — but we are even bigger fans of our clients taking a strategic and measured approach towards any site optimization effort they undertake. If there is a good business reason to deploy a new technology we say “do it” but make sure to critically examine good business reason in the context of other technologies you already have deployed, your site infrastructure, and common sense in general. ❖

Conclusions

Given the breadth of current deployments tag-based data collection is a technology unlikely to go away anytime soon. Considering the increasing importance of digital channels and the commensurate increase in revenue derived through these channels, Web Analytics Demystified strongly encourages our clients and readers to take a proactive approach towards the management and monitoring of tag-based data collection.

Our recommendation is to assign someone the role of “Chief Data Officer” and to give that person the mandate to ensure highest-quality data collection, integrity, and use across the business. Supported by the right tools and technologies, Web Analytics Demystified clients who have taken this advice are dramatically more prepared to leverage their investment in digital measurement than the majority of companies currently struggling to benefit from web analytics today.

The author welcomes feedback on this document. Please feel free to write Eric T. Peterson (Web Analytics Demystified) at eric.peterson@webanalyticsdemystified.com. ❖

About the Author



Eric T. Peterson

Eric T. Peterson, CEO and Principal Consultant at Web Analytics Demystified, has worked in web analytics since the late 1990's in a variety of roles including practitioner, consultant, and analyst for several market-leading companies. He is the author of three best-selling books on the subject, *Web Analytics Demystified*, *Website Measurement Hacks*, and *The Big Book of Key Performance Indicators*, as well as one of the most popular web analytics bloggers at www.webanalyticsdemystified.com.

Mr. Peterson has committed much of his life to the betterment of the web analytics community, so much so that Jim Sterne, President and co-founder of the Web Analytics Association says "Eric's leadership in the industry is unparalleled, his devotion to the community is legendary and his years of experience translate immediately into strategic and tactical competitive advantage for everybody who works with him."

About Web Analytics Demystified

Web Analytics Demystified, founded in 2007 by internationally known author and former Jupiter Research analyst Eric T. Peterson, provides objective strategic guidance to companies striving to realize the full potential of their investment in web analytics. By bridging the gap between measurement technology and business strategy, Web Analytics Demystified has provided guidance to hundreds of companies around the world, including many of the best known retailers, financial services institutions, and media properties on the Internet.

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