comScore.

Open White Paper

For Submission to ABCe, ITG & JICWEBS

Proposal For a New Person-Centric Measure
For Web Site Server Measurement in the U.K.

New Approach to Integrate comScore Panel and Site Server Data to Adjust for Potential
Overstatement of Audience Size Caused by Cookie Deletion

September 2009

Cookie Deletion: A Problem and a Solution

This paper presents the results of a study of the rate at which cookies are deleted by computer users and examines the impact that cookie deletion has on the use of Web site server data for estimating the size of Web site audiences or for measuring the reach and frequency of online advertising campaigns. The study is based on an analysis of the cookie deletion behaviour within approximately 60,000 monitored home and work computers from the comScore panel database in the U.K. during March 2009. It highlights the risks in the possible misuse of current site server measurement metrics because of cookie deletion and underlines the importance of the creation of an industry agreed person-centric measure for counting unique Web site visitors.

In the U.K. and Ireland, Web site server data are audited by ABCe, according to standards agreed by the Internet Technical Group and under the auspices of the JICWEBS, the Joint Industry Committee on Web Standards. ABCe delivers both monthly and daily data on Unique User/Browsers (UU/Bs) for all certified properties. These definitions expressly state that these are about devices measured, not people. Daily UU/B data goes a long way to mitigating the cookie deletion issue in the context of site centric measurement for devices.

However, in the absence of an industry agreed person-centric measure, the Unique User/Browser numbers are sometimes used a proxy for unique persons, leading to an over-estimation of audience size.

Person-Centric Measurement from Web Site Server Data

comScore research shows that by calculating cookie deletion rates and applying appropriate adjustment factors to Web site server data, accurate person-based metrics can be derived. Cookie deletion then ceases to be a problem for site analytics, but is rather the means to solving a long standing need for definitive audience measurement. Through its Media Metrix 360 service, which combines census-based Web site server logs and panel-based audience measurement data, comScore is delivering a new measure of a "Unique Visitor" that is person-based.

Proposed Measure for consideration by ITG & JICWEBS:

> **Unique Visitors**—a unique and accurate count of the number of people visiting any content of a website in a given period of time, accounting for any possible duplication as a result of cookie deletion, cookie rejection, or IP address changes.

This paper outlines the implications of cookie deletion for Web site analytics and audience measurement, which comScore has resolved with its Media Metrix 360 service. This new service reconciles Web site server and panel data to deliver a person-centric measure of site visitors, while accommodating the server log numbers for page impressions, auditable by ABCe.

comScore also will submit a closed white paper to ABCe on the methodology used to create these measures using comScore's Media Metrix 360 solution, for review by the Internet Technical Group.

Summary Findings of Cookie Deletion Study

For the purposes of the study, comScore analysed the first-party "B cookie" from Yahoo! and the third-party ad server persistent cookie from DoubleClick, each believed to be broadly representative of cookies delivered to the U.K. Internet population and each reaching well in excess of 20 million Internet users every month. The study examines the degree to which Internet users clear these cookies from their computers, thereby causing site and ad-servers to deposit new cookies and potentially leading to overstated estimates of unique users in cookie-based server data. It is important to note that Yahoo! and DoubleClick did not participate in this study with comScore. This study by no means implies that Yahoo! or DoubleClick publish server data without adjusting for the overstatement caused by cookie deletion.

The results of the study reveal that approximately 24 percent of U.K. computer users clear their first-party cookies in a month (or have them cleared by automated software), with an average of 4.2 different cookies being observed for the same site within this user segment.

Using the comScore U.K. home and work sample as a base, an average of 2.4 distinct cookies was observed per computer for Yahoo! This finding indicates that, because of cookie deletion, a server-centric measurement system which uses first party cookies to measure the size of a site's Unique User/Browser audience will typically overstate the true number of unique visitors by a factor of up to 2.4X, which is to say an overstatement of up to 140 percent. The potential for overstatement by ad-server measurement systems is even greater: the study found that an ad-server system which uses third party cookies to measure the reach and frequency of an online ad campaign will overstate reach by a factor of up to 5.1x and understate frequency to the same degree. The actual magnitude of the overstatement depends on the frequency of visitation to the site or exposure to the campaign.

The relative accuracy of site-server data versus panel data for measuring Web site audiences has been hotly debated for some time, with server-based Unique User/Browsers metrics often being quoted as higher than the unique visitor numbers provided by panel data. The results of the comScore study show that, without significant and careful adjustments for cookie deletion, site-server Unique User/Browsers numbers can be easily misused to significantly overstate the number of unique visitors to a site and, as such, are simply not a reasonable surrogate for measuring the true number of people that visit a site.

In the U.S., the Internet Advertising Bureau (IAB) has recently issued guidelines that stress that client-initiated counting of Web site audiences is crucial: "These guidelines rely on the central concept that counting should occur on the client side, not the server side, and that counting should occur as close as possible to the final delivery of an ad to the client." The full IAB Audience Reach Measurement Guidelines can be downloaded at http://www.iab.net/media/file/Audience_Reach_Guidelines.pdf

Introduction to comScore

For nearly a decade, comScore has served as an industry-leading provider of insight into Web-wide behaviour and Internet users' attitudes. comScore derives its information and analysis from a representative panel of more than two million Internet users worldwide who have provided explicit permission for comScore to install its patented measurement technology on their computers, and through a patented data collection system, allow comScore to monitor their online browsing, buying and other transactional activity across the entire World Wide Web.

comScore panelists also participate in attitudinal research by completing targeted questionnaires provided by comScore, which allows comScore to provide a fully integrated understanding of online behaviour and its attitudinal drivers. Armed with this information, comScore provides more than 1,200 clients worldwide with actionable information and analysis that help improve business decision-making.

Cookie Overview

To clearly understand how comScore is able to evaluate consumers' cookie management practices, it is important to have a baseline perspective of how cookies work.

What is a Cookie?

Cookies are small text files stored on a user's computer that contain a collection of name-value pairs designating different types of information for that user. These text files are associated with a specific domain (e.g. aol.com or amazon.com, etc.), and can only be accessed or modified by that specific domain.

The domain may use the cookie to store a variety of information. Domains have full discretion over the type of information stored and the number and types of name-value pairs used to organise that information. One of the name-value pairs is used to identify a browser so that a repeat visitor using that browser is recognised. All name-value pairs stored by a specific domain are typically stored in a single cookie file in a user's browser "cookie store," which is a specific location that the browser uses to store cookies.

Browser Applications Manage Cookies

Cookies are objects used by the browser application, not the operating system, the ISP, or the Internet. Cookie stores are places where the Internet Explorer, Firefox or other browser software store information requested by Web sites and permitted implicitly or explicitly by Web users.

Importantly, each browser maintains a unique cookie store. Internet Explorer and Firefox maintain separate cookie stores. So, a single user who accesses the same domain using two different browsers will have two separate cookies—one for each browser (the AOL Proprietary browser uses the same store as IE). Independent cookie stores also exist for each Windows account or Windows log-in. For example, two people sharing an XP computer with distinct log-ins will have independent cookie stores.

Cookies are Transactional Objects

Cookies are dynamic objects that are routinely read and modified by sites as users interact with content. On each page request, the site's server will ask the browser to deliver any cookie information for that site. This can be termed the "get cookie" event.

If a cookie is present in the active cookie store for the domain and has not expired, the browser will return all information stored in the cookie file (cookies can be set to a specific page or location, but this is not common—cookies are usually associated with a specific domain). This action typically preserves any unique identifier passed to the site-server by the browser.

If a cookie is not present in the active cookie store or has expired, no name-value pair is returned to the site from the browser during the "get cookie" event. The site will then typically request that a new version of the cookie be set by the browser (the "set cookie" event). The new request will typically require the site to establish a new unique identifier.

If a browser is configured to reject cookies, no name-value pairs will be found during the "get cookie" event. The site may still initiate the "set cookie" event, but the browser will not store this information.

Cookie Applications

There are no rules or standards for how sites may implement cookie tracking beyond the HTTP protocol. This leads to widely varying practices for similar purposes and a wide range of applications. The most common application allows the retention of users' log-in information, or configures the site to "remember" the user each time he / she returns. Another common application is to retain user preferences, carrying prior configuration settings into subsequent sessions.

Cookies are also used by extended cross-site networks involved with content that appears on a page, most notably advertising networks that deliver ads. Extended networks use cookies associated with specific objects on the page delivered under a third-party domain. These applications allow for tracking ad impressions across different sites and, in some cases, inform the decisions of what ad should be delivered.
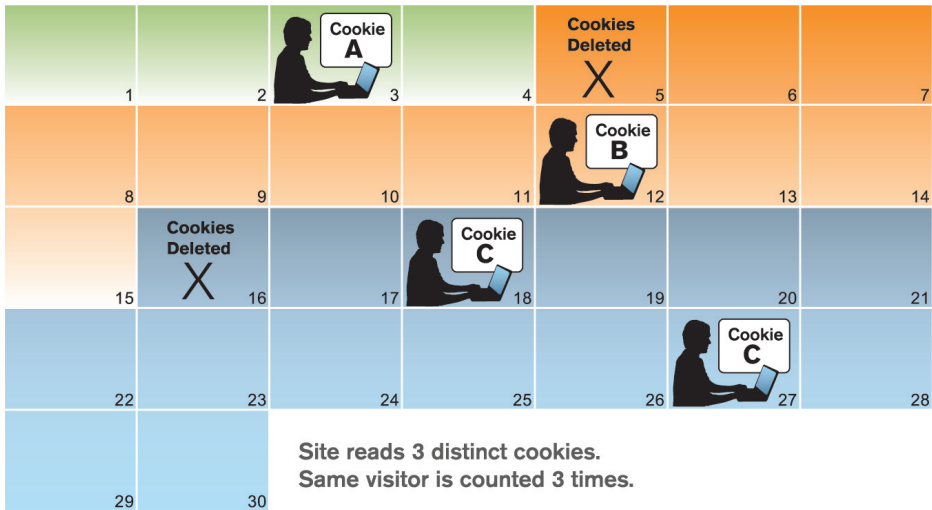
Cookie Deletion

Cookie deletion refers to the removal of cookies from a user's computer.

Cookie deletion may occur when:

- Users manually delete cookies from their user files
- Users delete cookies using browser functions such as 'Internet Options' in Internet Explorer
- Users run security protection programs that expunge cookies

Users may also enable their Web browser settings to reject cookies. The Internet Advertising Bureau ("IAB") has published research showing that 12 percent of users reject cookies. While this dynamic serves to increase the overstatement of unique visitors in site-server logs, it should be noted that browsers that were set to reject cookies were not included in this comScore study.

The key impact of cookie deletion is that a single PC user may be counted as multiple visitors by server-based counting methods. The following example illustrates how a single user who deletes his cookies twice during the course of one month and visits a site four times, would register three unique cookies in the site-server log data and therefore be over-counted as three unique visitors to that site.

Cookie
A

Cookies
Deleted
X

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Cookie
B

| 8 | 9 | 10 | 11 | 12 | 13 | 14 |

Cookies
Deleted
X

Cookie
C

| 15 | 16 | 17 | 18 | 19 | 20 | 21 |

Cookie
C

| 22 | 23 | 24 | 25 | 26 | 27 | 28 |

| 29 | 30 |

**Site reads 3 distinct cookies.
Same visitor is counted 3 times.**

First-Party vs. Third-Party Cookies

Cookies associated with a site delivering content directly requested by the user are known as first-party cookies. Such cookies are typically used to directly improve the user experience with the site, and, to some extent, the user knowingly leverages these cookies when they intentionally navigate to the site.

Third-party cookies typically operate in the background, associated with objects delivered within the context of a larger Web page, but not directly requested by a user. These cookies may be associated with advertising, embedded content, hosted-content, or rich media applications managed by a third-party domain. Third-party cookies may be set by intermediate activity occurring between rendered page views, such as a request for an advertisement that appears on the page that is served by a third-party. Many applications of third-party cookies provide means for tracking activity across a broad network.

Many third-party cookies are deemed "tracking cookies", a term that carries with it the stigma of privacy risk. As such, many automated cookie management applications will flag or automatically delete cookies that have been determined to be tracking cookies.

Cookie Overview Links

Additional information on cookies, their applications, and related technical detail may be found at the following locations:

http://en.wikipedia.org/wiki/HTTP_cookie

http://www.howstuffworks.com/cookie.htm

http://www.cookiecentral.com/faq/

Study Methodology

Overview

The comScore study aims to determine the degree to which individual web users may be over-counted when measured by the values of unique identifiers established by cookies. The objective is to determine the overall rate at which Internet users reset their cookies. The unit of analysis is the individual user (i.e. the consumer) and not a specific Web site or cookie.

There are generally two types of unique identifiers based on cookies:
1. Log-in cookies that reflect the unique cookie identifier verified by user log-in
2. Passive cookies that reflect the unique cookie identifier passively set and maintained by a site without user log-in or verification.

The core distinction between these two types of unique cookie identifiers is how the site reacts when the cookie is not found on a page request. For log-in cookies, the site will either deliver a generic form of the site, or prompt the user to log in, after which it will reset the cookie identifier with that user's unique identifier value. This value will be consistent over time, derived from the user's account. Passive unique cookie identifiers lack the benefit of a verification event to re-establish a user's unique identifier. If the site does not find a value for the passive unique identifier on page request, it will establish and set a new value.

This comScore study evaluates the persistence of passive unique cookie identifiers over time to estimate the overall rate of cookie reset activity. As noted earlier, computers in the comScore panel which are set to reject all cookies were excluded from the study.

Data Collection

In general terms, comScore's core audience measurement technology observes all open Internet requests. A typical page or object request will include all associated cookie information, termed here as the "get cookie" event. The comScore technology can be configured to extract specific name-value pairs from the cookie information included in these events. All observations of specified name-value pairs are then stored along with a panelist identifier and a timestamp. These cookie name-value pair observations are collected for all defined name-value pairs for all active panelists.

For purposes of this study, comScore analysed a passive first-party unique identifier cookie for a major Web property (Yahoo!) and a passive third-party unique identifier cookie for a major ad server (DoubleClick). Each cookie is believed to be representative of cookies delivered to the U.K. Internet population and each reaches well in excess of 20 million Internet users per month. These two cookies were selected to maximise reach across the Internet user base to provide as complete a view as possible of consumers' overall cookie management behaviour. The study is based on activity observed within approximately 60,000 home and work computers during the month of March 2009. This sample was statistically weighted to represent the U.K. home and work Internet user population along key geo-demographic variables.

Cookie Duplication & Preservation Methodology

The error in estimates of unique visitors derived from passive cookie identifiers is proportional to the degree to which there are multiple identifiers for an individual user. Any case where an individual user delivers multiple cookie identifiers to the same Web site will inflate the counting of that individual as a unique person. The degree of overestimation depends on how many cookie IDs are delivered to the Web site for that single user.

The aggregate error in unique visitor estimates from site-server data depends on visitation frequency to the site and on the time frame. At the one extreme, a site with only one-time visitors would have exactly one cookie per visitor and, as a result, the number of unique cookies equals the number of unique users. Over the course of a month, an individual user may have many distinct cookie IDs, but over the course of a single week, that same the number of distinct IDs is likely to be lower, and so is the overstatement. Conversely, a single user could be over-counted many more times over a one year period.

This study aims to measure the extent to which comScore observed multiple cookies per machine for the same site over the course of the month of March 2009. To assess the "uniqueness" of each of the cookies in the study during the month, the full time series of observed identifier values was evaluated for each individual comScore panelist. Within this time series, the baseline assumption was that the initial cookie identifier would be preserved throughout the month; the first value observed would equal the last value observed. Should the base assumption be satisfied, the conclusion that cookie-based tracking is a flawless measure of unique visitors would be accurate.

If a new identifier value appeared in this time series and persisted for the remaining observations, the initial cookie was determined to have been not preserved. If an individual time series showed subsequent changes in the cookie value, these changes were tabulated, yielding an estimate of the number of distinct cookie identifier values delivered to the Web site by that individual panelist.

One distinct pattern did emerge during analysis that warranted treatment. Because cookie stores are affiliated with specific browsers, it is possible to deliver multiple cookies to a Web site from a single computer, should a user access the site using different browsers. In a small subset of cases oscillating patterns were observed, where two or more values would alternate throughout the time series for an individual panelist. Any panelist displaying an oscillating pattern was classified as "preserved," since cookies were observed to be persistent despite their duplication.

This treatment yielded two groups: panelists whose cookie identifiers were preserved, and those whose cookie identifiers were not preserved. The relative size of these groups for each cookie provides a measure of overall consumer propensity to preserve cookies and the unique identifiers within them.

Within the non-preserved group, the tabulation of distinct cookie observations per panelist provides a measure of the impact of duplication error on aggregate unique visitor estimates. Within the preserved group, the site-server would count each computer with multiple cookies as multiple unique visitors.as multiple unique visitors.

Behavioural Cookie Deletion Analysis

First-Party Cookie Deletion

Using the total comScore sample as a basis, an average of 2.4 distinct first-party cookies were observed per computer for the site being examined. This indicates that Web-site server logs that count unique cookies to measure unique visitors are likely to be exaggerating the size of the site's audience by a factor as high as 2.4, or an overstatement of 140 percent. The actual magnitude of the overstatement will depend on the frequency of visitation to the **site and the length of the period of measurement**. The more frequently the site is visited, the greater the degree of over-statement.

First-Party Cookies

	Percent of PCs	Average Cookies per PC	Percent of Total Cookies
All PCs	100.0%	2.4	100.0%
Preserved*	76.5%	1.8	52.9%
1+ Resets	23.5%	4.2	47.1%
1 Reset	14.0%	2.0	12.9%
2 Resets	4.0%	3.0	5.5%
3 Resets	1.6%	4.0	3.0%
4+ Resets	4.0%	12.8	25.8%

* Preserved designation includes PCs where two or more distinct cookie values were observed alternating throughout the observation period. Such oscillating patterns reflect the use of multiple browsers, or multiple accounts on a PC, and do not reflect reset events.

Approximately 24 percent of U.K. Internet users cleared their first-party cookies during the month. Within this user segment, the study found an average of 4.2 different cookies for the site. Among those computers where cookie resets occurred, it was most common to observe one reset (14 percent of all PCs). However, for the 4 percent of computers on which four or more cookie resets occurred, the average number of cookies observed was 12.8 and these cookies accounted for 26 percent of all cookies observed in the study. In other words, a relatively small segment of PC users engaging in "serial cookie deletion" has the potential to dramatically inflate cookie-based site-server log data.

Third-Party Cookie Deletion

comScore's analysis of third-party cookies revealed an average of 5.1 distinct cookies per computer in the month, indicating an even higher rate of overstatement than for the first-party cookies. For those computers where at least one cookie reset occurred, the number of third-party cookies observed (7.7) was higher than first-party cookies (4.2).

Third-Party Cookies

	Percent of PCs	Average Cookies per PC	Percent of Total Cookies
All PCs	100.0%	5.1	100.0%
Preserved	67.2%	3.8	45.8%
1+ Resets	32.8%	7.7	54.2%
1 Reset	12.9%	2.0	6.2%
2 Resets	5.1%	3.0	3.7%
3 Resets	3.0%	4.0	2.9%
4+ Resets	11.8%	15.3	41.4%

Deletion rates for third-party cookies are even higher than deletion rates for first-party cookies: 33 percent of U.K. Internet users cleared their third-party cookies during the month. Users may be more likely to selectively remove third-party cookies, which are generally deemed more invasive and less useful than first-party cookies, while preserving their first-party cookies. "Serial deleters" made up an even larger percentage of those who deleted third-party cookies: the 12 percent of computers where four or more third-party cookie resets occurred accounted for 42 percent of all cookies, an average of 15.3 cookies per PC.

The resulting degree of overstatement of reach will vary with the frequency of exposure to the campaign and the length of time of the campaign. The higher the frequency, the higher the degree of overstatement; the longer the campaign, the greater the vulnerability to over-statement.

Prior Research into Cookie Deletion

It should be noted that previous independent studies have also found high rates of cookie deletion. Specifically, Belden Associates (2004), Jupiter Research (2005) and Nielsen/NetRatings (2005) observed at least 30 percent and as many as 47 percent of users deleting their cookies in a month. A more recent study conducted by Forrester in the U.S. in 2008 found that 50% of Internet users deleted their cookies. The Belden, Jupiter and Forrester studies relied on a survey research methodology while the Nielsen/NetRatings study was based on behavioural research:

http://www.poynter.org/column.asp?id=31&aid=64373

http://www.jupitermedia.com/corporate/releases/05.03.14-newjupresearch.html

http://publications.mediapost.com/index.cfm?fuseaction=Articles.san&s=28883&Nid=12855&p=297686

http://www.netratings.com/press.jsp?section=ne_press_releases&nav=1#

http://www.forrester.com/rb/Research/crumbling_cookie/q/id/52132/t/2

Belden's conclusions from its study are particularly relevant to the current comScore study:

- Log-file data with respect to unique visitor counts are wrong.
- Sites have far fewer visitors than reported, but much greater frequency.

The Interactive Advertising Bureau (IAB) in the U.S. also published its "Audience Reach Measurement Guidelines," which highlight the pitfalls of server-side counting for unique audience counts. The guidelines explicitly state that "counting should occur on the client side, not the server side, and that counting should occur as close as possible to the final delivery of the ad to the client." The complete document can be accessed at the following location: http://www.iab.net/audiencemeasurement

Summary of Findings

comScore's study of cookie deletion rates in the U.K. revealed the following key findings:

- Approximately 24 percent of Internet users delete their first-party cookies in a month. Third-party cookie deletion rates are even higher than first-party deletion rates, with 33 percent of Internet users deleting their third-party cookies in a month.

- "Serial cookie deleters" have a profound impact on inflating site-server logs because they account for a small percentage of computers, but a large share of observed cookies, e.g. the 12 percent of machines deleting 4 or more first-party cookies accounted for 41 percent of all first-party cookies, and the 4 percent of machines deleting 4 or more third-party cookies accounted for 26 percent of all third-party cookies.

- Because of the high rate of cookie deletion, a server-centric measurement system which uses cookies to measure the size of a site's visitor base will typically overstate the true number of unique visitors by a factor of up to 2.5x.

- Similarly, the study found that an ad-server system which uses cookies to track the reach and frequency of an online campaign will overstate reach by a factor of up to 5.1x and understate frequency to the same degree.

Implications

The implications of cookie deletion are far-reaching, affecting both site-centric analytics and ad-server analytics, and ultimately leading to inaccuracies for those choosing to rely solely on server-based Unique User/Browser data for weekly or monthly audience numbers.

Cookie deletion leads to the following inaccuracies in site-centric measurement when Unique User/Browser numbers are used a proxy for unique visitors:

- Overstatement of unique visitor counts
- Understatement of repeat visitor counts
- Understatement of conversion rates

Cookie deletion leads to the following inaccuracies in ad server measurement when Unique User/Browser numbers are used a proxy for unique visitors:

- Overstatement of reach
- Understatement of frequency

Solution

The frequent disparity between Web site server-based site analytics data and panel-based audience measurement data has long been the Achilles Heel of digital media measurement. Because the two measurement techniques have different objectives, they employ different counting technologies, which often result in differing metrics that can cause confusion and uncertainty among publishers and advertisers.

With the introduction of Media Metrix 360, comScore implemented a 'panel-centric hybrid' solution to digital audience measurement, by blending panel and server methodologies into a 'best of breed' approach that provides a direct linkage and reconciliation between the server and panel approaches. This approach combines person-level measurement from the 2 million person comScore global panel (60,000 in the U.K.), with server-side metrics in order to account for 100 percent of a Web site's audience including all at work and mobile usage.

Participating companies place web beacons on their content and ads, and these calls are recorded by comScore servers every time content is accessed. comScore is able to view these calls within its global panel in addition to measuring all (i.e. a census) of the direct server calls. This unique perspective allows comScore to validate that the beacon calls are measuring activities consistent with industry-accepted audience measurement methodologies.

The panel-centric hybrid methodology that drives Media Metrix 360 is built on the same foundation as comScore's panel-based measurement with people using the internet at the core, and is therefore entirely consistent with Audience Reach Guidelines issued in December 2008 by the IAB in the U.S. The addition of census beacon data to panel data requires extensive validation and reconciliation in order to fully define a hybrid unique visitor metric. Beacon counts are properly filtered and validated to remove non-human traffic, international (out of market) traffic, non-eligible URLs, and then processed through the application of Media Metrix page view and editing methodology (i.e., non-essential domains, removing any incidences of multiple beacons per page, etc.). Once this filtering process is complete and a site is officially hybrid, both page views and unique visitors can be calculated. Hybrid page views are essentially the sum of filtered beacon counts.

Hybrid unique visitors are more involved in their calculation and may be conceptualized as:

$$UV(hybrid) = \frac{Total\ Census\ Cookies}{Cookie\ Deflation\ Factor}$$

where the Cookie Deflation Factor may be expressed as:

$$f(\alpha, \beta, \mu)$$

where, α is total usage, β is visitation frequency and μ is usage intensity. The elements in this usage rate adjustment factor take on functional forms of increasing complexity based on comScore's experience reconciling census beacon data and panel measurement.

This equation accounts for the fact that there are multiple machines per person households, multiple machines per person across home and work locations, multiple persons per machine, and that there are browser and operating system dependencies for cookie deletion factors, amongst other considerations, that need to be accounted for in the unique visitor calculation. It is possible to empirically derive values for the various terms of this equation through direct observation from the comScore panel.

The beauty of the panel-centric hybrid technique is that the census cookies and site-centric data, on the one hand, and the person-level detail provided by direct person measurement on the other hand, each serve to address inherent shortcomings of the other. Thus, integration of census cookie-based server data with panel-centric measurement yields the industry's most accurate, reliable, and robust measure of Unique Visitors.

As a result, in the comScore Media Metrix 360 service, the number of pages metrics will correspond to the edited Web site server data while the number of visitors will be truly person-based and will reflect an integration of the server data and the panel data.

Finally, there is a measure for "Unique Visitors" that is people-based and which can be accepted by all sides in digital media measurement. comScore will submit a closed white paper to ABCe with a fuller description of the methodology used to create these measures using comScore's Media Metrix 360 solution, for review by the Internet Technical Group.

FOR FURTHER INFORMATION, PLEASE CONTACT:

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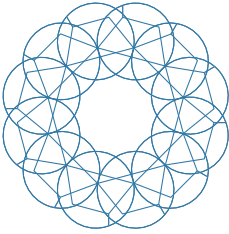comScore, Inc.
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STAND UP AND BE COUNTED

To take advantage of Media Metrix 360 hybrid measurement, visit the comScore Direct self-service portal and start the beaconing process today:

www.comscoredirect.com

If you're an Omniture client, you may leverage your existing beacons for Media Metrix 360. Contact your Omniture representative for details.

To learn more, please visit www.comscore.com

The limitations of using Web site server data in isolation have long been acknowledged by the industry. Counting cookies provides useful information, but without correction for cookie deletion this methodology can lead to potential overstatement in audience counts and as a consequence has been traditionally unable to arrive at an accurate person-level solution.

As submitted to ABCe, herein is our proposal to resolve the issue of panel versus site server data once and for all, and arrive at an industry agreed-upon standard for the measurement of unique visitors.

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