Another contribution to *the science beneath the art*™ from the Commission on Public Relations Measurement and Evaluation at the Institute for Public Relations

"A New Paradigm for Media Analysis: Weighted Media Cost"

An Addendum to: "Advertising Value Equivalency (AVE)" By: Bruce Jeffries-Fox

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A New Paradigm for Media Analysis: Weighted Media Cost

Angela C. Jeffrey, APR, ended up in the research world by accident, but has become one of its most passionate advocates. After two decades in PR and advertising with JCPenney and major agencies, she started Jeffrey Communications. Along the way, she snagged several PRSA *Silver Anvils* and IABC *Gold Quills*. In 1996, she appealed to her programmer brother to build a DIY measurement system called *PRtrak*, and obtained the rights to sell data "a la carte" for the first time from giants Nielsen, Arbitron, SQAD, etc. In 2002, she sold PRtrak to SDI, an international analytics firm. Heading SDI/PRtrak, Jeffrey worked with SDI researchers toward standardizing PR measurement metrics and correlating PR outputs with business outcomes. In 2005, PRtrak was acquired by VMS, where Jeffrey now serves as VP Editorial Research. In 2006, Jeffrey was a finalist for *PR News "Measurement Person of the Year"* and VMS shared in Porter Novelli's win of the *"Jack Felton Golden Ruler Award"* for excellence in PR measurement. Jeffrey graduated summa cum laude from SMU with a BFA/Journalism and BBA/Marketing; is on the SMU Communications & P.A. Advisory Board, and is a member of the IPR Commission for PR Measurement & Evaluation.

Bruce Jeffries-Fox, APR, has recently retired as president of Jeffries-Fox Associates, which specialized in PR research, and moved to the sunny beaches of South Jersey. For 30 years, Jeffries-Fox implemented studies for many major corporations, non-profits, government agencies and PR agencies where he developed several ground-breaking measurement techniques. Previously, he served as Executive Vice President of *InsightFarm*, the country's largest media analysis company. Before that he was PR Research Director at AT&T for ten years, supporting its domestic and international PR teams. His research has supported the development and evaluation of PR programs targeted to a broad range of stakeholder groups. Jeffries-Fox received both PR Week's *Proof Award* and a *CIPRA* for his pioneering work in understanding how news coverage and advertising interact to cultivate attitudes and behavior. He was also the first-ever winner of the *David Ogilvy Advertising Research Award*—the industry's highest research honor. Jeffries-Fox has written numerous articles on PR research and spoken nationwide; is a past Chairman of the Institute for Public Relations' PR Measurement and Evaluation Commission; is Treasurer of the PRSA Foundation and is on the Board of Advisors for PR News.

Brad Rawlins is an Associate Professor and Chair of the Department of Communications at Brigham Young University. He teaches courses in public relations, research methods, and ethics. He has spearheaded efforts to assess and measure the learning outcomes of the program and has developed an undergraduate course on PR research and measurement. He earned his B.A. in Communications from Washington State University, and his Master's in Public Relations and Ph.D. in Mass Communication from the University of Alabama. He spent eight years teaching at James Madison University prior to his appointment at BYU in 2000. His current research agenda includes measuring transparency, prioritizing stakeholders, exploring the ethics and moral reasoning of PR practitioners, and measuring trust. He received the Pathfinder Award from the Institute for Public Relations in 2003. Rawlins is a member of the Commission on Public Relations Measurement and Evaluation.

Gary Getto was a senior executive at SDI/PRtrak prior to being acquired by VMS in 2005. Today, he leads VMS' efforts to measure and analyze the combined impact of news coverage and advertising communications on key business metrics, such as sales or product preferences. He has been primarily responsible for the ground-breaking work done by VMS in linking editorial coverage to business outcomes through "Share of Discussion." Getto has extensive background in product development, strategic planning and sales/marketing, especially in the publishing and direct response industries. He holds a B.S., Mechanical Engineering from Lehigh University and a Masters in Management Science from Stevens Institute of Technology.

ABSTRACT

Over the past two decades, Advertising Value Equivalency (AVE) has been correctly denounced as a measurement technique. The many shortcomings of this old methodology will be described at length within this paper. However, recent studies yield evidence that using the cost of media space and time provides a very useful evaluation of the *news medium itself* in which a story resides, similar to the way the cost of real estate impacts the overall value of a house. The cost of media space and time appears to improve correlations between media coverage and business outcomes demonstrably over other popular quantitative methods, such as story counts and audience impressions. This paper provides four case studies exploring this concept; calls for a new name for this valuable data, ***"Weighted Media Cost,"*** and provides a completely new paradigm for its proper and effective use.

INTRODUCTION

The media analysis practice of using Advertising Value Equivalency (AVE) data has a long history in the public relations industry, and has come under severe criticism in the past decade. AVE is essentially the practice of assigning a "value" to a news story by equating it to advertising costs, with the implication that the news story is somehow "equivalent" to an advertisement in terms of probable audience impact.

In 2003, the IPR Commission on PR Measurement & Evaluation published a white paper, **"Advertising Value Equivalency (AVE)"**[1] by Bruce Jeffries-Fox, citing some of the benefits of AVE, but mainly recommending against its use. The Jeffries-Fox paper and other Commission documents[2] discouraged the use of AVE in favor of other forms of media analysis such as Story Counts and Audience Impressions for Quantitative scoring, and Tone, Message, Prominence, Dominance, Accuracy, etc., for Qualitative analysis.

Furthermore, the Commission has categorized PR measurement methodologies into "Outputs, Outtakes and Outcomes,"[3] with media analysis falling merely into the first,

[1] By Bruce Jeffries-Fox, this white paper is available at www.instituteforpr.org.
[2] Guidelines for Measuring the Effectiveness of PR Programs and Activities," 1997, 2003, primarily by Dr. Walter Lindenmann; available at www.instituteforpr.org.
[3] According to **The Dictionary of PR Measurement and Research** by Dr. Don Stacks:
Outputs – m. what is generated as a result of a PR program or campaign that impacts on a target audience or public to act or behave in some way – this is deemed important to the researcher (also known as a "judgmental sample"); the final stage of a communication product, production, or process resulting in the production and dissemination of a communication product (brochure, media release, Web site, speech, etc.); s. the number of communication products or services resulting from a communication production process; the number distributed and/or the number reaching a targeted audience; s. the dependent variable in research.
Outtakes – m. measurement of what audiences have understood and/or heeded and/or responded to a communication product's call to seek further information from PR messages prior to measuring an outcome; audience reaction to the receipt of a communication product, recall and retention of the message embedded in the product, and whether the audience heeded or responded to a call for information or action within the message; s. the dependent variable in research.

and least important, bucket. Thus, the decades-old practice of wracking up a big AVE dollar score and claiming it as a true campaign "outcome" has appropriately been branded "PR witchcraft."[4]

Recently the Institute for Public Relations categorically rejected the practice of equating earned media with purchased advertising space because there has not been any empirical evidence that supports this practice. The writers of this addendum to the Jeffries-Fox paper agree with all the problems cited with AVE as it has been historically practiced. However, the question to be explored now is whether recent evidence warrants a fresh look *at the metric itself* (the cost of media space and time) as opposed to its historic use as an *"equivalency" between news and advertising in terms of value.*

WHY IT MATTERS

Despite all the bad press associated with AVE, about half of all who measure their PR results still utilized it[5] as of 2003. In 2009, a global survey on a sample of 520 PR professionals carried out by Benchpoint™ for AMEC, the International Association for the Measurement and Evaluation of Communication and the Institute for Public Relations[6], placed AVE in third place as most-often utilized measurement method (up from fifth place in 2004) … with press clippings and internal reviews being in positions one and two. Clearly, there is something about the practice of AVE that has been resistant to eradication – most likely because marketing-oriented clients continue to need some kind of a dollar metric.

In the past seven years, extensive research executed by a major media analysis firm[7] on millions of clips has yielded hard evidence that the data for the cost of purchasing media space and time used to evaluate the medium indeed brings valuable information to comparative media analysis. As we will demonstrate in four case studies, costs for purchasing media space and time seem to clarify the relationship, and improve correlations between media coverage and business outtakes and outcomes. These findings have been compelling enough to result in the following quote by Bruce Jeffries-Fox himself in ***Ragan's Media Relations Report[8]:***

> **"[The PR Industry] may have thrown the baby out with the bathwater" when it jettisoned AVE as a measurement method.**

Outcomes – m. quantifiable changes in awareness, knowledge, attitude, opinion and behavior levels that occur as a result of a public relations program or campaign; in effect, consequence, or impact of a set or program of communication activities or products, and may be either short-term (immediate) or long term; s. the dependent variable in research.

[4] Ragan's Media Relations Report, October 1, 2001 – "Ad Value Equivalency comes out of the shadows, but is it still considered PR witchcraft?"

[5] Attitudes Towards Public Relations Measurement & Evaluation – a survey done for PR News by David Michaelson of David Michaelson & Company LLC, sponsored by PRtrak.

[6] Global Survey of Communication Measurement 2009 by Benchpoint can be accessed at http://www.amecorg.com/images/public/Global-Survey-Communications_Measurement-2009.pdf.

[7] PRtrak/SDI actually pioneered this research in the late nineties. It continues today under the auspices of VMS, which purchased the PRtrak division of SDI in 2005.

[8] Ragan's Media Relations Report, October 1, 2001 – "Ad Value Equivalency comes out of the shadows, but is it still considered PR witchcraft?"

The research presented in this paper is an adjunct to that which was published in two recent Institute for Public Relations Commission on PR Measurement & Evaluation white papers, **"Exploring the Link between Media Coverage and Business Outcomes"** and **"Exploring the Link between Share of Media Coverage and Business Outcomes," by Angela Jeffrey, Dr. David Michaelson and Dr. Don Stacks**[9]**.** These papers offer a number of case studies as evidence that a relationship exists between media coverage and business outtakes and outcomes, and that the relationship is clearest when viewed through the filter of competitive media analysis. In both papers, the highest correlations were seen when costs for purchasing media space and time data was used rather than story counts or audience impressions as the quantitative base for scoring.

This evidence now begs the question: *if we're getting better results with costs for purchasing media space and time data, should we indeed separate the baby from the bathwater and set new parameters for its proper use*? *And how can we encourage the use of story counts or audience impressions if research shows they are inferior for correlations work*?

THE PURPOSE OF THIS PAPER

The purposes of this paper are threefold:

1. Present new research that demonstrates the increased clarity of correlations between media coverage and business outcomes when media cost data is factored in;

2. Establish a new term for this data – Weighted Media Cost – to distance it from Advertising Value Equivalency and its history of misuse;

3. Demonstrate a new paradigm for the proper use of Weighted Media Cost for optimal media analysis.

REVIEW OF PAST FINDINGS

In **"Exploring the Link between Volume of Media Coverage and Business Outcomes,"**[10] Jeffrey, Michaelson and Stacks looked at whether or not media coverage makes any real difference to business results, and if so, what role volume plays. In three case studies, they demonstrated a strong link between the two whether looking at volume alone, tonality-refined volume and message-refined volume:

- Volume Alone – A straightforward, neutral, non-competitive campaign comprised of 47,000 clips that stressed the importance of mammograms drove patients to doctors' offices for medical procedures at a Pearson Product

[9] Published by the Institute for Public Relations Commission on Public Relations Measurement and Evaluation, 2006; www.instituteforpr.org.

[10] Published by the Institute for Public Relations Commission on Public Relations Measurement and Evaluation, 2006; www.instituteforpr.org.

Moment Coefficient[11] correlation of r=.89. Mammogram procedures increased as the volume of press went up, and decreased as it went down.

- Tonality-Refined Volume – A damning news release that claimed cough medicines were ineffective caused sales to drop at unprecedented rates, and to rebound when the bad news eased up. Corresponding measures to this negative publicity included a 12% surge in physician visits for respiratory illness for the week the story broke, and competing allergy medicine sales soared - reflecting positive news about those medications in the same story. Thus, negative coverage volume appears to correlate inversely to desired outcomes, while positive news correlates directly.

- Message-Refined Volume – A study from Porter Novelli[12] illustrated how neutral-to-positive media coverage that simply mentions a brand, but does not deliver meaningful or accurate messages about that brand, had only modest correlations to sales (in this example, prescription volume for Oxytrol) (r=.51). On the other hand, eliminating all coverage except that which included at least one key message that resounded with the target audience saw correlations for Oxytrol soar to r=.97. (Note that not all 'key messages' resounded with this audience; only two actually improved correlations).

While these cases fall short of offering proof of cause between media coverage and business results, they do offer strong evidence that a relationship exists.

Working from the foundation that volume matters, and particularly tonality- and message-qualified volume, the next logical step was to consider the more real-world aspect of *competitive* media coverage, or *relative volume* among key players. In the second paper, **"Exploring the Link between SHARE of Media Coverage and Business Outcomes,"** the authors looked at Share of Discussion (SoD) and its impact on the effectiveness of public relations campaigns.[13] Share of Discussion is defined as *"The **quantity and quality** of an organization's non-paid media compared with that of its competitors."*[14]

The cases below compare quality-refined competitive client media coverage with business outcomes. The studies all involved earned media placed by PR professionals as well as over-the-transom news; major campaigns with large numbers of clips; national or regional campaigns as opposed to local and media coverage that preceded business results. The studies also controlled for paid media and other marketing variables.

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[11] (r=.X) - The Pearson Product Moment Coefficient is a measure of association that describes the direction and strength of a linear relationship between two variables; it is usually measured at the interval or ratio data level. Definition is from "The Dictionary for Public Relations Measurement and Research," by Dr. Don Stacks of the University of Miami, available through the Institute for Public Relations, www.instituteforpr.org. Pearson Correlations were preferred by the authors of these studies, since the qualitative data in social science research is inherently less precise.

[12] Study was entitled PRoof© - Porter Novelli Key Message Assessment & Optimization" for Watson Pharma, Inc. on OXYTROL. VMS executed the work, but is not mentioned in the award. http://www.instituteforpr.org/awards/2006_golden_ruler_winner.

[13] "Public Relations Effectiveness" is defined as *"the degree to which the outcome of a public relations program is consonant with the overall objectives of the program as judged by some measure of causation* in "The Dictionary for Public Relations Measurement and Research."

[14] "The Dictionary for Public Relations Measurement and Research."

- Comparing Correlations with and without Share of Discussion – a major media campaign for a regional hospital yielded very high Pearson correlations (r=-.97) when SoD scores were compared with Customer Preference Survey scores. But, they were much lower (r=.51) when the hospital's coverage in isolation was compared with survey scores.

- Share of Discussion in Practice: Pharmaceuticals – A hormone-replacement therapy brand was suffering enormous sales losses despite all marketing variables remaining stable and a tripling of publicity. In actuality, the product's SoD had dropped precipitously due to the entry of herbal supplements, which multiplied the entire product category by five. Share of Discussion precedes sales in this case study at a correlation of r=.84, which has been consistent enough for sales forecasting.

- Share of Discussion in Practice: Business-to-Business - A manufacturer of business-to-business computer software and analytics found that its Share of Discussion tied directly to its sales-closing ratio for the sales force with a one calendar quarter lead at a correlation of r=.98.

- Share of Discussion in Practice: Packaged Goods – A major cookie and cracker manufacturer had no idea why its sales forecast was missed by 9.5% until SoD scores were input into its very sophisticated market mix model. Negative editorial discussion about trans-fatty acids had clearly contributed to the downturn, so SoD is now a permanent part of its sales forecasting model.

These cases support the hypothesis that competitive share of quality-refined media coverage (Share of Discussion) has a strong link to business outcomes; and, in most cases, this link is stronger than what was seen in non-competitive comparisons.

NEXT STEPS AND QUESTION TO BE EXPLORED

In the papers cited above, the authors wrote that while various combinations of media scoring techniques were used within the case studies presented, they had found correlations strongest when *costs of media space and time data* was factored in. The second paper concluded with a study in the Appendix entitled, **"Comparing Media Value, Audience Impressions & Article Counts with Outcomes."**

This paper will now look more deeply into this question: **Which quality-refined quantitative scoring technique offers the highest correlations to business outcomes between Story Counts, Audience Impressions and Weighted Media Costs?**

DEFINITIONS OF MEDIA COVERAGE VOLUME METRICS

To better understand the comparisons that follow, we will first review the main techniques for scoring clips:

Clip Counting – This is the most common and most basic way to measure media coverage volume. Articles are simply collected, sorted by subject or by date, and counted regardless of the size or quality of the story itself. Because Story Counts

offer no qualitative information, they can be severely misleading as a measure of success. According to a 2003 *PR News* survey, *"Attitudes toward Public Relations Measurement & Evaluation*[15]*, a* full 84% of respondents cited story counts as their main method of measuring. The 2009 Benchpoint Study shows they remain the most favored methodology worldwide.[16]

Audience Impressions – This is the second most commonly used quantitative method today, and consists of collecting print circulation figures, broadcast gross impressions and Internet "daily or monthly average visits," and totaling them up as an estimate of audience reached. Various permutations exist, such as multiplying circulation figures by estimated pass-along rates. The research presented below will show that using audience impressions to gauge effectiveness is sometimes more accurate than story counts (but not always) when correlating to outcomes. However, impressions can also mislead, since the size/duration of the story, the client's presence therein, and the quality of the placement itself, is not considered. In the 2003 survey mentioned above, 51% of respondents claimed using this method.

Ad Value Equivalency, AVE or Media Value – This is the third most commonly used method, and refers to the practice of multiplying the space or time occupied by a story by advertising costs and *using the resulting score as a campaign outcome as well as a direct comparison to advertising in terms of impact.* The actual term, "Media Value," was coined by PRtrak in 1990 as an attempt to distance the use of cost data from "equivalency with advertising," but the word "value" is still problematic. AVE or Media Value was cited as used by 45% of respondents in the 2003 PRtrak/*PR News* survey, and as 3rd most utilized metric in the 2009 Benchpoint international survey[17].

Weighted Media Cost – This is the new term proposed in this paper to reformulate the use of media cost data as a data point against which to correlate to outcomes. It will be defined as: *the practice of utilizing the cost of media to the broadcast time or print/internet space occupied by a client as an objective market proxy number for comparative analysis against historical performance, against objectives, or against competitors. The absolute number itself has no meaning or value beyond that of any index used for comparisons of any kind. Proper use includes the subtraction of all negative coverage; assigning costs to only the space or time occupied by an organization; using audited, negotiated media costs to the extent possible; and refraining from claims that WMC scores are outcomes of public relations campaigns. A score derived from Weighted Media Cost could be referred to as a* ***Weighted Media Cost Index****, especially when utilized without dollar signs.*

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[15] "Attitudes toward Public Relations Measurement & Evaluation," a survey sponsored by PRtrak and published by PR News; designed and executed by David Michaelson, Ph.D, of David Michaelson & Company, LLC, and October, 2003. www.instituteforpr.org.

[16] Global Survey of Communication Measurement 2009 by Benchpoint can be accessed at http://www.amecorg.com/images/public/Global-Survey-Communications_Measurement-2009.pdf.

[17] Global Survey of Communication Measurement 2009 by Benchpoint can be accessed at http://www.amecorg.com/images/public/Global-Survey-Communications_Measurement-2009.pdf.

Qualified-Volume Measures – More progressive and accurate measures of media coverage volume include counting and comparing only those articles that have been "qualified" by factors such as:

- Tonality
- Prominence
- Target audience reached
- Contains key messages
- Contains accurate messages
- Contains messages placed within proper context
- Size or duration
- Dominance
- So on …

While qualified-volume scores will always be lower in absolute value than non-qualified, they usually correlate much better to business outcomes once quantitative factors are added in. In and of themselves, however, they can be too soft and subjective, and tend not to correlate to outcomes well at all.

Media Analysis Indices – In an attempt to marry the best quantitative measures (Story Counts, Impressions or Weighted Media Costs) with the best qualitative measures (Tone, Prominence, Message, etc.), more and more analysis firms are offering single-metric indices such as the *VMS Media Prominence Index*™, the *Delahaye Impact Score* and *Net Effect*, and the *Carma Favorability Rating System*. While no metric is perfect, Media Indices do go a long way toward quantifying coverage volume in qualitative terms that are meaningful, and certainly toward equalizing it for competitive analysis.

METHODOLOGY

The four case studies that follow compare Tonality-Refined Story Counts, Audience Impressions and Weighted Media Cost scores against business outcomes such as sales and survey results.

Each study was executed through an advanced linguistics, artificial intelligence tool with human-like text analysis capabilities, and double-checked by senior human analysts. Print, broadcast and Internet articles were imported into the artificial-intelligence system from LexisNexis, VMS and/or other electronic sources. Details include:

1. **Scoring/Counting** – each clip was first analyzed by **Tone** on a nine-point scale ranging from highly favorable to highly unfavorable, and then bucketed as Tonality-Weighted Story Counts, Audience Impressions or Media Cost scores.

2. **Clip Portions for Weighted Media Cost Scores –** Weighted Media Costs can't be figured without measuring the size/length of the relevant mention (since that's what 'weighting' refers to), so these studies assigned o*nly the portions of each clip that were actually 'owned' by each client organization for credit.* By "owned," we mean the portions of each story that were obviously generated by, or focused on, a particular company. If a story contains several competitors, credit is split among them according to the space or time

they occupy. If a company has a small passing mention, it is credited with only a few column inches or a paragraph, depending upon how the story laid out.

3. **Audience and Cost Data Utilized** - The audience and cost data used in these studies is from the VMS PRtrak database, which is updated quarterly, and is comprised of:

    a. Television and Radio:

        i. Audience Impressions – Gross Impressions from Nielsen and Arbitron – Average Quarter Hour for Adults 18+, Monday-Friday, Saturday and Sunday. TV data is configured by half-hour increment and Radio by official Daypart. See **Appendix A** for sample cost/impressions tables for a local-market TV and Radio station.

        ii. Media Costs - from SQAD Inc., the definitive media-cost forecasting bible of the advertising world. SQAD collects $7 billion-worth of actual media buys from agencies throughout the country, and establishes "true value benchmarks" for each time period, each quarter, and projects them forward. Media buyers subscribe to SQAD and utilize the cost benchmarks for negotiations. Thus, the SQAD data provides more precision in media valuation than the PR industry has ever had before. For more information, visit: www.sqad.com.

    b. Internet:

        i. Daily Average Visits – from comScore MediaMetrix, with a panel of more than two million people whose mouse-moves are tracked. Daily Average Visits compare directly with broadcast Gross Impressions, since both include first-time and returning visits during the defined time-periods.

        ii. Media Costs – from SQAD Inc. As with broadcast, SQAD obtains actual Internet media buys from participating agencies nationwide, and establishes banner-cost benchmarks against which negotiations begin. Costs are provided in 26 site categories such as Automotive, Finance, Community, etc. Working closely with SQAD and comScore MediaMetrix, VMS introduced "Media Costs" for the top 30,000 Internet sites in 2002 as an outgrowth of SQAD's work. See the exact algorithm in **Appendix B**. This algorithm was presented in 2002 to a gathering of about 35 top PR agency, research and measurement leaders in New York, and made available free of charge to all in an effort to standardize Media Costs in this new media category.

    c. Newspaper and Magazines:

        i. Circulation: Magazine and Newspaper circulation figures are provided by SRDS, American Newspaper Representatives and

BurrellesLuce. No readership pass-along rates or multipliers have been used.

ii. Media Costs: Unfortunately, SQAD has not yet turned its attention to establishing negotiated rates for print, so "Open" black-and-white and color advertising costs are utilized as they historically have been.

Study results were then correlated to business outcomes both directly and through Share of Discussion. Correlations were calculated using the Pearson Product Moment Coefficient (r) [18] and coefficient of determination (r^2) [19] for each set of metrics to see which correlated the closest. While the correlation identifies the strength of the association between the two variables, the coefficient of determination estimates how much of the variance in one variable is explained by the other variable. For example, if the $r^2 = .65$, then the independent variable is accounting for 65% of the variance in the dependent variable, while the other 35% is explained by other known or unknown variables.

CASE STUDIES

As mentioned earlier in this paper, millions of clips have been analyzed in hundreds of studies over the past seven years in an effort to understand the relationship between media coverage and business outtakes and outcomes. Of those studies, several dozen have actively compared the results of Quality-Refined Story Counts, Audience Impressions and Weighted Media Costs. It is important to note that there are plenty of cases where the relationships between media coverage and business outcomes are not as strong as the cases included here, but in every one, Weighted Media Costs are more strongly correlated than the other metrics being tested in this paper. We do reiterate that the purpose of this paper isn't to make the case that media coverage is strongly correlated to business outcomes, since that case was made in the two proceeding "Exploring the Link" papers authored by Jeffrey, Michaelson and Stacks. It is also not making the claim that media coverage is the ONLY variable affecting business results. The hypothesis is simply that when comparing media coverage to results, Weighted Media Costs further refined by qualitative factors such as tonality are a better indicator of that relationship than other popular data points.

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[18] The Pearson Product Moment Coefficient (r) is a measure of association that describes the direction and strength of a linear relationship between two variables; it is usually measured at the interval or ratio data level. Definition is from "The Dictionary for Public Relations Measurement and Research" by Dr. Don Stacks of the University of Miami, available through the Institute for Public Relations at www.instituteforpr.org. Pearson Correlations were preferred by the authors of these studies since the qualitative data in social science research is inherently less precise.

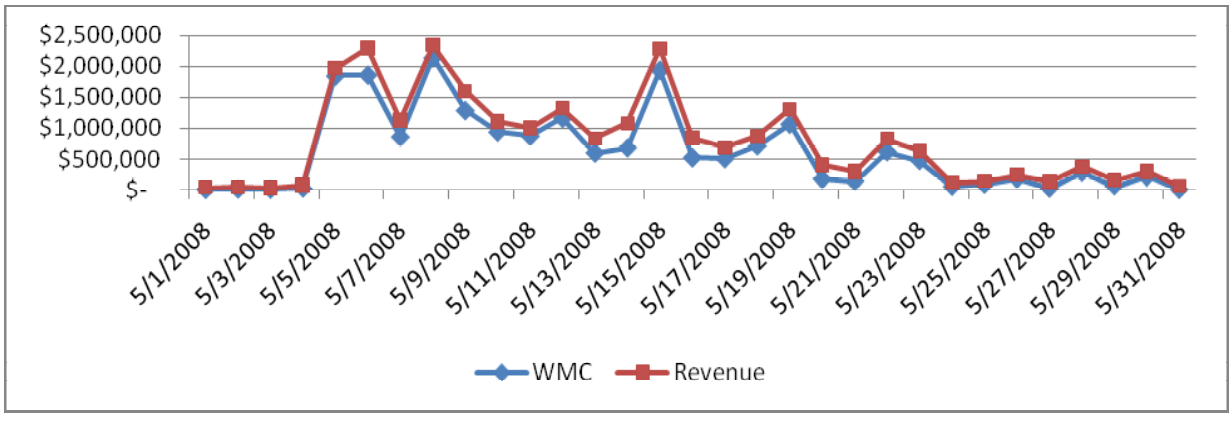
[19] The square of the correlation coefficient (r^2) is a simple linear regression that estimates the portion of variance in one variable as explaned by another variable. This statistic provides some basic information about the goodness of fit (Wikipedia) of a model. In regression, the R^2 coefficient of determination is a statistical measure of how well the regression line approximates the real data points. An r^2 of 1.0 indicates that the regression line perfectly fits the data. By B. S. Everitt, (2002). Cambridge Dictionary of Statistics (2nd Edition). CUP. ISBN 0-521-81099-x

Study One: SoD and Funds Raised for International Christian Charity

More than 14,000 articles were analyzed for a major international Christian charity as part of a Share of Discussion Study conducted for 31 days of the Myanmar disaster in 2008. Share of Discussion was analyzed in three ways: Tonality-Refined Story Counts, Audience Impressions and Weighted Media Costs. The results were then plotted against daily funds raised, with and without lead-lag time periods. While the best correlations were seen with a one-day editorial lead to funds-raised lag, even if same-day numbers were compared, or if reverse lags were used, in every case, Tonality-Refined Weighted Media Costs outperformed the other two metrics. Had the client relied on Share of Tonality-Refined Story Counts, he may well have concluded his media campaign had little to do with funds raised. Of course, in any disaster, other fund-raising methods are used, and in no way does this study suggest that only media coverage was responsible for the results. However, how does one hear most quickly about an international disaster than through the media? In any case, Weighted Media Costs would make the results most noteworthy in the C-suite.

International Christian Charity Tonality-Refined Share of Discussion Scores Compared to Funds Raised		
	R	**R^2**
Story Counts	**0.444**	**0.198**
Audience Impressions	**0.620**	**0.384**
Weighted Media Costs	**0.743**	**0.552**

Chart A: International Charity SoD Tonality-Refined Weighted Media Costs Compared to Funds Raised for 31 Days; One-day lead to lag.

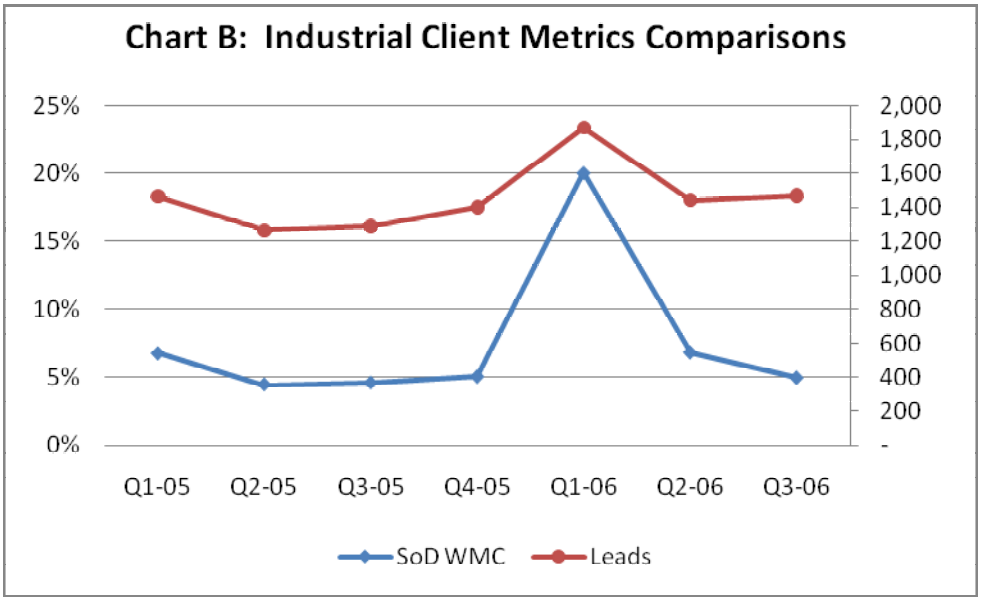


Study Two: SoD and Sales Leads for Industrial Power Conditioners

Using the same process described in the case study above, several thousand articles were analyzed in each of the three ways for an industrial manufacturer and four of its competitors. Nine quarters of sales appointments data was collected from the Client as an outcome score (Q1 2005-Q1 2007), and Share of Discussion was calculated for ten quarters using Tonality-Refined Story Counts, Audience Impressions and Weighted Media Costs. Share of Discussion was then correlated to sales appointments comparing various lead-to-lag scenarios to discover the strongest match. While a three-quarter lead-to-lag period between editorial discussion and results proved strongest, and matched the sales cycle of this product category, the comparison of the three data sets did not change regardless of the lead-to-lag periods. As the chart below shows, Tonality-Refined Weighted Media Costs were by far the strongest metric.

Industrial B2B Client Tonality-Refined Share of Discussion Scores Compared to Sales Appointments		
	R	**R^2**
Story Counts	**0.790**	**0.624**
Audience Impressions	**0.730**	**0.533**
Weighted Media Costs	**0.947**	**0.897**

Chart B: Industrial Client Sales Appointments over Seven Quarters (utilizing ten quarters-worth of data with 3-quarter lead to lag) Compared to Share of Tonality-Weighted Media Costs.



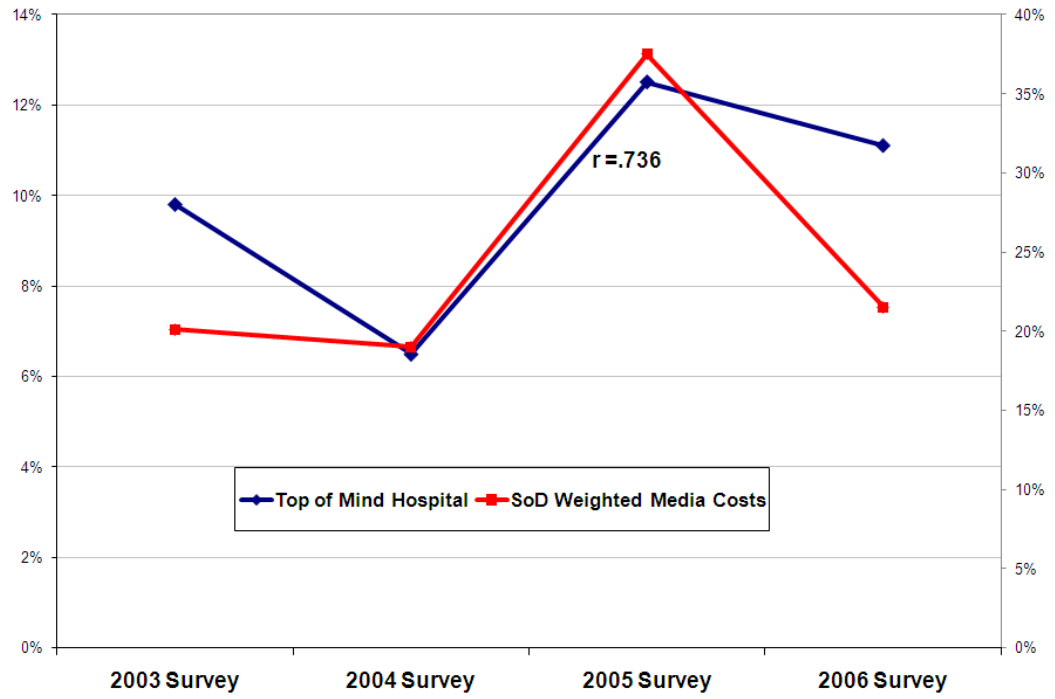
Study Three: Top-of-Mind Survey Scores and SoD for Wisconsin Hospital

For this study, the outtake or outcome scores to be compared against were four years' worth of survey scores from a prominent Wisconsin hospital's annual Healthcare Market Guide Study. This study is conducted every March by the National Research Corporation on 200,000 consumers within the nation's largest 180 Metropolitan Statistical Areas. Share of Discussion for the Client hospital, calculated from several thousand total articles included for 10 hospitals, was compared in each of the three methods for the 12 month-period preceding each survey. Results showed that editorial coverage for only the two quarters preceding each survey period correlated at significant levels. Regardless the lead to lag, at no point did Audience Impressions or Story Counts outperform Weighted Media Cost. The chart below shows that strongest correlations were between Tonality-Refined Weighted Media Costs and Top of Mind scores.

This study vividly illustrates that the relationship between editorial discussion and Top of Mind scores would have been obscured were it not for the precision offered through Tonality-Refined Weighted Media Costs. The chart below shows a surge of Top of Mind Hospital awareness in 2005, which dovetailed with the hospital's hiring of a new agency and the establishment of a new hospital website, all of which would help explain its surge in Share of Discussion.

Hospital Client **Tonality-Refined Share of Discussion Scores Compared to "Top of Mind" Survey Results**		
	R	**R^2**
Story Counts	**0.416**	**0.173**
Audience Impressions	**0.300**	**0.090**
Weighted Media Costs	**0.736**	**0.541**

Chart C: Hospital Survey Scores Compared to SoD Tonality-Weighted Media Costs with Six-Month Lead to Lag



Study Four: Parental Preference for Five Northeastern Colleges *(reprinted from "Exploring the Link between SHARE of Media Coverage and Business Outcomes," by Jeffrey, Stacks and Michaelson).*

In September 2003, 3,700 articles were analyzed by a major media research firm[20] for five northeast colleges, calculating Share of Discussion for each. Share of Discussion was calculated in three different ways, using Story Counts, Audience Impressions and Weighted Media Costs. These scores were then correlated to results of a parental preference survey for these five colleges.

In all cases, Share of Discussion was based on Tonality-Refined Story Counts, Audience Impressions and Weighted Media Costs. Negative scores were subtracted from positive-plus-neutral to obtain Net Positive. For example, if college A had a Net Positive score of 370 stories out of the 3,700 total stories, it had a Share of Discussion based on Story Counts of 10%.

Similarly, if total Impressions were 185 million, and college A had net positive Impressions of 18,500,000, it would have a Share of Discussion based on Impressions of 10%.

Similar calculations were done for Weighted Media Costs, though only the portion of each story that was truly "owned" by each college was counted for credit. All

[20] PRtrak, which is now owned by VMS

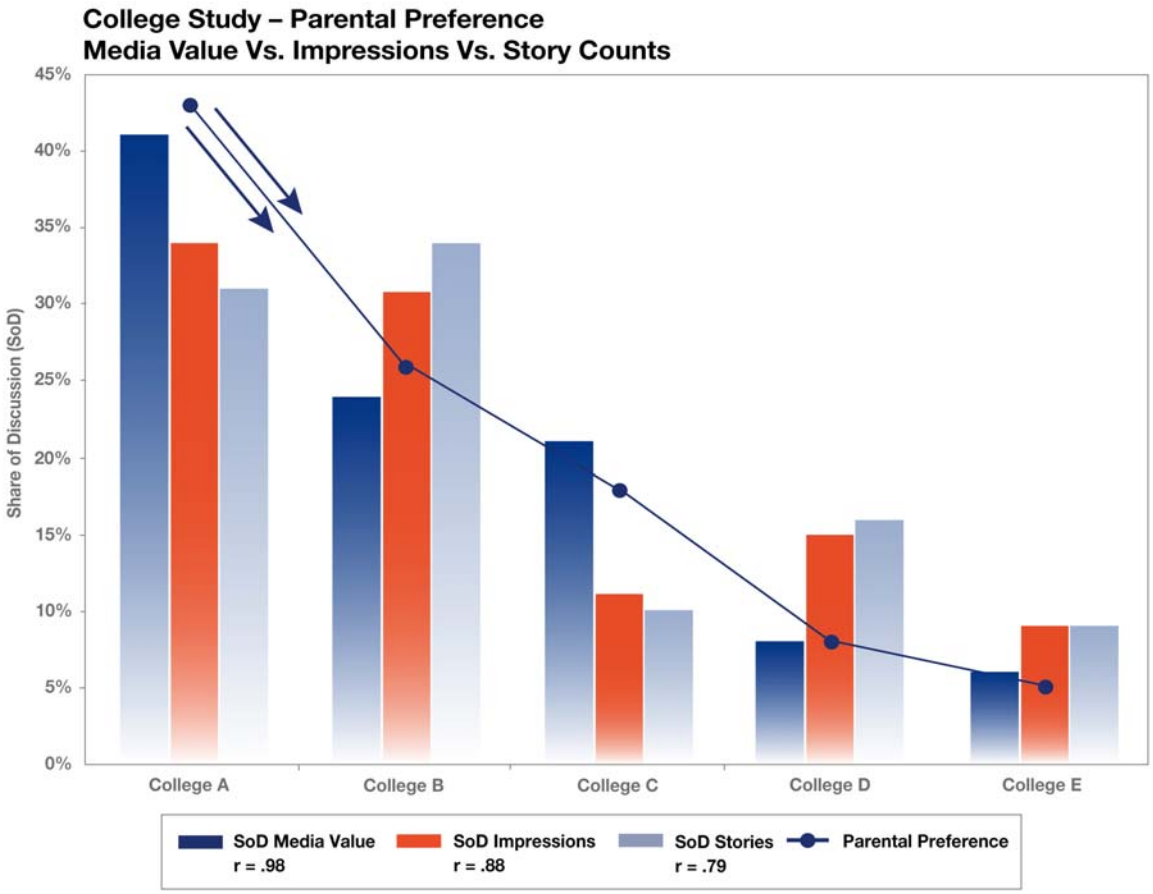
Impressions and Weighted Media Costs were calculated using a database comprised of open-rates for print, and negotiated rates for broadcast and Internet.[21]

College Client Tonality-Refined Share of Discussion Scores Compared to "Parental Preference" Survey Results		
	R	**R^2**
Story Counts	**0.79**	**0.62**
Audience Impressions	**0.88**	**0.77**
Weighted Media Costs	**0.98**	**0.96**

The results in the chart below clearly showed that media coverage correlated highly with parental preference. The higher the Share of Discussion, the higher the preference. However, there were clear differences between the metrics. As in the other studies, correlations based on Share of Discussion using Tonality-Weighted Media Costs are much clearer than those yielded by the comparative metrics. (Note: at the time this study was done, the old term "Media Value" was used instead of "Weighted Media Costs" in the chart below).

[21] VMS database, which is comprised of audited data from Arbitron, Nielsen, SRDS, SQAD, comScore Media Metrix, BurrellesLuce, PRtrak and American Newspaper Representatives.

Chart D: College Study – Parental Preference Survey Scores with SoD Tonality-Weighted Media Costs

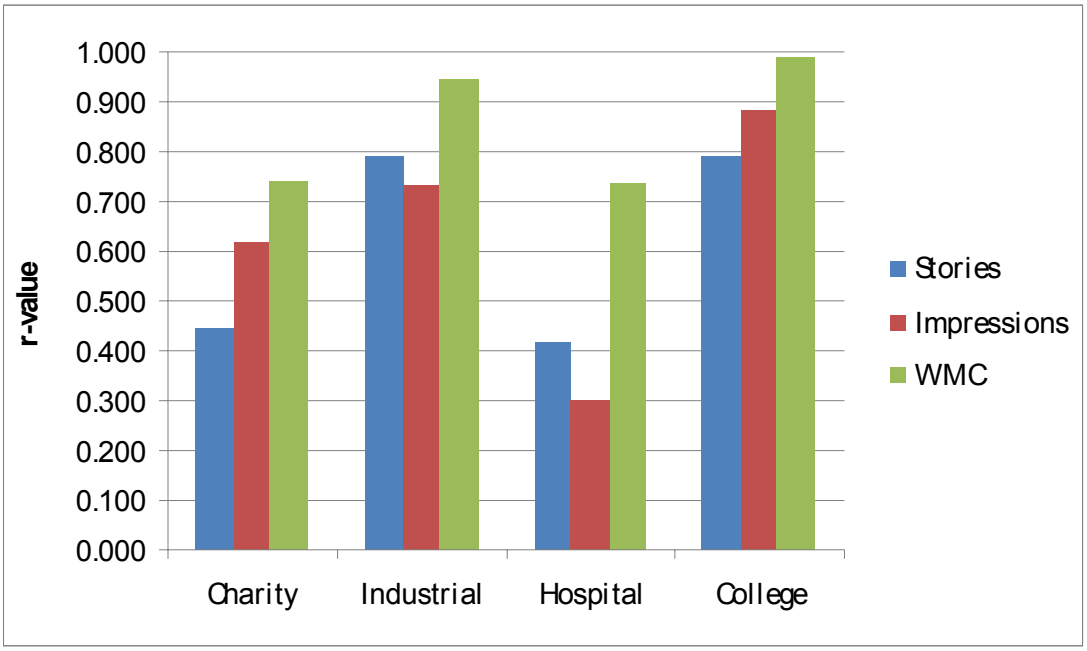


INITIAL CONCLUSIONS

The four cases above lend support for the hypothesis that Tonality-Refined Weighted Media Costs provide clearer correlations between media coverage and business outcomes than Tonality-Refined Story Counts or Audience Impressions.

In fact, the improvements are startling in some of the cases, and in their consistency across case studies in different industries. Another startling finding is that in some cases, Audience Impressions are actually a weaker metric than pure Story Counts!

Chart E: Summary of R=Values of all Four Studies between the Three Comparative Metrics and their Outtake/Outcome Scores



SO WHY ARE WEIGHTED MEDIA COSTS BEST?

Nielsen Media Research, The Arbitron Company, the TV Bureau of Advertising, the Radio Advertising Bureau, Magazine Publishers of America, SQAD Inc. and the Institute for Public Relations have provided some possible explanations. It appears that correlations are improved because the following information is imbedded within the price of media time and space:

1. Size of Audience – to some extent, the greater the size of audience, the higher the price; i.e. a daily newspaper versus a weekly.
2. Credibility of Source – to some extent, the more believable the source, the higher the price; i.e. Forbes or Fortune versus a tabloid.[22]
3. Ability to Deliver an Outcome – to some extent, the ability of a given media source to deliver a desired outcome or response; i.e. WFAN-AM in NYC which has among the highest spot costs in the nation – not because it has the largest audience, but because it has a very wealthy male audience.
4. Prominence of News Coverage – to some extent, the likely influencing power of news coverage - since both audience size and credibility of source are involved.[23]
5. Objective, Market-Driven Data – the fact that Weighted Media Costs are driven by media availability and market demand, they serve as objective

[22] Bruce Jeffries-Fox expounds on this on page one of his paper, "Advertising Value Equivalency (AVE):" "How much a publication charges for advertising is a reflection of its circulation and its reputation versus its peers. In Canada, for example, the Globe & Mail and the National Post have identical circulations, but the Globe & Mail can charge considerably more for ad space because it is the more credible publication. "

[23] Also from the paper cited above, page 4.

starting points for media analysis as opposed to being subjective, artificial scores made up by analysis companies.

6. Size/Length of Company Presence – finally, the fact that Media Weighting Scores can't be figured without factoring in size/length of client presence means that by nature, it is a more rigorous method than either Story Counts or Audience Impressions.

So, a great deal of market intelligence goes into the prices that are set by media outlets for their space and time, and therefore contribute to more accurate media analysis, and consequently to better correlations with outcomes.

A NEW NAME AND PARADIGM SHIFT FOR TEACHING AND USE

As suggested in the introduction, media cost data may be a very good metric with a very bad name and a history of misuse as an "equivalency" between advertising and editorial in terms of business impact. The public relations industry has also refused to fully let go of "AVE," suggesting practitioners know there is value in the data, but have no idea how to utilize it well.

These authors thus propose the IPR Commission for PR Measurement & Evaluation set a new name for this database, ***Weighted Media Cost (WMC)***, which would permanently replace the term Advertising Value Equivalency, AVE and Media Value.

But more important than a name change is a paradigm shift in how the data is used. To illustrate this shift, let's review the key issues cited in the Bruce Jeffries-Fox paper regarding current use of AVE, and how Weighted Media Cost would be different.

Conceptual Issues:

Issue	**Ad Value Equivalency**	**Weighted Media Cost (WMC)**
The Name	AVE infers a direct comparison to advertising in terms of impact. Problem is, "There is no scientific evidence to demonstrate that a six-column inch ad has the same impact as a six-inch story in the same publication."[24]	Weighted Media Cost makes no inference to the data being a direct comparison between news and advertising. WMC would strictly be employed as a comparative index that can be used with or without dollar signs. Comparisons can be made over time, against PR objectives or against competitors.

[24] "Measuring Public Relationships; The Data-Driven Communicator's Guide to Success," copyright Katie Delahaye Paine, kdpaine@kdpaine.com

Issue	Ad Value Equivalency	Weighted Media Cost (WMC)
Outputs, Outtakes, Outcomes	The absolute AVE dollar number has been incorrectly been used as an Outcome measure of success.	The absolute number is meaningless, and can only be used as a comparative Output score, or to link Outputs with Outtakes and Outcomes as discussed in this paper.
Media Credibility Crisis and Multipliers – the assertion that news is always more believable than advertising.	Many studies over the past decades show the decline of overall media credibility, and that credibility varies by topic, so there is no 1:1 comparison. Also, the practice of multiplying AVE by an arbitrary "credibility" factor, and then referring to it as a "PR Value" has no foundation. A new study by Drs. David Michaelson and Don Stacks, "**What Research Says: Advertising vs. PR Effectiveness,"** [25] show that news is NOT always more credible.	First, WMC is not meant to be compared directly to advertising in terms of impact, so this should not be an issue. Second, however, WMC figures are built partially on the credibility of the medium itself, so as credibility goes down, so will WMC indices. Additional work should be done on WMC to determine which of the factors listed above are most important in determining costs.
Divergence of messages in news vs. homogenous messages in advertising	Assumes that a story = an ad regardless of great differences in messaging and frequency of exposure.	Not an issue, since it is not a direct comparison in terms of impact.
Absence of publicity is sometimes the goal.	AVEs can only value what actually appears in the media, and therefore are useless to measure absence of coverage.	If no publicity is your goal and that's what you achieve, you don't need ANY further type of media analysis.

Logistical Issues:

Issue	Ad Value Equivalency	Weighted Media Cost
Ad Rates don't exist for everything – like front pages of newspapers	Back-up procedures are used for estimating when actual rates aren't available, which can undermine or water-down the basic concept when utilizing AVE results as outcomes.	Estimates work well as long as they are applied across the board consistently for relative comparisons over time, against objective or against competitors. Rates can be obtained for similar outlets, and extrapolated over. Rates do exist for inside covers of major publications.
Tone	Historically, AVE calculations have treated positive, neutral and negative stories equally, ignoring tone altogether.	The work above cites the importance of factoring-in Tone, and advises subtracting Negative scores from Positive + Neutral as a simple starting point. Again, however, the absolute number is not important, since WMC is a comparative metric only.

[25] Available at www.instituteforpr.org.

Issue	Ad Value Equivalency	Weighted Media Cost
Story Portion	There is no standard for how much of a story should be included in a calculation for AVE; should it be the entire article? Should it be just the portion of the story that is about us?	The work above provides recommendations for parsing out and counting only the portions of each story that applies to each competitor. This IS very important in WMC since it this precision improves correlations between outputs and outcomes. NOTE: Photographs, visuals, headlines and other irregularities can be measured the same way as text and factored right in.

IMPLICATIONS AND FURTHER DISCUSSION

This paper has presented a preponderance of evidence for the validity of using Weighted Media Costs in media analysis. It has called for a new name and a paradigm shift for the use of this data in the PR industry since it offers superior precision to Story Counts and Audience Impressions, and clarifies correlations to outcomes. We thus recommend the IPR Commission on PR Measurement & Evaluation:

- Suggest the name change and paradigm shift to PRSA, IABC, AMEC and other key industry groups;

- Add the following definition to the Dictionary for Public Relations Measurement & Research:

  > ***Weighted Media Cost*** *is the practice of utilizing the cost of media to the broadcast time or print/internet space occupied by a client as an objective market proxy number for comparative analysis against historical performance, against objectives, or against competitors. The absolute number itself has no meaning or value beyond that of any index used for comparisons of any kind. Proper use includes the subtraction of all negative coverage; assigning costs to only the space or time occupied by an organization; using audited, negotiated media costs to the extent possible; and refraining from claims that WMC scores are outcomes of public relations campaigns. A score derived from Weighted Media Cost could be referred to as a* ***Weighted Media Cost Index****, especially when utilized without dollar signs.*

- Encourage industry media evaluation, research and analysis firms to adopt this new method as a replacement for old Advertising Value Equivalency scoring, and as a replacement for, or addition to, Story Counts and Audience Impressions for quantitative scoring … especially if correlations to outtakes or outcomes is to be undertaken. The difference may be as significant as seeing, or not seeing, a relationship between outputs, outtakes and/or outcomes.

It is the hope of these authors that the research and insights shared in this paper help put to rest the Ad Value Equivalency wars, and lead PR practitioners toward clearer correlations of their hard work to real business results.

APPENDIX A

Sample LOCAL TELEVISION Data Table

	Monday - Friday		Saturday		Sunday	
	COST	IMPR	COST	IMPR	COST	IMPR
5AM - 6AM	$164.45	33,200	$91.50	14,200	$65.23	10,300
6AM - 7AM	$178.44	36,100	$106.40	16,900	$75.28	11,900
7AM - 8AM	$213.37	43,200	$286.37	5,400	$50.61	8,000
8AM - 9AM	$187.08	37,900	$323.11	51,300	$97.16	15,400
9AM - 10AM	$290.09	52,900	$221.78	35,200	$198.91	31,600
10AM - 11AM	$465.44	84,900	$57.34	9,100	$207.45	32,900
11AM - 12PM	$618.86	112,900	$127.62	20,200	$206.35	32,700
12PM - 1PM	$462.57	84,400	$279.30	44,300	$175.52	27,800
1PM - 2PM	$279.51	51,000	$299.34	47,500	$307.72	48,800
2PM - 3PM	$354.90	64,700	$234.73	47,400	$303.63	48,200
3PM - 4PM	$559.15	88,700	$356.22	56,500	$278.44	44,200
4PM - 5PM	$849.61	134,800	$421.49	66,900	$358.50	56,900
5PM - 6PM	$1,290.24	149,700	$1,188.31	83,000	$709.29	82,300
6PM - 7PM	$1,518.81	186,400	$2,392.05	145,800	$3,323.93	215,500
7PM - 8PM	$2,822.46	183,000	$2,707.82	155,100	$3,636.26	235,700
8PM - 9PM	$3,092.57	200,500	$3,592.97	175,500	$3,870.89	250,900
9PM - 10PM	$3,239.27	210,000	$2,065.92	232,900	$3,475.44	225,300
10PM - 11PM	$2,176.38	162,200	$408.61	154,000	$2,286.68	170,500
11PM - 12AM	$493.63	68,600	$146.40	56,800	$419.87	58,300
12AM - 1AM	$230.41	32,000	$106.40	20,300	$219.06	30,400
1AM - 2AM	$55.39	7,700	$63.56	8,800	$105.21	14,600
2AM - 5AM	$34.75	4,300	$39.44	4,100	$64.55	7,400

Sample LOCAL RADIO STATION Data Table

	Monday - Friday		Saturday		Sunday	
	COST	IMPR	COST	IMPR	COST	IMPR
5AM - 6AM	$61.85	9,900	$11.38	2,900	$9.22	1,400
6AM - 10AM	$172.98	31,900	$69.19	13,300	$51.89	8,600
10AM - 3PM	$143.94	32,900	$104.68	24,800	$78.51	19,700
3PM - 7PM	$173.12	30,000	$103.87	18,900	$86.56	14,500
7PM - 12AM	$35.06	7,500	$52.60	10,600	$35.06	6,800
12AM - 5AM	$18.75	1,300	$39.44	1,700	$21.55	1,100

Appendix B

• BLUEPRINT •

Measuring Media Relations Outputs for Internet Publications

If you think guidelines to measure print and broadcast media can give you a headache, trying to measure articles on the Internet is is akin to getting a frontal lobotomy. How does one determine the number of people who may have seen a story on the Web, and what possible media value could it have? It's an issue that should be at the top of mind for communications executives, especially if you consider how much faster the Internet has grown compared with the historic growth of radio and TV, for example. To get a better handle on Web measurement, PRtrak/SDI recently worked with top executives in the advertising research, media buying and Web measurement industries to develop some methodologies and guidelines that would lay a cornerstone for Internet media measurement for the PR world. These methods are now being used by a number of PR vendors and hundreds of practitioners nationwide, and include the following:

Internet Audience Estimates:

Internet audience estimates are easy to inflate, just by misunderstanding the various definitions alone.

Hits: many users cite "Hit" counts as evidence of how many times their story was accessed. But "Hits" is the most inflated number of all, since it delivers the total of all graphic elements accessed within an entire site each day.

Impressions: this number is also inflated, since it delivers the total of all pages viewed on a site per day.

Visits: since a story usually appears on a single page, the best number to use is Daily Average Visits, which shows the average number of times the site itself is accessed each day. Thus, at the most, this would be how many people could actually have seen your story. Essentially, Daily Average Visits for the Internet is the same as Gross Impressions are for broadcast stations – "eyeballs."

Home Versus Non-Home Page Visits: Keep in mind that "Visit" numbers tend to be available for Home Pages, which is not where most of us get story placements. So, if you wish to measure more precisely, research done by SDI and comScore MediaMetrix has shown that the likelihood of a prospect to go from a home page to a secondary (or deeper) sub-page depends upon the type of site. For example, at the low end, only 8% of visitors to a "community" site go on to a sub-page, whereas at the high end, 28% do so on a financial site.

Internet Media Values:

The metric to request is the 468 x 60 banner rate for a site. A reliable source for Internet advertising rates is:

SQAD Inc., which is the definitive standard in media-cost forecasting for the broadcast and Internet industries. SQAD obtains the real invoices paid by major ad agencies, and supplements that information with polling and then determines the "Average Banner CPM" paid by media buyers.

Using a straight banner rate for the value of a story is completely inaccurate. SDI found that what was missing in these calculations was the amount of space covered by a story, in the same way column inches are used to calculate print value. The algorithm that yields the most realistic rates – when compared to print space costs – is to use 1 banner rate for each 50 words in an article.

Adding It All Up:

Here is a summary of the steps, along with an example:

Obtain Daily Average Visits for the site
(Example: 20,000 visits)

Obtain the 468 x 60 Banner CPM
(Example: $25)

Divide Daily Average Visits by 1,000
(Example above: 20,000 divided by 1,000 = 20)

Multiply the CPM by the result above to get the full Banner Cost
(Example above: $25 x 20 = $500)

Divide the Word Count of your story by 50
(Example: a 200-word story divided by 50 = 4)

Multiply the result above by the Banner Cost for story Media Value
(4 x $500 = $2,000 Media Value)

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