Issues and Challenges With Cross-Platform Media Measurement Alignment: Research Review and Analysis

Prepared for: The Council for Research Excellence


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INTRODUCTION

The Council for Research Excellence (CRE) has commissioned Horowitz Associates to develop a white paper summarizing the issues surrounding cross-platform metrics alignment. The core objective of the white paper is to inform the development of a research agenda for the CRE that will help guide the industry toward the development of consistent media metrics.

Integral to the development of the white paper, and ultimately the research agenda, is a review of the literature representing current industry thinking on the issues surrounding cross-platform media measurement. These issues are reviewed in this document.

Following this review of the data and literature on cross-platform measurement, Horowitz Associates will conduct primary research among executives across many sectors of the media industry and produce a white paper on the findings to inform the CRE’s research agenda.

Upon a review of current secondary sources on the subject of cross-platform measurement including industry journal articles, white papers, conference presentations, and trade press articles, Horowitz Associates has identified the following four key issue areas:

- alignment of metrics and units of analysis,
- alignment of methodologies,
- the relative benefits and drawbacks of single-source versus data integration, and
- whether or not engagement, or any other dimension of the media consumption experience, should become part of the metrics used to evaluate media across different video, audio, digital, and static platforms.

Each of these issue areas is briefly described in the Executive Summary and explored in greater depth in the main report.
SECTION ONE: ALIGNMENT OF METRICS AND UNITS OF ANALYSIS

A fundamental challenge to measuring exposure to media and advertising across platforms is that exposure is defined differently on each platform and even within each platform. As part of the industry’s effort to evaluate measurements across multiple platforms, a common definition of exposure needs to be explored, or the varying definitions of exposure by platform need to be taken into account and made comparable.

- The units of measurement across media platforms are not consistent. Across platforms, units of exposure range from average second, average minute, and average quarter hour for television and radio, to impressions or clicks for digital media, to “views” and/or “streams” for digital video, to self-reported exposure for magazines, to traffic counts and visibility measurement for outdoor. Measurement differs between advertising exposure and programming content. (See pages 9-11 and Appendix A.)

- Furthermore, advertising formats are different for each platform (e.g., a 30-second TV commercial, an online banner ad, or a mobile takeover ad), and so, too, are the definitions of an “impression.” This makes it difficult to assess the relative value of each platform. (See page 12.)

- An important issue for cross-platform metrics alignment is whether a standard, like the gross rating point (GRP), can be developed that validly aggregates all impressions of a particular show or commercial campaign across all relevant platforms in order to deliver a total audience measurement. (See pages 12-13.)

- Beyond developing a cross-platform GRP, a fundamental challenge for cross-media metrics is the difficulty of determining reach. For example, current digital measurement methodologies tend to count unique devices or browsers, but not unique persons, resulting in indeterminable actual audience size and reach. (See page 13-14.)
SECTION TWO: ALIGNMENT OF METHODOLOGIES

As the industry looks to establish a system for measuring cross-platform media exposure, decision makers must consider and account for the inherent methodological limitations of independent measurements.

Two key issue areas for media measurement are:

- Sample (panel) versus census and
- Data collection systems (self-report, passive device-based monitoring, or passive electronic monitoring).

Sample Versus Census

- Media measurement methodologies have traditionally relied on panel data—information about exposure to a single medium collected from a preselected sample of the measured population that has agreed to participate in research and is incentivized for its participation. By definition, samples are meant to be representative, not a census, of a given population universe. (See page 17.)
- Panel-based approaches face three fundamental challenges. First, panels must be recruited, and different recruitment methodologies may introduce their own inherent biases. Second, weighting of panel data is critical in order to ensure that the data are representative of the larger media universe, and proper weighting is increasingly challenging. Third, compared to census-type data, panels are limited by their size. (See pages 17-20.)
- Census-type measurement providers aggregate data from entire universes of viewers/users, providing robust data on the media activities recorded by a given device (e.g., the set-top box, a computer, a mobile device). Census-type data, however, are not obtained from a real census of all possible subscribers or viewers. The data are obtained from only a very large subset that is not necessarily representative of the entire universe. Moreover, the utility of census-type data can be limited by a lack of demographic information. (See pages 20-21.)

Data Collection Systems

- Self-Reported: Studies evaluating the validity of respondents’ recall of their media consumption have consistently found sizeable discrepancies between perceived, or recalled, media consumption and actual consumption (see, for example, the CRE’s “Video Consumer Mapping Study,” March 2009).¹ (See pages 21-22.)
- Passive, Device-Based Monitoring: The validity of passive, device-based monitoring suffers from issues with user compliance and improper usage of the device. (See page 22.)
- Passive Electronic Monitoring: Passive electronic measurement is not immune to methodological challenges. In the digital space, the use of cookies is problematic for identifying unique users, and the passive monitoring of set-top boxes and mobile apps may overstate active viewing and/or usage of the measured medium. (See pages 23-24.)

SECTION THREE: ALIGNMENT OF REPORTING—DATA INTEGRATION VERSUS SINGLE-SOURCE

There are two different methods for bringing measurement of different platforms together—data integration and single-source. Data integration techniques combine two or more data sets to determine cross-media exposure. Single-source data collection, on the other hand, relies on each individual respondent to provide information for all platforms being measured. Each approach has its own set of benefits and limitations. In the context of cross-platform measurement, the industry will need to decide whether single-source measurement is an achievable goal, and whether or not data integration can be a successful substitute for single-source measurement.

**Data Integration**

- Data integration leverages the vast amount of available data on each platform while minimizing the potential difficulties in collecting single-source data, including cost and respondent fatigue. (See pages 26-27.)
- With data integration, researchers combine data from several different sources in order to develop a picture of cross-platform consumption. The lack of transparency in execution has led to complaints by industry members. (See pages 27-28.)
- Data integration results are also questioned on their core validity. For example, to avoid one potential pitfall of data fusion, a type of data integration, the fuser must be careful to separate statistical artifacts from real behavior. (See pages 28-29.)

**Single-Source**

- Collecting single-source data in cross-platform media research means asking each respondent to provide data for all of the platforms measured, as opposed to integrating data from several sources and multiple respondents. (See pages 29-30.)
- One difficulty in providing single-source data is recruiting participants who agree to provide an extensive inventory of their media behavior. As discussed in Section Two, current recruitment methodologies have the potential to exclude or, alternatively, to overrepresent elements of a measured population. (See pages 30-31.)
- Given the large and diverse sample necessary for a quality single-source panel, recruiting and maintaining the panel has important cost implications. (See page 31.)

SECTION FOUR: PLATFORM ALIGNMENT—VARIATIONS IN ENGAGEMENT OR OTHER DIMENSIONS OF THE MEDIA CONSUMPTION EXPERIENCE

While the opportunity to see (OTS) or hear content and/or advertising has been the foundation of most media measurements, some industry research has taken an alternative approach, suggesting measures of engagement instead. In a cross-platform media environment, understanding the consumer experience with both content and advertising has become more important. How a consumer interacts with or reacts to a particular piece of content may differ depending on the platform on which the content is consumed. The consumer’s attention, learning, and recall of advertising nested within that content may also differ depending on the platform. As the media
industry moves toward a standard for cross-platform measurement, must we include the dimension of engagement or any other dimension of the consumer experience? If so, how can these dimensions of the consumer experience be defined to effectively translate across media platforms and audience behaviors?

- The media industry has not developed a universally accepted definition of engagement. In 2006, the Advertising Research Foundation (ARF) defined engagement as “turning on a prospect to a brand idea enhanced by the surrounding context.” In 2011, 5 years later, the CRE’s User Experience white paper indicated that “there are at least 25 definitions of engagement.” In 2014, the Interactive Advertising Bureau (IAB) defined ad engagement as “a spectrum of consumer advertising activities and experiences—cognitive, emotional, and physical—that will have a positive impact on a Brand.” (See pages 32-33.)

- Engagement has been measured in many different ways, including time spent, mental effort, and through neuroscience, including the tracking of eye movement and other biometrics. (See pages 33-35.)

- Current research comparing engagement on different media viewing platforms has been contradictory, due in part to differing methodologies and definitions of engagement. Some studies have found that advertising on television results in the highest engagement, while others have argued that simple advertisements are equally effective across all platforms. (See pages 35-36.)

RESEARCH AGENDA

The core objective of this project is to inform the development of the CRE’s research agenda to help guide the industry toward the development of consistent media metrics. This review of the literature about current industry thinking on the issues surrounding cross-platform media measurement indicates four key issue areas for further research: alignment of metrics and units of analysis, alignment of methodologies, the relative benefits and drawbacks of single-source versus data integration, and whether or not engagement should become part of the metrics used to evaluate media across different video, audio, digital, and static platforms. The specific research priorities within each of these broad spheres will be the topic of phase two of this project, a survey of programming, advertising, and research executives from across the media industry.
Section One: Alignment of Metrics and Units of Analysis

ALIGNMENT OF METRICS

Traditional media measurement metrics define and size audiences based on exposure to the measured medium, expressed in terms of “impressions” or “opportunities to see” (OTS). The rise of digital media has introduced new content and advertising formats and new experiences for audiences. As a result of these new media, the following cross-platform measurement question arises: How can the definitions of an impression be aligned across media platforms to deliver valid and comparable measures of reach for both content and advertising?

A fundamental challenge to measuring exposure to media and advertising across platforms is that exposure is defined differently on each platform and even within each platform. In many cases, aligning current metrics results in an “apples-to-oranges” comparison. As part of the industry’s effort to evaluate measurements across multiple viewing platforms, a common definition of exposure needs to be explored, or the varying definitions of exposure by platform need to be made comparable.

Resolving the issue of how to reconcile the variations in the definition of an impression across media is critical to monetizing cross-platform opportunities for media companies. In a 2013 survey of media buyers and sellers conducted by Nielsen and the ANA, 73% of respondents said that they would prefer to use one set of metrics across all screens, and 61% of respondents said that...
consistent metrics across screens would lead them to increase their spending on integrated multiscreen campaigns.²

OVERVIEW OF MEASUREMENT UNITS BY PLATFORM

The following chart outlines the primary media measurement vendors for each platform, the most important metrics they collect, and how those metrics are defined. For further information, please see Appendix A.

<table>
<thead>
<tr>
<th>Product†</th>
<th>Medium</th>
<th>Measurement Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nielsen National People Meter</td>
<td>TV</td>
<td>Minutes, ACM, C3, live, live+3, live+7</td>
</tr>
<tr>
<td>Nielsen Local Service</td>
<td>TV</td>
<td>AQH ratings, live, live+3, live+7</td>
</tr>
<tr>
<td>Rentrek TV Essentials</td>
<td>TV</td>
<td>Seconds (advertising), 30 seconds, avg. minute</td>
</tr>
<tr>
<td>Rentrek StationView Essentials</td>
<td>TV—Local</td>
<td>Seconds (advertising), 30 seconds, avg. minute</td>
</tr>
<tr>
<td>comScore vCE</td>
<td>Digital</td>
<td>Unique viewers, impressions, % reach, daily</td>
</tr>
<tr>
<td></td>
<td></td>
<td>unique viewers, GRPs, TRPs</td>
</tr>
<tr>
<td>Nielsen Online Campaign Ratings</td>
<td>Digital</td>
<td>Audience/impressions, daily unique reach,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frequency, GRPs, Viewability, TRPs</td>
</tr>
<tr>
<td>Nielsen Audio ( Arbitron)</td>
<td>Radio</td>
<td>Minutes or AQH ratings</td>
</tr>
<tr>
<td>Scarborough/Nielsen Local USA+</td>
<td>Newspaper</td>
<td>Read or looked into</td>
</tr>
<tr>
<td>GfK MRI (Adult)</td>
<td>Magazine</td>
<td>Read or looked into</td>
</tr>
<tr>
<td>TAB Out of Home Ratings</td>
<td>Out of Home</td>
<td>Weekly circulation, eyes on, visibility, traffic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>counts</td>
</tr>
</tbody>
</table>

ACM: average commercial minute; AQH: average quarter hour; GRP: gross rating point; TRP: target rating point.

TELEVISION: Ratings

The fundamental metric for television is the rating. Ratings provide a measure of the size of the TV audience tuned in to a given TV show. For national television, the rating represents viewership during the average minute. For local television, the rating represents viewership during the average quarter hour.

The rating is computed by dividing the number of audience impressions by the audience population and multiplying that result by 100. While not a definitive measure of actual viewing, ratings provide an estimate of the audience with an “opportunity to see” the show being measured.

Nielsen’s National People Meter collects persons-level viewership data passively through a set-top device and reports the data on a minute-by-minute basis.† For local TV measurement, in the 25

† The information contained in this table is a compilation of information provided directly to the Council for Research Excellence and publicly available information from the respective research vendors.
largest markets, Nielsen collects persons-level viewership data using Local People Meters. In 31 second-tier markets, Nielsen utilizes set meters and diaries. The diaries are used in combination with set meters to estimate persons ratings. The remaining 154 markets are diary-only markets.

Viewership data reported by companies like Rentrak and Kantar is captured directly from cable and satellite company set-top boxes, providing greater granularity and reporting ratings in seconds instead of minutes. These data companies only collect set-top box data from certain cable/satellite television providers, missing a large part of the multichannel viewing universe and, by definition, missing the entire non-multichannel viewing universe. Additionally, the data provided by these data companies is limited to measurement of household viewership; persons-level data is not captured.

Historically, television ratings measured audiences exposed to television content. More recently, providers have been able to report exposure to advertisements embedded within the television content. The reporting differences by provider become increasingly relevant when looking at commercial ratings, rather than show or network ratings. Nielsen is able to offer advertising measurement based on an average commercial minute (ACM)—an average rating for the commercial minutes in each program. Because the typical ad runs for 30 seconds rather than a full minute, Nielsen data only provide an estimate of how many people are exposed to a specific commercial in a commercial pod. Rentrak’s second-by-second measurement, on the other hand, allows it to deliver Exact Commercial Ratings™.

DIGITAL AND MOBILE: Impressions

The primary metric in the digital and mobile space (computers, tablets, and smartphones) is an impression. Impressions are defined by a variety of measurement units, including views, clicks, time spent, and unique viewers. Digital/online advertising now encompasses a wide variety of formats for both static and video advertising. Further, social media platforms have now entered the playing field, and along with them come a bevy of new ways of defining an impression (“likes,” “tweets,” “retweets,” “posts,” “shares,” etc.). A key issue in the digital and mobile space is being able to confirm whether a piece of content has actually been delivered to its audience. In addition, a measured impression on a mobile device may not be the same as a measured impression on a computer.

The Interactive Advertising Bureau (IAB) is playing a leading role in establishing guidelines for defining and measuring impressions for both static and video online ads. In 2006, the IAB released a set of guidelines for digital video ad impressions that determined at what point the delivery of a video commercial could be counted as an impression. The guidelines, which are still in place today, establish that an ad impression should be counted only when the ad itself begins to appear on the user’s browser and not before. The IAB’s 2008 Platform Status Report: A Digital Video Advertising Overview goes on to note that “Other non-currency measurement metrics exist today, but because of the amount of innovation in the medium, none have become standard.”

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In 2013, the IAB developed guidelines for mobile advertising similar to its guidelines for digital video impressions. The IAB asserted that “client-side measurement [which confirms the successful delivery of an ad impression] is the only acceptable method for the counting of valid ad impressions.”

Similarly, the Media Rating Council (MRC) is striving to establish standards for static advertising in the digital environment. Online display ads are generally sold based on the number of impressions (the number of times an ad is displayed) they will deliver. The issue is that many online advertisements that are served are never actually seen because they are not in viewable areas of the screen. According to an article in Advertising Age, comScore data from June 2013 showed that 46% of advertisements were never seen by Web site visitors. In a 2013 article in the Journal of Advertising Research, Stephanie Flosi, Gian Fulgoni, and Andrea Vollman of comScore noted that between 30% and 37% of served advertising impressions in the United States, Europe, and Canada never were actually viewed by the end user. The article also points out that, across the top 100 U.S. sites, “viewability,” the ability of an advertisement to be seen, averaged only 74%. On March 31, 2014, the MRC released industry guidelines for counting “viewable impressions.” Under these guidelines, a viewable impression can be counted if 50% of the pixels of the advertisement remain in the viewable portion of the Internet browser for one continuous second.

Beyond establishing guidelines for digital ad impressions, separating devices or browsers from persons to determine unique viewers remains a key issue. This issue is detailed later in this document (see Section Two).

RADIO: Ratings

The primary measurement metric for radio is the “rating,” as collected by the Portable People Meter (PPM), a device carried by members of Nielsen Audio’s panel (formerly Arbitron). The PPM measures individual listeners’ exposure and time spent for encoded broadcast radio stations by minute or average quarter hour. The secondary measurement methodology for radio is the diary. Diaries are used in smaller markets. Nielsen Audio measurements do not provide commercial specific measures.

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PRINT: Audience

The primary metric for print media is “audience.” Print media are measured by self-reported survey instruments, typically based on whether the respondent read or looked into the medium in question within the publication frequency (e.g., last 30 days for a monthly product or last 7 days for a weekly product). GfK’s Issue-Specific Readership Study provides additional granularity with issue, rather than product, audience metrics. As print media readership expands to various digital platforms and devices—Web sites, eReaders, mobile phone apps, and tablets—many print media measurement companies have begun to include readership of print media on digital platforms in their measurements.

There are also some products available for print media that provide measures of individual advertisements. GfK’s Starch Advertising Research and Starch Digital measurement products measure how many readers actually saw a specific ad rather than just how many readers had the opportunity to see a print ad. These products also provide information about how many read the advertisement thoroughly and how many took an action as a result of seeing the ad.

OUTDOOR: Traffic Counts and Visibility

In the outdoor media space, measurement is provided by the Traffic Audit Bureau for Media Measurement Inc. (TAB). TAB’s Out of Home (OOH) ratings system called EYES ON, incorporates traffic counts/circulation, visibility research, Census data, trip surveys, and reach and frequency measures to provide measurement of audiences for billboards, posters, junior posters, transit shelters, and phone kiosks.9

ALIGNMENT OF MEASUREMENT UNITS: APPLES TO ORANGES

Despite critiques of impressions, they remain the fundamental metric used to calculate media exposure for each stand-alone media platform. As the industry strives towards cross-platform measurement alignment, an inherent challenge is that advertising formats are different for each platform (e.g., a 30-second TV commercial, an online banner ad, or a mobile takeover ad), and so, too, are the definitions of an “impression.” This makes it difficult to assess the relative value of each platform. According to Michele Madansky and Kathryn Koegel in their analysis of cross-platform advertising effectiveness, “Digital media and offline media opportunities-to-see (OTS) are captured in different ways within different time frames, making it difficult to compare media on a level playing field.”10 Glenn Enoch and Kelly Johnson of ESPN noted, in their 2010 article for the Journal of Advertising Research, that “[c]ross-media comparisons often compare apples to oranges—studies, for instance, that compare Internet uniques (how many) to average audience in TV (how long).

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Clearly, ‘how many’ is not the same thing as ‘how long.’”\textsuperscript{11} According to Jack Wakshlag, former Chief Research Officer at Turner, the combination of measures from several different sources has been called “Frankenmetrics because we are getting arms and legs and heads from different places that have to be sewn together….Unfortunately, the result really isn’t a whole functioning entity.”\textsuperscript{12}

A focus on the differences in \textit{definitions} of impressions across platforms is likely less critical than ensuring accurate \textit{measurement} of those impressions and devising a way to report them in aggregate across platforms. Glenn Enoch and Kelly Johnson of ESPN claimed in the \textit{Journal of Advertising Research} article that “there are just three things we need to know about media behavior, no matter what the label: How many people engage in the behavior? How often do they engage in the behavior? How long do they spend with the behavior, in average or in total?”\textsuperscript{13}

\textbf{DEFINING A CROSS-PLATFORM GRP}

The GRP has functioned successfully as a way to relate impressions to a universe. An important issue for cross-platform metrics alignment is whether a standard metric (like the GRP) could be developed that validly aggregates all impressions of a particular show or commercial across all relevant platforms in order to deliver a total audience measurement. In the 2013 ANA/Nielsen survey of media buyers and sellers, 75\% of respondents gave a top 2 response on a 5-point scale when asked to what degree they want online to adopt television audience measures like GRPs.\textsuperscript{14} George Ivie, Executive Director of the MRC, points to the inherent challenge of creating and aligning a cross-platform GRP: “How do you calculate a digital GRP properly? And… once you’ve got good digital GRPs, how do you combine television and digital GRPs on an apples-to-apples basis? Those two are very difficult.”\textsuperscript{15}

\textbf{ISSUES OF TRACKING UNIQUE USERS AND CONTENT ACROSS PLATFORMS}

As explored in further detail in Section Two (Alignment of Methodologies), a fundamental challenge for cross-media metrics is the difficulty of determining reach. For example, current digital

\begin{itemize}
\item \textsuperscript{14} ANA/Nielsen, “Optimizing Integrated Multi-Screen Campaigns,” p. 23.
\end{itemize}
measurement methodologies tend to count unique devices or browsers, but not unique persons, resulting in indeterminable actual audience size and reach.16

Relatedly, because the same content is available on several platforms, it is difficult to fully measure the audience of a given piece of content. The CIMM TAXI (Trackable Asset Cross-Platform Identification) initiative was designed to accelerate video asset identification and trackability standards, creating a common language for cross-platform measurement. Currently, naming standards for assets are not consistent, resulting in numerous title variations for the same content. The report cites Janice Finkel-Greene, Mediabrands’ EVP of Buying Analytics, who highlights this naming issue: “And how do you find all the naming variations for ‘Two and a Half Men’…or is it ‘2½ Men’?”17

At a recent conference, Chris Lennon, President and CEO of MediAnswers, discussed an initiative that builds on TAXI, called Binding IDs, an identifier bound within the audio/visual essence of the content that can survive throughout transmission to the end user on any device. These binding IDs will allow for, among other things, more granular and accurate ratings and media measurement. The initiative intends to deliver a report this summer (2014) to the Society of Motion Picture and Television Engineers in an effort to establish a standard binding ID process for video media.18 Until there is widespread industry buy-in and acceptance of a consistent system for naming and tracking content across platforms, this issue will remain unresolved.

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Section Two: Alignment of Methodologies

METHODOLOGICAL ISSUES

As the industry looks to establish a system or a set of guidelines for measuring cross-platform media exposure and integrating cross-platform data from multiple sources, it must consider and account for the inherent methodological limitations of independent measurements. Two key issue areas for media measurement are:

- sample (panel) versus census-type measurement and
- data collection systems (self-report, passive device-based monitoring, or passive electronic monitoring).

The widely accepted media measurement tools used for independent measurement of TV, audio, print, outdoor, and digital media all have their own strengths and benefits. As is further explored in this section, they also suffer from inherent challenges, flaws, and weaknesses.

This section considers the methodological issues related to samples and data collection. The following chart enumerates the sample and census-type methodologies and the data collection methods of the key media measurement products. For further information, please see Appendix A.
Media measurement has traditionally relied on panels that are carefully recruited to be representative of the audience universe. Now, in the age of digital media, a number of vendors are able to deliver metrics based on a broad (but not universal) census of identifiable data streams. What are the differences between and relative benefits and limitations of sample data versus census-type data? How can data of different types be aligned? Which approach to alignment will deliver more valid, more reliable data? As the CRE and the industry strive to align cross-platform metrics that are based on panel and census-type data, the differences, benefits, and limitations must be analyzed.

In the context of media measurement, panel data are information about media exposure collected from a preselected sample of the population. This sample has agreed to participate in the research and is incentivized for its participation. By definition, samples are meant to be representative, not a census, of a given population universe. Numerous media measurement products rely on data from panels. In particular, Nielsen’s TV and audio ratings are taken from ongoing panels of TV and radio households, respectively.

Census-type measurement providers aggregate data from entire universes of, for example, subscribers, users, or viewers. They provide robust data on the media activities recorded by a given device (e.g., the set-top box, a computer, a mobile device). Census-type data, however, are not obtained from a real census of all possible subscribers or viewers. The data are obtained from only a very large subset that is not necessarily representative of the wider universe. An example would be data that is collected from set-top boxes in areas served by Charter Communications. In this

† The information contained in this table is a compilation of information provided directly to the Council for Research Excellence and publicly available information from the respective research vendors.
example, the viewing behavior of the population of households subscribing to the Charter Communications cable television service within a particular geography would be captured and reported. Households not subscribing to the Charter Communications cable television service would be excluded. Viewing behavior for set-top boxes that are not equipped with a “return-path” data capability would also be excluded.

Companies like Rentrak, Kantar and TRA deliver census-type “big data” that is derived from set-top boxes. This data is often supplemented with additional third-party data sources.

As mentioned above, it is important to point out that census-type measurements are not actual census measurements. In all cases, they do not cover the entire population universe (e.g., Internet users19 or television households), only users of the particular platforms that are providing the data.

**Sampling**

Panel-based approaches face three fundamental challenges.

- First, panels must be recruited, and different recruitment methodologies may introduce bias inherent to their respective methodology.
- Second, weighting of panel data is critical to ensuring that the data are representative of the larger media universe, and proper weighting is increasingly challenging.
- Third, compared to census-type data, panels are limited by their size.

The validity of panel data is contingent on the initial recruitment methods and subsequent weighting schemas. Recruitment and weighting issues have been the basis for widespread critiques of Nielsen’s TV samples vis-à-vis the accurate representation of Black and Hispanic audiences since the mid-2000s. A 2004 *LA Times* article on the topic noted that “critics’ complaints focus on the composition of the sample audience that Nielsen has selected for the People Meters.” In the article, Jim Kite, who was, at that time, Universal McCann’s Global Research Director, noted, “The sample audience is even more important than the technology…. We need to have a currency that both the advertisers and the networks believe in…. There is so much money at stake.”20

**RDD:** The recruitment methodology or methodologies chosen have a direct impact on how accurately a panel represents the given audience universe. Historically, panels have been recruited using random-digit dialing (RDD) telephone calling supplemented by direct mail and door-to-door tactics. The actual representativeness of panels recruited this way (even after weighting) is subject to legitimate challenge, particularly with regard to multicultural and younger respondents.21 According to the Centers for Disease Control and Prevention’s 2013 Wireless Substitution Estimates, two-fifths of American adults—nearly half of Hispanic adults and nearly two-thirds of adults 25–29—

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live in households with only wireless telephones. Further, a number of research participants across multiple qualitative studies conducted by Horowitz Associates reported that they have landline phone lines, but do not actually have phones connected to those lines. Others noted that they might have a landline phone, but rarely answer it.

To mitigate the effects of declining landline penetration and to ensure better representation, many research companies, including the Pew Center, are including cell phone users as part of their sample frame. However, cell phone sampling is limited by higher costs and greater regulation. Moreover, just as online methodologies favor “heavy” Internet users, mobile approaches are likely to favor “heavy” mobile users.

**Address-Based Sampling:** In an effort to combat the decline in RDD effectiveness, another approach, address-based sampling (ABS), utilizes random samples of residential addresses to recruit participants by mail. In 2008, Knowledge Networks found ABS to be a successful tool for recruiting cell phone–only homes.

**Online Sampling:** Online recruitment methods have substantially increased cost efficiency, but are not immune from challenges regarding their bias. According to the Pew Center, in 2014, 87% of American adults now use the Internet, leaving out 13% of the population. As noted above, online recruitment methods also favor heavier Internet users, whose media behaviors may differ greatly from those of non-Internet users.

A number of research providers who rely on panels are exploring creative methods for recruitment. For example, to mitigate the problem of having too many heavy Internet users in online panels, Knowledge Networks actively recruits non-Internet users for its panels and then supplies them with netbooks and Internet access to create a sample. Other research companies use multimodal panel recruitment to mitigate the limitations of individual recruitment methods. Madansky and Koegel, in their 2011 white paper, discussed augmenting online samples with RDD phone or mobile samples as an approach to overcome the limitations of online sampling.

This issue of accurate representation is even more pronounced when considering cross-platform measurement’s need for a representative sample of users of multiple devices. Research from ESPN’s Project Blueprint reveals that while some cross-platform usage is nearly universal, usage of all five...
measured platforms (TV, radio, computer, smartphone, and tablet) by an individual is limited. The research shows that persons 18+ are, on average, exposed to content on 3.1 out of the five measured platforms on a weekly basis. However, only 3% are exposed to content from all five platforms weekly. Additionally, 60% of persons 18+ are exposed to three or fewer platforms in a typical week. Therefore, a panel constructed to measure cross-platform behaviors must take into account the varied cross-platform usage landscape, and be able to account for any biases in recruiting all different types of users.

**Weighting Issues:** One critical issue with sample data is the providers’ lack of transparency concerning their methodologies for calibrating their panel universe to the actual audience universe they claim to represent. Industry consensus is that “black box” weighting methodologies are not acceptable, and that research vendors should provide an explanation of how they are weighting their data, along with an assessment of data validity.

**Panels:** The benefits of well-designed and properly weighted panels in representing audience universes have been widely accepted by the media industry. Among other reasons, panels are valued for the depth of personal information that they can provide at the individual viewer/user/listener level. During the recruitment phase and beyond, large amounts of demographic and attitudinal information are collected for each panel household and for each individual within a panel household. This allows for a great deal of in-depth analysis of the audience for any given content or advertising. However, the small sample size of panels limits the measurement of less common behaviors (e.g., accurate measurement of lower rated programs, as well as the behaviors of members of smaller populations within the panel universe).

In response to the lack of granularity of panels, providers like comScore and Nielsen are creating mega-panels (over one million participants) to provide greater breadth and depth. While the creation of a mega-panel may be appealing for its broad scope and measurement potential, the fundamental challenges of recruitment and weighting that are inherent to panel development persist.

Another challenge related to panel samples is securing ongoing participant cooperation. One of the inherent benefits of a panel is its capacity for providing longitudinal tracking data with minimum nonresponse bias from a consistent group of participants. Substantial resources must be devoted to securing ongoing panelist compliance with a panel’s participation requirements. One issue with cooperation in a cross-platform panel, as cited by Joan Fitzgerald of comScore, is that of asking participants to do multiple tasks. Research Now, in a 2010 presentation on panel retention, highlighted the following issues: “Members are tolerant, but a consistently bad survey experience impacts loyalty” and “likelihood of inactivity is highest amongst the new members.” Arbitron, in cross-platform research, also noted issues with respondent cooperation and highlighted the

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importance of respondent incentives. Arbitron cautioned that, “If you want three screens[,] don’t reward a panelist for two screens.”

The development of successful methods to ensure respondent cooperation and participation in more involved cross-platform panels is an important challenge for cross-platform measurement.

How large a cross-platform panel is needed to obtain the necessary data and device usage information while balancing more practical concerns of panel quality, maintenance, and economics? This is a key research question to be addressed regarding the use of panels for cross-platform measurement.

Census-Type Data

Census-type data, while not a true census, provides aggregate data from entire universes of, for example, subscribers, users, or viewers. However, the universes measured have their limitations. For example, in the case of set-top box data, no one provider collects data from every television in the United States. In a 2009 article for Nielsen, Manish Bhatia, then President of Nielsen’s Advanced Digital Client Services, noted that while set-top box data have “significant measurement potential” due to their size and granularity, the risks related to their source are very real. Over-the-air, cable, satellite, and telco viewers have different viewing preferences. Ratings based solely on the habits of one viewer population would be biased toward those programming preferences at the expense of others.

In contrast to panel data, census-type data has more pronounced limitations with respect to demographic information. Rather than collecting demographic information directly from panel participants, the data are modeled or matched by third-party providers. For example, some set-top box providers pair raw set-top box data with demographic information that has been extrapolated based on the household’s geographic location. Census-type can also be directly matched with third-party demographic information from providers such as Experian and Facebook. TiVo, for example, partners with Experian and dunnhumby to match census-type TV tuning and online exposure data with grocery shopping and automotive purchase data, as well as demographic information. Nielsen also leverages partnerships with Facebook and Experian to associate census-type digital measurements with demographic data as part of their digital ratings services.

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The manipulation or weighting of census-type data to match a larger population is also constrained by the limited data available regarding respondents. A method of reconciling the unrepresentative nature of census-type data is to create a calibration panel to balance the data. For example, comScore utilizes a panel to provide additional information for its census-type data for Web site traffic. Demographic information from the calibration panel is applied to the census-type Web site traffic data to enable inferences about the demographics of a Web site’s users (e.g., 20% of viewers are women 25–54).\(^{42}\)

**DATA COLLECTION ISSUES FOR MEDIA MEASUREMENT**

**Self-Reported Data:** Before metered monitoring, and certainly before “big data,” media usage measurement relied exclusively on data that were self-reported. The quintessential example of this is the original Nielsen TV diary system for measuring television viewing, which is still in use today. Self-reported measurement methodologies are also used to measure consumption of print media (e.g., GfK’s Survey of the American Consumer that covers national newspaper, and magazine “read or looked into” reach for both the previous 7 days and the past 6 months).\(^{†}\)

Self-reported data collection can be simple in execution—a respondent is given a diary to fill out or a questionnaire to answer—but the validity of the resulting data is questionable. Studies evaluating the validity of respondents’ recall of their media consumption have consistently found sizeable discrepancies between perceived, or recalled, media consumption and actual consumption. In a 2004 research endeavor to explore this discrepancy, researchers concluded that consumers spend more than twice as much time with media as they think they do, including nearly three times as much TV viewing time.\(^{43}\) Further complicating the issue of validity in self-reported data is that the differences between self-reported and actual media consumption across different media—and even within the same medium—are, themselves, not reliable (not consistent), so discrepancies cannot be automatically factored in and corrected.\(^{44}\) For example, in contrast to the research cited above from 2004, a discrepancy in the opposite direction (i.e., higher self-reported usage compared to metered usage) between perceived and actual Internet usage was noted in 2010 by Sherrill Mane, Senior Vice President, Research, Analytics and Measurement, at the IAB. She commented that while average weekly Internet usage reported by Forrester in its North American Technographics Report (relying on self-report in a survey) was 13 hours, average weekly Internet usage reported by comScore, measured through a passive monitoring tool, was 7 hours and 24 minutes.\(^{45}\) The CRE’s 2009 Video Consumer Mapping Study also addressed the discrepancies between actual and perceived media

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\(^{†}\) While experimentation with radio-frequency identification (RFID) measurement of print has occurred, self-reported data remain the means by which print media are measured. see Mattlin, J., and McDonald, S., “Passive Measurement of Print: The Promise and the Perils of RFID Technology.”


\(^{44}\) Stipp, “Improving the Quality of Research and Reports About Consumers’ Use of Media,” Advertising Research Foundation, May 2013, p. 9.

consumption, concluding that “Serious caution needs to be applied in interpreting self-reported data for media use.” The CRE study compared self-reported and observed usage for portable video, online video, newspaper, radio, online, computer, and television. It found that television usage was substantially under-reported, while usage of online video and mobile video were over-reported.⁴⁶

Another issue with using self-reported data for media measurement was illustrated in a 2005 study from Marketing Evolution for Procter & Gamble (P&G). This study shows that respondents do not accurately segregate their memory of media usage by platform. One group, the exposed group, was exposed to a P&G advertisement on the Internet, while the second group, the control group, was exposed to a placebo Internet advertisement. Respondents were later asked where they recalled seeing the P&G advertisement. The two major findings of this experiment were: 1) in comparing the exposed respondents to the control group, who were not exposed to the P&G advertisement, there was no significant difference between groups in the percent of respondents who said they had seen the actual P&G advertisement on the Internet, and 2) the exposed respondents were more likely than the control group to report that they recalled seeing the advertisement on television, not on the Internet. This study highlights the fact that consumers are not the best source for valid information on their own media exposure.⁴⁷, ⁴⁸

### Passive Data Collection

An alternative to self-reported data, for some media formats, is passive data collection, which typically occurs with little, if any, respondent involvement. Across the media industry, there is a high level of agreement that a high-quality passive metering system produces more accurate and more detailed data than traditional survey methods,⁴⁹ but a closer examination of various passive measurement tools sheds light on the weaknesses of each of them. In some cases, these weaknesses are attributed to technical issues; in others, the weaknesses are attributed to human factors. How to weight and factor in the weaknesses of the various data collection systems is a key research issue as the media industry seeks to measure media consumption across platforms.

#### STB:

Monitoring devices (e.g., set-top boxes or meters) record and report the media usage of a given respondent or household. For example, Nielsen’s National People Meter is a measurement device that passively measures panel members’ viewing. However, a certain amount of human interaction is required. Participants must press a button on their Nielsen People Meter to indicate when they enter a room in which the TV is on and again when they leave. The fact that participants need to play an active role in operating the measurement device opens the door to noncompliance and may contribute to biases in the data. Some research has been conducted using coincidental surveys, in which respondents are called and asked whether they are watching TV. Their responses are then compared with the metered data. A 1993 study in New Zealand showed that 90% of panelists actually passed this test.⁵⁰ However, almost 20 years later, a 2011 review of media

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⁴⁹ Stipp, “Improving the Quality of Research and Reports About Consumers’ Use of Media,” Advertising Research Foundation, May 2013, p. 10.

measurement questioned whether compliance (i.e., whether participants actually press the button when they begin or end their TV viewing session) is an issue.51

**PPM:** Human factors also come into play in measurement with the Nielsen Audio Portable People Meter (PPM), which is clipped to the participant’s clothing. It is critical that the participant remember to keep the unit charged, wear it throughout the day, and use an earphone adapter when listening to radio through earphones so that broadcast radio signals can be detected. The participant must do this consistently and continuously.52

**Apps:** To address issues of compliance, SymphonyAM has developed a smartphone app that passively records the television viewing of each individual participant, removing the need for a separate measurement device. In order to capture exposure, however, the smartphone must be with the participant. The device is also subject to ambient noise issues and stops working during phone calls.53

There are similar issues with passive collection of census-type data. While passive census-type measurement has the potential to provide huge amounts of data, quantity does not necessarily equate to quality. Max Kilger, Ph.D., Chief Behavior Scientist with Experian Consumer Insights, highlighted this issue in the *Journal of Advertising Research,* noting that simply having more data does not mean better metrics. For example, if a user opens an application on his or her smartphone, uses it, and then puts the phone in his or her pocket without turning off the application, the application continues to passively count usage, even though the user has stopped using the application. This issue, which he termed a “pocket full of measurement problem,” is an important limitation of passive monitoring. Currently, a monitoring device merely counts how long the application or service has been open, not how long it was actually used. Kilger asked, “How much time was actually spent with the app? We can’t know.”54

In the case of television, the television set-top box collects second-by-second usage data, and, in some markets, these data are sold and used to report viewing behavior. In keeping with Kilger’s commentary, set-top boxes are not able to determine whether the TV set is off and will continue to collect viewing data long after viewers have left the room, as long as the box remains on. According to Nielsen, 10% of set-top boxes never get turned off over a typical month, and 30% remain on for over 24 hours at a time.55 While set-top box data providers do engage in quality control measures, information regarding exactly what those measures are is limited or unavailable.56

**Cookies:** In the digital space, passive data collection also has its share of challenges. A common system for collecting online media usage data is the installation of cookies, small text files that give individual Web sites the ability to remember preferences and credentials and to uniquely identify

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51 Ibid, p. 127.
52 Andrew Green, “Understanding Television Audiences,” September 2011, p. 4.
56 Brooks et al., p. 23.
Web browsers. Identifying unique browsers has been used as a proxy for identifying unique individuals. Unfortunately, cookies fail to capture unique individuals because multiple users may share a single device. Additionally, any one user who accesses the same site via more than one device would be counted as a separate individual for each device.

In August 2013, the IAB issued revised “Audience Reach Measurement Guidelines” to differentiate between “Unique Cookies,” “Unique Browsers,” “Unique Devices,” and “Unique Users.” In its guidelines, the IAB acknowledges that “while it is possible for census-based measures to produce counts of Unique Users under these guidelines, the threshold of measurement difficulty for achieving this measure in a census-based environment is quite high (generally because of the difficulty of being able to identify a cookie as a unique person consistently during the measurement period).” One suggestion made by the IAB in its 2013 revised guidelines was that data collection from website registrants be used as a possible source for counting “Unique Users,” provided that registrants represent a reasonable proportion of the total user-base.57

The validity of cookie measurement is also impacted by the fact that many users delete their cookies. In several studies between 2004 and 2009, research companies found that between 24% and 44% of respondents had deleted their cookies within the past month.58 Another challenge raised by cookie deletion is that the demographics of “cookie deleters” are unknown. They were once thought to be young, male, tech-savvy users, but now, with the ease of cookie deletion on most computer browsers, this is no longer believed to be the case.59

In addition to issues of validity, there is the looming issue of restricted access to the data. According to the IAB’s 2014 white paper “Privacy and Tracking in a Post-Cookie World,” the proliferation of cookies and their ability to report consumer behavior on the Internet without explicit user consent has raised greater concerns about online privacy, transparency, and control. As consumer concerns grow, there is a very real prospect of regulatory intervention that would impact the industry’s ability to collect universe data.60

ALIGNING METHODOLOGIES FOR CROSS-PLATFORM MEDIA MEASUREMENT

This section reviewed the methodological issues that impact the validity of data collected from both panels and census-based approaches. As mentioned earlier in this section, providers have already begun to combine census-type and panel data to develop cross-platform measures. For example, comScore uses a proprietary methodology called Unified Digital Measurement (UDM). UDM, according to comScore, “combines persons-level measurement from the 2-million-person comScore...

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global panel with census-informed tonnage of consumption to account for 100 percent of a property’s audience.”61

As more providers seek out ways to merge and integrate panel and census-type data from various sources to deliver cross-platform media metrics, independent assessments and guidelines will be required.

61 comScore, “Unified Digital Measurement™ Methodology.”
http://www.comscore.com/Media/Files/Misc/comScore_Unified_Digital_Measurement_Methodology_PDF
Section Three: Alignment of Reporting—Data Integration Versus Single-Source

DATA INTEGRATION VERSUS SINGLE-SOURCE

There are two different methods for bringing measurement of different platforms together—data integration and single-source.

- **Data integration** techniques combine two or more data sets to determine cross-media exposure.

- **Single-source measurement**, on the other hand, relies on each individual respondent to provide information for all platforms being used (and measured).

Each approach has its own benefits and limitations. In the context of cross-platform measurement, the industry will need to decide whether single-source measurement is an achievable goal, and whether or not data integration can be a successful substitute for single-source measurement.
The following chart lists the key media measurement products and details the data types each uses. For further information, please see Appendix A.

<table>
<thead>
<tr>
<th>Product</th>
<th>Medium</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nielsen National People Meter</td>
<td>TV</td>
<td>Single platform panel</td>
</tr>
<tr>
<td>Nielsen Local Service</td>
<td>TV</td>
<td>Single platform panel</td>
</tr>
<tr>
<td>Rentrak TV Essentials</td>
<td>TV</td>
<td>Single platform census + third-party demographics</td>
</tr>
<tr>
<td>Rentrak StationView Essentials</td>
<td>TV—Local</td>
<td>Single platform census + third-party demographics</td>
</tr>
<tr>
<td>comScore vCE</td>
<td>Digital</td>
<td>Data integration + panel, third-party demographics</td>
</tr>
<tr>
<td>Nielsen Online Campaign Ratings</td>
<td>Digital</td>
<td>Data integration + panel, third-party demographics</td>
</tr>
<tr>
<td>Nielsen Audio (Arbitron)</td>
<td>Radio</td>
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<td>Newspaper</td>
<td>Single platform survey</td>
</tr>
<tr>
<td>GfK MRI (Adult)</td>
<td>Magazine</td>
<td>Multiplatform survey</td>
</tr>
<tr>
<td>TAB Out of Home Ratings</td>
<td>Out of Home</td>
<td>Data integration</td>
</tr>
</tbody>
</table>

DATA INTEGRATION: A BRIEF OVERVIEW

Data integration leverages the vast amount of available data on each platform while minimizing the potential difficulties in collecting single-source data, including cost and respondent fatigue. There are several types of data integration used in media research. The two most relevant types are

- *directly matched data* and
- *unit-level ascription* (e.g., data fusion).

**Directly matched data** integration involves matching data sets using “common keys,” such as a name and address or digital cookies. For example, TiVo partners with Experian and dunnhumby to match census-type TV tuning and online exposure data with grocery shopping data, automotive purchase behavior, and demographic information through address matching. In the media investment space, Magna Global—in partnership with Experian, Rentrak, and comScore—has developed a proprietary cross-platform measurement, Magna High Definition Buying, which

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† The information contained in this table is a compilation of information provided directly to the Council for Research Excellence and publicly available information from the respective research vendors.


combines household-level STB data, online behavior data, and mobile data by linking the information through Experian’s cross-channel linkage capabilities.64

Unit-level ascription uses statistical ascription to infer characteristics and behaviors, rather than the common key methodology of matching respondents across sets. Unit-level ascription estimates how two or more separate sets of data fit together. For example, product purchase data can be ascribed to members of a panel that measures television audience viewing behavior by using common variables. By ascribing the product purchase data to the television panel, it is possible to estimate the viewing habits of product users.

One example of unit-level ascription is data fusion, an increasingly common process for integrating databases that uses linking variable to match respondents across different data sets. For example, fully employed 18–24-year-old men in a specific geographic region with a specific set of media habits may be matched with “like” men across two databases using data fusion.65 ESPN’s Enoch and Johnson noted that the strength of the data fusion approach is that, with proper implementation, any combination of data is theoretically possible.66

According to Michael Hess, EVP of Media Analytics at Nielsen, data integration techniques can improve advertising target efficiency by 10%–25% depending on the category vertical.67 From a practical point of view, one of data integration’s strengths is that it is a more cost-effective approach than expensive, custom single-source research.68

DATA INTEGRATION: LIMITATIONS OF DATA AND PRACTICAL CONSIDERATIONS

While data integration has its strengths—particularly its potential depth of data and flexibility of data sources—it also suffers from limitations. Many of these drawbacks stem from the issues explored in previous sections, including inconsistent definitions of impressions across platforms and the inherent weaknesses of different data collection systems. In order to develop a picture of cross-platform consumption, researchers are often forced to combine pieces of data from several different sources. In their evaluation of data integration, Hess and Doe noted that directly matched data integration is not perfect and that there is potential for error in combining data sets based on

SECTION THREE: ALIGNMENT OF REPORTING

DATA INTEGRATION VS. SINGLE-SOURCE DATA

Another potential issue with data integration, as discussed by Enoch and Johnson, is that the fuser must be careful to separate statistical artifacts from real behavior. The MRC has developed guidelines for data integration, including the requirement that the linking variables be very similar in definition. They also stipulate that the data supplier must have conducted appropriate and documented research on, among other things, the choice of integrating (or linking) variables. Despite the industry’s effort to establish and publish information on the potential validity of data integration (Nielsen claims 90%–95% validity with their data fusion techniques), distrust of data integration techniques remains. Further research is necessary to determine whether there are certain variables that should be included in all data integration products, what those common variables should be, how they should be gathered or what questions should be asked, and how the variables should be merged across different data sets in order to ensure greater validity, comparability, and user confidence.

SINGLE-SOURCE DATA: A BRIEF OVERVIEW

Single-source cross-platform measurement means that each respondent provides data on usage for all of the platforms being measured, as opposed to integrating data from several sources and multiple respondents. For example, SymphonyAM’s MediaPulse product provides single-source measurement across television, mobile, online, and social media. In order for SymphonyAM to collect these data, each panelist has an application installed on his or her smartphone, tablet, and/or PC that monitors his or her television, online video, and Internet services exposure, as well as social media activity.

There are various advantages to measuring media consumption through single-source data: no modeling is required, the panel has the potential for longitudinal measurement, and, importantly, the data provide unduplicated reach for the measured platforms. Measurement providers are able to determine, across multiple platforms, how a single individual is exposed to a particular piece of content or advertising. According to research from comScore, single-source data measurement is crucial to understanding cross-platform media consumption, as it allows companies to comprehend how an individual interacts with media across several platforms. comScore’s research shows that while TV drives the greatest audience reach, multiscreen users (consumers who use at least two of the following: TV, Internet, and mobile devices) have a lower frequency of exposure to TV advertisements, increasing the importance of digital platforms in maintaining audience exposure across platforms. The importance of single-source data was underscored by Nielsen Audio, at the

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71 Media Rating Council, “MRC Guidelines Concerning Data Integration.”
73 Symphony AM. www.symphonyam.com
time Arbitron, in their report on cross-platform research for CIMM, with the statement that “single-source, cross-platform data are critical to future scalable solutions as a calibration tool.”76 Project Blueprint, a collaboration between ESPN, comScore, and CIMM, while explicitly not a single-source measurement tool, utilizes a small, single-source panel to monitor TV, radio, computer, smartphone, and tablet usage to calibrate its census-type data. The small calibration panel allows Project Blueprint to leverage larger data sets and fine-tune its data.77

### SINGLE-SOURCE DATA: LIMITATIONS OF DATA AND PRACTICAL CONSIDERATIONS

While the use of single-source data appears to solve many of cross-platform measurement’s issues by providing information on an individual’s cross-platform behavior, it is not without its limitations. In order to collect representative data, researchers must recruit a representative sample, and achieving this, according to Enoch and Johnson, is a real challenge.78 Single-source data are also limited by sample size.79 In his review of cross-platform synergies for the Journal of Advertising Research, Henry Assael, a professor of marketing at NYU, noted that there are economic considerations in developing a single-source sample given the burden placed on the participants. He asserted that further research is necessary to evaluate whether passive measurement methods can be developed on a cost-effective basis.80 Alan Wurtzel, President, NBC Universal Research, also cited the issue of high costs for single-source panels, specifically noting incentive and maintenance costs, in a 2014 presentation on cross-platform measurement.81

Beyond the issue of sample size, technological barriers can also hamper the effectiveness of single-source data collection. For example, through involvement in the ESPN Project Blueprint cross-platform initiative, Arbitron developed a single-source panel that utilized their Portable People Meter to track television and online video; a PC meter to track Internet URLs on home and work computers; and a mobile device meter to track Internet and app usage on Android and BlackBerry smartphones. Arbitron noted that there were technological limitations to this approach. Only Windows PCs were eligible (tablets and Macs were ineligible), and only Android and BlackBerry phones were eligible (iPhones were ineligible).82 As a result of these limitations, entire parts of the population were excluded from the sample, limiting the scope of the data and placing a series of caveats on the research.

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In their evaluation of cross-platform measurement, Madansky and Koegel wrote, “Single-source data is the Holy Grail… but we are not there yet.” While single-source data may be the holy grail, more practical measures such as data integration may prevail. Professor Assael recommends that data integration methods be refined “to the point where they can serve as reliable surrogates for a single-source system.”

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Section Four: Platform Alignment—Variations in Engagement or Other Dimensions of the Media Consumption Experience

PLATFORM ALIGNMENT: VARIATIONS IN ENGAGEMENT

How a consumer interacts with or reacts to a particular piece of content may differ depending on the platform on which the content is consumed. In a cross-platform media environment, understanding the consumer experience with both content and advertising has become more important. The consumer’s attention, learning, and recall of advertising nested within that content may also differ depending on the platform. As the media industry moves toward a standard for cross-platform measurement, must we include the dimension of engagement or any other dimension of the consumer experience? If so, how can these dimensions of the consumer experience be defined to translate effectively across media platforms and audience behaviors?
In her white paper “From Television to Multi-Platform: Less from More or More for Less?” Gillian Doyle of the University of Glasgow noted that “stemming from the ‘lean forward’ rather than ‘lean back’ character of digital media consumption, content suppliers can now forge and capitalize on more engaged and intensive relationships with audiences than before.”

As audiences experience varying levels of engagement with content on digital media platforms, questions are surfacing within the industry—especially from agencies and media planners/buyers—about the relative effectiveness of advertising by platform, and about the cumulative impact of cross-platform or multimedia campaigns on engagement, compared to single-medium campaigns.

This section explores how the industry is defining engagement, as well as some current industry approaches and initiatives regarding the measurement of engagement.

We anticipate that the primary research phase will shed light on the issue of engagement, including how different industry sectors define engagement, whether and why they believe understanding engagement is important, and whether or not engagement should be included as a new dimension of media metrics as the industry strives toward the development of cross-platform measurement standards.

The following chart lists key media measurement products and the measures of engagement they provide. For further information, please see Appendix A.

<table>
<thead>
<tr>
<th>Product†</th>
<th>Medium</th>
<th>Engagement Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nielsen National People Meter</td>
<td>TV</td>
<td>Time spent/commercial ratings</td>
</tr>
<tr>
<td>Nielsen Local Service</td>
<td>TV</td>
<td>Time spent</td>
</tr>
<tr>
<td>Rentrak TV Essentials</td>
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<td>Time spent/commercial ratings</td>
</tr>
<tr>
<td>comScore vCE</td>
<td>Digital</td>
<td>Ad hover / viewability</td>
</tr>
<tr>
<td>Nielsen Online Campaign Ratings</td>
<td>Digital</td>
<td>N/A</td>
</tr>
<tr>
<td>Nielsen Audio (Arbitron)</td>
<td>Radio</td>
<td>Time spent / location</td>
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<td>Newspaper</td>
<td>Number of issues read or looked into (self-reported)</td>
</tr>
<tr>
<td>GfK MRI (Adult)</td>
<td>Magazine</td>
<td>Reading time, interest in advertising, number of issues read or looked into (self-reported)</td>
</tr>
<tr>
<td>TAB Out of Home Ratings</td>
<td>Out of Home</td>
<td>Visibility (all), dwell time (transit)</td>
</tr>
</tbody>
</table>

N/A: not applicable.

**HOW IS ENGAGEMENT DEFINED NOW?**

Before the media industry can devise a commonly-accepted tool to measure engagement, we must first define “engagement.” Currently, engagement is a term that is widely used, but inconsistently defined. As cited in the CRE’s User Experience white paper, according to an academic interviewee, owners.

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† The information contained in this table is a compilation of information provided directly to the Council for Research Excellence and publicly available information from the respective research vendors.
“There are at least 25 definitions of engagement.” The IAB commissioned a white paper in 2012 to explore the issue of engagement vis-à-vis online advertising. In this white paper, the IAB noted, “One of the challenges in trying to define engagement is that the word is used to talk about three different phenomena... There can be engagement with the advertising, the editorial content, or the audience.” In this paper, we focus on the issue of engagement with advertising. Addressing the issue of differing levels of engagement with content on the various viewing platforms will also be a critical component of cross-platform alignment.

The media industry has not developed a universally accepted definition of engagement. In 2006, the ARF defined engagement as “turning on a prospect to a brand idea enhanced by the surrounding context.” A review of current literature on engagement with advertising revealed that newer definitions of engagement have evolved to take into account user behaviors, such as selecting specific content, specifically responding to content, exhibiting different levels of attentiveness, or biometric responses. The IAB’s 2012 overview of engagement cited Jonah Goodhart, CEO of measurement company Moat, who asserted, “Engagement implies involvement, or a connection.”

In its recent 2014 white paper, “Defining and Measuring Digital Ad Engagement in a Cross-Platform World,” the IAB defined ad engagement as “A spectrum of consumer advertising activities and experiences—cognitive, emotional, and physical—that will have a positive impact on a brand.”

HOW IS ENGAGEMENT BEING MEASURED?

As the definition of engagement has evolved, so have theories on how to best measure this elusive and broad spectrum of “consumer advertising activities and experiences.” One of the simplest means of measuring engagement is time spent. Using time spent as the measure of engagement, Arbitron, in cross-platform research for NBC during the 2010 Olympics, found that viewers who watched the Olympics simultaneously on television and on the Internet were the most engaged viewers, spending more time watching the Olympics on television than viewers who watched on television alone. They concluded that “Olympics consumers who followed the Games on more than one platform were more engaged based on their increased media consumption” (emphasis added).

Time spent is only part of the engagement equation. Although in the CRE’s User Experience white paper, engagement was often referred to as time spent with media, the authors acknowledged that psychological or physiological measures are also incorporated in some research studies. According to Millward Brown, “engagement occurs when consumers devote some mental time and effort to the brand communication” (emphasis added).

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Recent research designed on measuring engagement has approached the topic in different ways and with different interpretations. In research presented by Microsoft and Nielsen IAG in 2010, engagement was measured by general, brand, and message recall and on likeability.⁹⁵ In a paper presented at the ARF’s Audience Measurement 5.0 Conference in 2010, Andre McGarrigle (Guardian News and Media, UK) and Sara Sanderson (Kantar Media Custom, UK) measured newspaper engagement by recency of reading, frequency of reading, time spent reading, and number of pickups. The study also included attitudinal variables such as informative/inspirational, loyalty/emotional attachment, and entertainment.⁹⁶ In a 2010 article in the Journal of Advertising Research that evaluated advertising effectiveness across platforms, engagement was measured by physiological indicators of emotional engagement such as respiratory response, heart rate, and changes in body posture.⁹⁷ In research published in the Journal of Advertising Research in 2013, Audrey Steele of Fox Broadcasting Company discussed engagement from a neuroscience perspective and measured emotional effects through eye tracking and biometrics.⁹⁸ Simmons’s Multi-Media Engagement Study measured engagement with TV networks/programs, magazines, and Web sites using seven global engagement definitions: inspirational, trustworthy, life enhancing, social interaction, personal timeout, ad attention/receptivity, and overall.⁹⁹

This year (2014), the IAB identified a series of core engagement metrics categorized into:

- cognitive (e.g., awareness, recall, familiarity, purchase intent),
- emotional (e.g., brand perception and physiological response), and
- behavioral measurements (e.g., gaze time, interactions, and social media interactions).¹⁰⁰

The question for the media industry remains: Which measures of engagement are most important and provide the best assessment of audiences’ relative engagement with content and advertising across multiple (and often cumulative) media platforms? Further, how critical will engagement be in the development of cross-platform metrics?

ENGAGEMENT ACROSS PLATFORMS: VARIATIONS IN THE DEFINITION OF ENGAGEMENT AND CONTRADICTORY FINDINGS

Current research comparing engagement on different media viewing platforms has been contradictory, due in part to differing methodologies and definitions of engagement. In research presented by Microsoft and Nielsen, online video was found to have performed better than

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television in delivering engagement.\textsuperscript{101} In contrast, in research using eye-tracking and biometric measurements, emotional engagement with unfamiliar brands was found to be higher when an advertisement was first seen on television, and online advertising was more effective when it was preceded by brand exposure on television.\textsuperscript{102} Additionally, research by the Television Bureau of Canada found that television is the most effective platform at building advertising engagement. In this study, engagement was defined as emotional engagement, which was measured by biometrics: skin conductivity, respiratory response, heart rate and heart-rate variability, and changes in body posture.\textsuperscript{103} Other research suggests that simple advertisements are equally effective across digital and print platforms, whereas more complex advertisements are more effective on larger screens.\textsuperscript{104}

The definitions of engagement and the perceived importance of measuring engagement in the context of cross-platform media measurement will be addressed and reported in the final white paper.

\textsuperscript{104} Nielsen, “Neurological Assessment of Cross Screen Advertising,” June 13, 2013.
Section Five: Overview of Cross-Platform Measurement Initiatives

OVERVIEW OF PAST AND CURRENT CROSS-PLATFORM MEASUREMENT INITIATIVES

As cross-platform measurement becomes increasingly important and in demand, an important component in understanding where to go next is to understand what initiatives have already been undertaken and what the industry can learn from them. This section provides an overview of major past and current cross-platform measurement initiatives and the methodology employed by each, as well as some commentary on their strengths, weaknesses, and potential next steps. The initiatives covered, in order of launch date, are:

1) Project Apollo (2006–2008)
2) NBCU’s Total Audience Measurement Index (TAMi) (2008–present)
3) SymphonyAM MediaPulse (2011–present)
4) Project Blueprint (2012–present)
5) Simmons Connect (January 2012–present)
6) Nielsen’s Cross-Platform Ratings (March 2012–present)
7) TiVo Research and Analytics Cross Media Measurement (February 2013–present)
8) comScore’s Media Metrix Multi-Platform (March 2013–present)
9) CNN All-Screen (March 2013–present)
PROJECT APOLLO

Overview

Project Apollo, a collaboration between Nielsen and Arbitron (now Nielsen Audio),† was the earliest (2006–2008) cross-platform measurement effort. Using data collected from Arbitron’s Portable People Meters, ACNielsen’s Homescan technology, and additional survey tools, Project Apollo was conceived as a single-source, national market research tool that would provide a comprehensive picture of the consumer by linking advertising exposures across different media to actual purchase behavior. While Project Apollo was an important early step into cross-platform measurement, combining television and radio exposure with purchasing behavior, it was terminated in February 2008 due to insufficient client investment.105

Methodology

For Project Apollo, Nielsen and Arbitron recruited and maintained a pilot panel of over 11,000 persons in 5,000 households. Data were collected from this panel from three sources: Arbitron’s Portable People Meters, ACNielsen’s Homescan technology, and survey instruments.

Arbitron’s PPMs captured exposure to broadcast and cable television, AM/FM radio, and the audio-based commercials on those platforms. In order to measure exposure to other media, including newspapers, magazines, and circulars, Project Apollo utilized additional, unspecified survey instruments.

In addition to measuring exposure, Project Apollo collected packaged goods purchase data from panelists through ACNielsen’s Homescan technology.

The data from these three sources were then aggregated to provide a more comprehensive picture of how media exposure—and the advertising contained in the media—correlates with subsequent purchase decisions.106

Strengths and Weaknesses

Although Project Apollo was unable to garner enough client investment to continue the initiative at the time, it was a momentous first step in cross-platform measurement with an important takeaway and consideration for current and future initiatives. Namely, as pointed out by Dave Thomas, President of Media Client Services at Nielsen, the “share of households willing to let Nielsen and

† In this section, we refer to Nielsen Audio as Arbitron because the project occurred in full before Nielsen purchased Arbitron.
106 Ibid.
Arbitron track three or four activities was far lower than the percentage that normally agrees to sign up for Nielsen’s television panels.107

**NBCU’S TOTAL AUDIENCE MEASUREMENT INDEX (TAMi)**

**Overview**

In July 2008, in anticipation of the 2008 Beijing Summer Olympics, NBCU announced that it had developed its own cross-platform viewing measurement, TAMi—the Total Audience Measurement Index. By combining data from multiple measurement sources, TAMi provides the total number of views for content across TV, computer, mobile, and VOD.108 Importantly, TAMi is not an unduplicated figure—i.e., if the same person accesses content on TV and then visits NBCOlympics.com, he or she is counted twice.

Unlike most of the other initiatives covered in this section, TAMi is not a syndicated product. TAMi has been used for measurement of the Olympics and selected NBC primetime shows. TAMi is intended primarily as a measurement of total reach, unique online users, and time spent on NBC Web sites.109 While NBC hopes that advertisers will take it into consideration, TAMi is not intended to serve as a form of ad sales currency.110

**Methodology**

NBC calculates TAMi by aggregating measurements from numerous industry sources. The sources used to generate TAMi have evolved since TAMi’s inception in 2008. Initially, NBC collected data from Nielsen (TV), Rentrak (VOD), Omniture (now part of the Adobe Marketing Cloud) and Quantcast.

To calculate TAMi for network shows, NBC collects data from Nielsen (TV), Rentrak (VOD, downloads from Amazon, Microsoft Xbox, and Microsoft Zune), Omniture (NBC.com, mobile streams), Apple (iTunes downloads), and Starcut (mobile streams).111

For the 2010 Olympics, NBC turned to using Arbitron, Omniture, comScore, and TiVo.112 Using a 2,000-person panel, NBC collected data in 33 markets using Arbitron’s Portable People Meter.

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which were then integrated with comScore and Omniture Internet data to provide measurements of TV and online viewing. In lieu of Nielsen TV viewing data, NBC turned to TiVo for second-by-second audience measurement.

**Strengths and Weaknesses**

As one of the earliest cross-platform measurement projects, TAMi was initially viewed as a breakthrough in multiplatform measurement. TAMi has since been criticized for several key weaknesses.

For both Olympics coverage and specific shows, TAMi includes duplicated views, which means that it cannot provide an accurate measurement of unique reach. Beyond duplication, in 2008 TAMi received criticism for how it counts Internet streams: every stream counts, regardless of whether it came from the same show or for how long it was viewed.\(^{113}\) For example, NBC breaks episodes up into six-minute clips, each of which counts as a single stream. If a viewer watches an entire show—typically six clips for an hour-long show—that viewer generates six streams, thereby inflating the total number of streams.\(^{114}\)

The sources used for the various platforms can change depending upon the current measurement capabilities. The underlying point is that NBCU attempts to use TAMi to reflect the “total consumption” of their content.

**On the Horizon**

TAMi is currently used to measure all NBCU prime-time network shows.

**SYMPHONYAM MEDIAPULSE**

**Overview**

SymphonyAM’s MediaPulse is a SaaS-based technology platform providing cross-platform exposure to media content and advertising across TV, mobile, digital, and social media. Using data collected from a single-source, passive mobile monitoring app, SymphonyAM is geared toward advertisers, publishers, agencies and research companies looking to better understand cross-platform usage, including in- and out-of-home usage and simultaneous media usage. SymphonyAM’s cross-media information is accessed by the MediaPulse Reporting Platform. The MediaPulse technology platform can also be licensed for independent usage.

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Methodology

SymphonyAM maintains its Media Insiders panel, which consists of approximately 11,000 panelists over the age of 17. Signing up for the panel entails a basic registration process and the installation of the Media Insider Mobile (MIMobile) app on relevant devices. Once installed, the MIMobile app stays active and does not require frequent, if any, attention from the panelist. During the registration process, panelists are also asked to link their social media accounts to their Media Insiders account. Participants are incentivized in one of two ways: entry into weekly, monthly, and quarterly sweepstakes, or a points-based system where the points can be redeemed for cash or prizes. Participants select which incentive option they would like to receive during the registration process. Further incentives are offered for remaining an active panelist for three months.

To supplement its MIMobile app data collection, SymphonyAM also conducts occasional panelist surveys.

Through the installed MIMobile app, SymphonyAM tracks TV viewing, mobile device usage, and social media usage. To track TV viewing, SymphonyAM utilizes Gracenote technology, which matches recorded sound samples to its database of TV programs. Gracenote can identify the program watched, the channel watched, and the date and time of broadcasting. In addition to program data, SymphonyAM can identify TV advertising through an overlay of viewing data with ad airing data from iSpot.tv.

As noted earlier, Media Insider panelists are asked to link their social media accounts to the MIMobile app. For the social media accounts that panelists have linked, “likes,” comments, and status updates are captured.

On the mobile devices where MIMobile is installed, SymphonyAM collects data on app usage, Internet traffic, search queries, videos streamed or downloaded, and advertising served.

SymphonyAM has also begun rolling out Media Insiders Connect, which is a computer-based version of the Media Insiders app, allowing SymphonyAM to monitor Web pages visited, videos watched, and online advertising exposure.

Because MIMobile is only available on iOS and Android devices, SymphonyAM balances its sample and weights its collected data to the U.S. smartphone population.

Strengths and Weaknesses

SymphonyAM’s MediaPulse has many strengths. The monitoring app at the core of SymphonyAM’s methodology measures across TV, mobile, social media, and computers, providing true single-source data. Additionally, because the monitoring device is mobile, it is able to capture both in- and out-of-home media usage. Unlike other initiatives mentioned in this section, the true single-source nature of

115 Symphony AM
116 Media Insiders. https://www.mediainsiderspanel.com
117 Symphony AM. http://www.symphonyam.com/technologies/
118 Symphony AM
119 Media Insiders. https://www.mediainsiderspanel.com
MediaPulse also allows SymphonyAM to provide data on simultaneous usage—e.g., using a smartphone while watching television.

On the other hand, app-based monitoring has several weaknesses. Most importantly, the device must be on and with the user at all times. If a participant, for example, leaves his or her phone in the living room but decides to watch TV in the bedroom, SymphonyAM would not capture that viewing session.

SymphonyAM allows anyone over the age of 13 to register for its Media Insiders panel.\(^{120}\) While this may help keep its panel size up, it also provides little control over who joins the panel and makes SymphonyAM susceptible to self-selection bias.

On the Horizon

SymphonyAM recently announced a partnership with TiVo Research and Analytics. TiVo Research and Analytics will license SymphonyAM’s mobile and app technology, which can then be married to TiVo’s set-top box data. TiVo and SymphonyAM will collaborate to recruit TiVo panelists to opt into a single-source, cross-platform panel. This agreement took effect on April 1, 2014.\(^ {121}\)

PROJECT BLUEPRINT

Overview

First piloted in 2012 by ESPN, Project Blueprint is an ongoing cross-platform collaboration between CIMM, ESPN, comScore, and Nielsen Audio (formerly Arbitron). The objective of Project Blueprint, which combines data from established single- and multiplatform measurement sources, is to provide a continuous measurement of unduplicated individuals across five platforms: TV, radio, computer, smartphone, and tablet. Project Blueprint is intended primarily as a cross-platform measurement tool to help content providers, media planners and buyers, and advertisers strategize (with no intention to use Project Blueprint as industry currency, according to those involved with its development).\(^ {122}\)

Methodology

Project Blueprint utilizes a hybrid methodology to combine single- and multiplatform measurement data into an integrated five-platform data set.

For television measurement, Project Blueprint combines comScore’s set-top box data with demographic viewing information from Nielsen Audio’s Portable People Meter. The Portable People Meter also provides information on out-of-home TV viewing. Broadcast radio measurement

\(^{120}\) Ibid.


\(^{122}\) Artie Bulgrin and Glenn Enoch, “Project Blueprint: A Path to a Multiplatform Solution,” ARF Audience Measurement 8.0 Conference, June 12, 2013.
is provided by Nielsen Audio’s Portable People Meter. For computer, smartphone, and tablet measurement, Project Blueprint utilizes comScore’s Unified Data Measurement (UDM).

Data from these sources are integrated and run through a “duplication engine,” a custom data model that provides data on unduplicated usage. To date, TV-radio, radio-digital, TV-computer, digital (computer-smartphone-tablet), and TV-digital de-duplication is possible through the duplication engine. However, when Project Blueprint becomes available as a syndicated service to the media industry, radio de-duplication may not be an immediately available feature.

In addition to combining single- and multiplatform data sets, Project Blueprint has developed a 2,000-person calibration panel that monitors participants’ consumption of media across all five platforms. This calibration panel is a subset of Nielsen Audio’s national PPM panel and uses Nielsen Audio’s LinkMeter, a custom methodology, to link PPM panelists to their comScore data, thereby delivering a single-source measurement across all five platforms.\(^\text{123}\)

**Strengths and Weaknesses**

One of Project Blueprint’s key strengths is utilizing the capabilities made available by existing methodologies to provide non-duplicated measurements. As Jane Clarke, Managing Director of CIMM, noted, “The big challenge in cross-platform measurement is, how do you de-dupe across platforms? […] This is one of the biggest breakthroughs in research methodology.”\(^\text{124}\)

On the other hand, Project Blueprint leverages data integration. As such, this cross-platform measurement is subject to the same limitations noted in Section Three (Alignment of Reporting—Data Integration Versus Single-Source), such as the weaknesses of the underlying data collection systems and the potential for error in combining data sets.

**On the Horizon**

Project Blueprint is still being fine-tuned, with initial tests showing promise. Assuming successful completion of tests in Fall 2014, comScore will determine a launch date for a syndicated service. This syndicated service will allow subscribers to obtain weekly and, possibly, daily data on cross-platform performance.\(^\text{125}\) Time-shifted viewing and campaign/commercial measurement are being included in the CIMM phase two evaluation of Project Blueprint. Data will be made available to CIMM members in the fall of 2014.\(^\text{126}\)

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\(^{123}\) Artie Bulgrin and Glenn Enoch, “Project Blueprint: A Path to a Multiplatform Solution,” ARF Audience Measurement 8.0 Conference, June 12, 2013.


\(^{126}\) ESPN
INTRODUCED IN JANUARY 2012, SIMMONS CONNECT IS A CONSUMER PROFILING TOOL THAT PROVIDES DETAILED INSIGHT ON CONSUMERS’ USE OF 11 TRADITIONAL AND DIGITAL MEDIA PLATFORMS (MAGAZINES, NEWSPAPERS, TELEVISION, HOME COMPUTERS, WORK COMPUTERS, MP3 PLAYERS, CELL PHONES, RADIO, GAME CONSOLES, E-READERS, AND TABLETS). REACH, TIME SPENT AND ACTIVITY USAGE MEASURES ARE INTEGRATED WITH CONSUMER INSIGHTS INCLUDING BRAND PREFERENCES, SHOPPING HABITS, OPINIONS, LIFESTYLES, MEDIA CONSUMPTION, AND LANGUAGE PREFERENCES OF HISPANICS, TO PROVIDE A TRUE SINGLE-SOURCE VIEW TO BETTER UNDERSTAND TARGET CONSUMERS.

**Methodology**

Simmons Connect consists of a digital panel supplemented by self-reported media consumption and consumer insights from Simmons’ National Consumer Study Survey (NCS) and the National Hispanic Consumer Study Survey (NHCS). The digital panel collects online and mobile activities of opt-in panelists (such as use of mobile apps and web behaviors) through passive measurement applications that panelists install on their smartphones, tablets and home computers. Since mobile and digital media panelists include U.S. adults who have completed either the Simmons’ NCS or NHCS survey, Simmons Connect provides marketers with a broad understanding of the mobile and digital consumer.

Simmons Connect can be linked and integrated with other Experian data sets and processes as well as a clients’ CRM or audience segments to support consumer profiling, media planning, media buying and campaign measurement.

Simmons Connect can also be linked to third-party data sets to provide deeper purchase and media behavior insights including Nielsen, IRI, and Rentrak.

**Strengths and Weaknesses**

One of Simmons Connect’s strengths is its broad reach across media platforms. By integrating passive measurement data from a digital panel with self-reported consumption information from its established consumer surveys, Simmons Connect provides a large amount of information about media consumption. Furthermore, the integration of Simmons’ consumer surveys provides robust consumer demographic, attitudinal and purchase information that is not typically included in other cross-platform measurement initiatives.

Simmons Connect’s data collection methodologies are a consideration when evaluating the service. Although it uses passive measurement to collect usage data for smartphones, tablets, and home computers, other platforms, including television, are measured through self-reported surveys. As is discussed in Section Two (Alignment of Methodologies), self-reported data can be unreliable as consumers are often unable to accurately recall their media usage.

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127 Experian Marketing Services Simmons Connect: Methodology Overview (2013)
NIELSEN CROSS-PLATFORM CAMPAIGN RATINGS (XCR)

Overview

Nielsen first announced their Cross-Platform Campaign Ratings (XCR) program in March 2012, with an initial release in April 2012. Originally developed in collaboration with GroupM, XCR is now available to all Nielsen clients. XCR provides an advertising campaign’s total reach across TV and digital by integrating TV advertising measurements from Nielsen’s National People Meter Panel and online advertising measurements from Nielsen’s Online Campaign Ratings, with duplication calibration from Nielsen’s Cross-Platform Homes panel. With a focus on advertising, Nielsen’s XCR measures the reach of specific advertising campaigns, rather than total brand or content reach.

Methodology

In order to arrive at a campaign’s total reach across TV and digital, Nielsen first measures each medium independently. Nielsen asks advertisers to insert a Nielsen audio tag in television ads, and digital assets are tagged with a Nielsen Online Campaign Rating (OCR) tag. Frequency and reach of the television ads are then measured by Nielsen’s National People Meter panel, while Nielsen’s OCR solution captures the reach and frequency of digital placements.

These individual measurements are then integrated and calibrated using Nielsen’s Cross-Platform Homes panel (approximately 15,000 households), which provides a duplication factor. This duplication factor adjusts the individual reach measurements, providing calculated, unduplicated measures of TV-only, digital-only, and TV-plus-digital reach and frequency.

Strengths and Weaknesses

At present, XCR only covers TV and digital, with no integration of mobile viewing (app or browser). Nielsen is currently working on integrating mobile viewing into their C3 ratings. Another limitation of XCR is that it does not currently measure out-of-home viewing. Nielsen is currently working on providing out-of-home viewing measurements.

The greatest strength of XCR is Nielsen’s position in the media ratings industry. The industry turns to Nielsen to provide measurements they can buy against, and XCR is the first cross-platform product to serve as currency. As Nielsen integrates mobile viewing over the course of this year and into 2015, the strength and value of XCR will only increase.

With the upcoming integration of mobile, there are still some limitations to be considered. Tagged digital advertising on mobile apps or browsers will be measured by XCR. However, the mobile

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130 Ibid.

content must have the exact same commercials as the live television version of the same content in order to be counted in C3.\textsuperscript{132}

\textit{On the Horizon}

As noted, Nielsen has announced that it will be introducing mobile ratings into its C3 ratings this fall in Mobile TV Ratings.\textsuperscript{133} Nielsen has begun releasing the assets—including watermarks to ID3 encoding, ID3 encoding guidelines, the app software developer kit (SDK), and the mobile browser SDK—that programmers will need in order to integrate mobile viewings. Nielsen expects to have a preview of mobile integration data in Q3 2014, with full production beginning in Fall 2014.\textsuperscript{134}

Cross-Platform Campaign Ratings will include mobile advertising once Nielsen’s Cross-Platform Homes panel is expanded to include mobile device measurement. This panel expansion is slated to begin in 2015.

\textbf{COMSCORE’S MEDIA METRIX MULTI-PLATFORM}

\textit{Overview}

Building on comScore’s Media Metrix, Mobile Metrix, and Video Metrix products, Media Metrix Multi-Platform is designed to provide unduplicated measurements of audience size, duration, visits, total reach, frequency, and GRP. The product measures Web site, video and app usages across PC/Mac computers, smartphones, and tablets.

\textit{Methodology}

Media Metrix Multi-Platform combines measurements from its three core audience measurement products—Media Metrix, Video Metrix, and Mobile Metrix. It measures audience size, duration, visits, page and video views. Each of the three core products measures a subset of the previously listed metrics on its respective platform (Media Metrix: PC/Mac audiences, Video Metrix: online video audiences, Mobile Metrix: smartphone and tablet audiences for browsing and apps).\textsuperscript{135} In order to capture a “holistic view of media companies’ total digital populations,” the measurements from the three products are combined and de-duplicated.\textsuperscript{136}

According to comScore’s Media Metrix Multiplatform Webinar, because of “well-documented issues with cookies prohibit[ing] audience measurement using tags across devices/platforms,” comScore created an “an ad hoc ‘dynamic panel’ at the household level by observing consumption by device

\begin{itemize}
  \item[\textsuperscript{134}] David Wong, “Nielsen Cross-Platform Campaign Ratings (XCR),” June 2012. \texttt{http://www.aaaa.org/agency/media/communities/measurement/Documents/060512_measurement_nielsen.pdf}
  \item[\textsuperscript{135}] Ibid.
  \item[\textsuperscript{136}] http://www.comscore.com/Products/Audience_Analytics/Media_Metrix_Multi-Platform
\end{itemize}
by IP address” in order to “measure behavior and overlap.” This panel includes approximately one million households. Using this dynamic panel, comScore “observe[s] multi-platform usage directly from tagged entities.” It “extrapolate[s] [these observations] into a generalized algorithm and project[s] duplication using that algorithm.”137

Strengths and Weaknesses

One of the key strengths of Media Metrix Multi-Platform is that it overcomes the various issues with using cookies for audience measurement. Rather than using cookies to track audiences, Media Metrix Multi-Platform uses a dynamic panel to “measure behavior and overlap.”138 Another strength, from a business perspective, is that comScore’s Media Metrix products are already well-established in the industry. A beta version of Media Metrix Multi-Platform was initially introduced to Media Metrix subscribers before it became an add-on tier in February 2013. As of June 2013, the product had 150 subscribers.139

However, like Project Blueprint, comScore’s Media Metrix Multi-Platform leverages data integration. As such, it too is subject to the limitations noted in Section Three (Alignment of Reporting—Data Integration Versus Single-Source), such as the weaknesses of the underlying data collection systems and the potential for error in combining data sets. Further, though it does offer cross-platform measurement of Web site, video, and app usages across desktops, smartphones, and tablets, it does not include television viewing data.

TIVO RESEARCH AND ANALYTICS (TRA) CROSS MEDIA MEASUREMENT

Overview

In February 2013, TiVo Research and Analytics (TRA) announced the release of its cross-media measurement solution. TRA’s product measures household-level exposure to TV and online advertising campaigns and content. It also matches those cross-media exposure data with third-party CPG, Auto and Pharma purchase data to provide advertisers with broad data on campaign reach and the impact of digital and TV advertising.140 In addition, TiVo Research matches first party data supplied by marketers with its cross-media exposure data.

139 Ibid.
SECTION FIVE: OVERVIEW OF CROSS-PLATFORM INITIATIVES

Methodology

TRA collects and matches data from multiple sources to provide what it has termed “the largest single-source sample of naturally occurring data.”\(^{141}\) The data collected by TRA include:

- exposure to online advertising and content from 70 million households (Experian, comScore and Datalogix),
- TV tuning data from 500,000 TV households (TiVo and FourthWall Media),
- grocery/CPG purchase data from 40 million households (dunnhumby),
- automotive purchase records from 115 million households (Experian),
- pharmaceutical purchase data from 1.6 billion healthcare claims de-identified at the patient level (IMS Health), and
- credit card spending data from 30 million households.\(^{142,143,144}\)

Using addresses, Experian matches household data and creates an ID for each household. Any personally identifiable information (PII) is removed. TiVo Research then matches the TV tuning, online exposure, grocery shopping and automotive purchasing data, and demographic data.\(^{145}\)

Additionally, through its partnership with Datalogix, TRA allows advertisers to target online audiences based on TV viewing data.

Strengths and Weaknesses

Through their partnerships with third-party data providers (e.g., Experian and dunnhumby), TiVo is able to match campaign exposure with actual purchasing behaviors. While TRA uses the term “single-source” to describe its data, the combination of data sets through address matching is a form of data integration, “directly matched data integration,” which is not truly single-source. As such, it is subject to the same limitations noted in Section Three (Alignment of Reporting—Data Integration Versus Single-Source), such as the weaknesses of the underlying data collection systems and the potential for error in combining data sets.

Despite weighting and sampling efforts, an inherent weakness in TiVo’s methodology is that it is tied to a sample of TiVo users, which is not representative of the U.S. TV universe.

Also, unlike some of the other initiatives covered in this section, TiVo Research’s Cross Media Measurement provides household-level, not individual-level, measurement.

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\(^{141}\) Ibid.


\(^{144}\) TiVo Research

\(^{145}\) Ibid.
On the Horizon

As noted earlier, TiVo Research and Analytics announced a multi-year partnership (effective April 1, 2014) with SymphonyAM in March 2014. TiVo Research and SymphonyAM will be recruiting TiVo panelists to participate in their joint, single-source cross-media panel.

CNN ALL-SCREEN

Overview

Driven by concerns that CNN’s audience was not accurately covered by Nielsen’s C3 rating because it did not include out-of-home viewing, CNN partnered with Nielsen and Nielsen Audio (at the time, Arbitron) in 2013 to develop its All-Screen initiative. The goal of the All-Screen initiative is to provide a more accurate measurement of ad impressions by measuring cross-platform and out-of-home viewing. This measurement is now included in advertisers’ post-buy analyses and is intended to provide a more comprehensive view of the audience reached by ad campaigns.

Methodology

As described in a presentation to CIMM on April 24, 2014, the methodology of CNN All-Screen is as follows:

CNN draws upon seven data sources that measure in- and out-of-home TV viewing, digital exposure, and mobile exposure. Nielsen’s National People Meter (NPM) (panel) provides in-home TV viewing estimates, Nielsen Audio’s Portable People Meter (PPM) provides out-of-home TV viewing estimates, Nielsen Online’s RDD/online panel and server data from Omniture provide online exposure estimates, and Nielsen’s mobile panel and server data from Bango provide mobile exposure estimates. The seventh source, the All Media custom survey, is an online survey of 1,000 persons 18+ who access CNN on the TV, online, or on a mobile device. The All Media custom survey measures “cross-media duplication.”

After individual adjustments, the TV, online, and mobile estimates are combined, and “overlap coefficients,” derived from the All Media survey, are applied to the “media estimates to estimate duplication.”

Throughout the entire process, CNN has numerous validation checks to ensure data quality.

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150 Ibid.
151 Ibid.
Strengths and Weaknesses

CNN is now able to demonstrate to its advertisers the lift it gets from out-of-home viewing, which is not included in Nielsen’s C3 ratings, and from digital and mobile exposure, which are just beginning to be incorporated in C3 ratings. For example, CNN shows that its monthly reach among adults 25–54 increases 88% when it includes out-of-home viewing and digital and mobile exposure.152

Like Project Blueprint and comScore Media Metrix, CNN All-Screen leverages data integration. As such, it is also subject to the limitations noted in Section Three (Alignment of Reporting—Data Integration Versus Single-Source), such as the weaknesses of the underlying data collection systems and the potential for error in combining data sets.

On the Horizon

CNN is in talks with the Media Rating Council about reviewing the All-Screen process to validate the fusion. According to a recent presentation of CNN All-Screen by Turner and Nielsen, future developments will include: “improv[ing] alignment of digital/mobile reach with currency measurements,” “enhanc[ing] sales planning capability,” and “mov[ing] from survey to another methodology to incorporate digital and mobile with TV.”153

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153 Ibid.
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