Program Value in the Evolving Television Audience Marketplace

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Since it was introduced at the 1939 World’s Fair, television has captivated the public imagination. In fact, according to the Census Bureau, watching television is our favorite leisure activity. Estimates of the specific amount of time Americans watch range from an average of three to almost five hours per day. On top of that, we watch video over the Internet and in many other formats, and interact with video content on social media platforms and mobile devices. While we usually don’t think about it, how we watch and engage with video matters a lot to those who create and fund content. Advertising supports the vast majority of the video programming available on television, and the economic underpinnings of advertising are being disrupted by the Internet and digital technology in general.

When we launched the Time Warner Cable Research Program on Digital Communications, we hoped to fund scholarship on topics that reflected the pace of innovation in the dynamic communications marketplace. In this research paper, Professor Philip Napoli argues that the very forces contributing most to the disruption of traditional television will play an important role in building the new video marketplace.

Specifically, the report reviews current approaches to measuring and valuing “audiences” for television programming and then assesses the tools provided by digital technologies, which offer new insights into what drives viewer interest and engagement. These new tools are being integrated into the marketplace and will have an impact not only on what viewers see, but on how well viewer interests are understood by the creators and sponsors of video programming.

Most policymakers and policy stakeholders continue to rely on a traditional understanding of media measurement to talk about the popularity of television programming and draw conclusions about how the marketplace is working. In the future, they likely will reference data from tools that provide a deeper and more nuanced understanding of audience preferences. Professor Napoli raises important questions about the “value” of programs in the age of digital communications, empowered by broadband and filtered through tools such as social media, micro-blogging, and virtual networking.

As new criteria emerge for measuring program success, it is likely they will be used to produce and finance new content that is more responsive to the demands of diverse audiences. In that marketplace, for example, social media data might serve as a mechanism to diversify programming available on television. The analysis in this report should help further energize interest in the role of data and data analytics as a mechanism for creating a more robust marketplace of ideas in video programming. In short, Professor Napoli has made just the sort of thoughtful contribution we were looking for when we launched the Research Program.

We hope this report stimulates debate and encourages a more thoughtful policy debate. As always, we look forward to your comments and feedback.
The television industry is in the midst of a period of profound technological and economic change. Audiences are becoming increasingly fragmented across a growing range of delivery platforms. Web-based delivery of television programming to computers, mobile devices, and tablets is developing rapidly, alongside other platforms such as on-demand video systems, DVRs, and, of course, traditional broadcast/cable/satellite delivery. High bandwidth and diminished barriers to entry associated with many of these mechanisms for delivering video programming mean that the range of content options available to the viewer has increased dramatically as well. In an environment of such increased audience fragmentation, the traditional business model of selling audiences on the basis of their size and demographic characteristics becomes more difficult to implement, particularly for those content providers residing deep in the growing “long tail” (Anderson, 2006) of the distribution of audience attention (Napoli, 2011).

However, many of these new platforms that are contributing to the fragmentation of television audiences also facilitate new ways of gathering insights about these audiences. The interactivity inherent in many new media platforms creates a “backchannel” of audience data that provides participants in the audience marketplace with an unprecedented flow of information about a wide range of dimensions of the audiences, many of which at this point appear to be proving to be of value to advertisers. Elements of audience behavior such as recall, engagement, and behavioral response are increasingly being captured by measurement firms and utilized in the analysis and valuation of television audiences as a supplement to traditional audience demographics. This combination of developments has been termed “audience evolution” (Napoli, 2011).

This paper provides an assessment of both the conceptual and methodological underpinnings of these new analytical approaches to the television audience. It considers how shifts to these new criteria for program and audience value could impact the industry. In addressing these issues, this paper focuses in particular on how various industry stakeholders are reacting to and utilizing the new analytical tools available to them.

The paper is organized as follows: Part One provides the theoretical and methodological context for this study. It also provides the relevant background on developments affecting the measurement and valuation of television audiences. Part Two examines the new analytical approaches being employed to measure and value television audiences — particularly the new social media metrics being developed to assess the performance of individual television programs. This part also explores key concerns that marketplace participants have raised regarding these new approaches to measuring and valuing television audiences. Part Three examines how these new ways of measuring and valuing television audiences are being integrated into the television audience marketplace. We also consider how the widespread adoption of these alternative performance metrics might influence television programming. The paper concludes by offering suggestions for future research.

Note: The views expressed are those of the author and not necessarily those of Time Warner Cable or the Time Warner Cable Research Program on Digital Communications.
Part One: Market Information Regimes and Value Criteria in the Marketplace

The concept of “market information regimes” was introduced by Anand and Peterson (2000) in reference to socially constructed mechanisms that marketplace participants use to assess their own and competitors’ performances. Market information regimes can range from a ranking of business schools done by a publication such as *Business Week* (Elsbach & Kramer, 1996) to best-seller lists of books, produced by entities such as *The New York Times* and BookScan (Andrews & Napoli, 2006), to the *Billboard* charts ranking the most popular songs in the country (Anand & Peterson, 2000), to the Nielsen, Arbitron, and comScore ratings used to determine the performance of television, radio, and online content, respectively (Bermejo, 2007; Napoli, 2011). In these last examples, the information produced by these market information regimes essentially functions as currency in the marketplace (Napoli, 2011). This information becomes fundamental to how marketplace participants perceive the dynamics of their market and, of course, influences organizational strategy and decision-making.

Any change in how a market information regime is calculated or produced, or an introduction of an alternative market information regime, can introduce substantial changes in stakeholders’ perceptions of market dynamics and their firm’s performance within the market (see Napoli, 2003). For example, when Nielsen introduced the Local People Meter in the late 1990s to replace paper diaries, the ratings for many cable networks immediately increased, while those for several broadcast stations rapidly declined. The cause was that diary keepers tended to under-report their cable viewing and over-report broadcast viewing (Napoli, 2003). The introduction of new or revised measurement systems essentially represents alternative, competing representations of value in the marketplace (see, e.g., Kjellberg & Helgesson, 2007). They possess the potential for diversifying representations of market value (Moor & Lury, 2011; Stark, 2009). Applying this perspective to the television industry, we essentially have an established market information regime (traditional Nielsen ratings) being challenged on several fronts by alternative analytical approaches that may capture other dimensions of audience value. The end result may be a significant reconfiguration in how value is measured and assessed in the television audience marketplace.

1. Methodology

In addressing these issues, this study analyzed data obtained via multiple methods. First, participant-observation was conducted at two industry events: the Advertising Research Foundation’s Audience Measurement 6.0 conference (June 2011) and the Online Media, Marketing, and Advertising Metrics and Research Conference (February 2012). These events, and the presentations, discussions (and arguments) that took place at them provide a useful window into how the television audience is being conceptualized, reassessed, negotiated, and valued by industry stakeholders.

Next, textual analysis was conducted on relevant industry trade publications, corporate marketing and promotional materials (including online videos), presentations, reports, and white papers that addressed the topic of evolving approaches to measuring and valuing television audiences. Trade publications (print and electronic) incorporated into this analysis included *Advertising Age, AdWeek, MediaWeek, Broadcasting & Cable, Media Life Magazine, MediaPost* and *paidContent.*
Since this analysis focused on current developments, the gathering and analysis of material was targeted from November 2010 through March 2012. These data are useful for establishing the range of stakeholders and technological developments relevant for this analysis and for gaining insights into the key issues and controversies confronting industry sectors.

Finally, 21 semi-structured interviews were conducted with professionals in the television, advertising, and audience-measurement industries. These interviews ranged from 30 to 90 minutes and were conducted either in-person or over the phone. Interview subjects were obtained via snowball sampling that originated from the author’s personal and professional network contacts, and from initial outreach to key organizations relevant to the subject matter of this study. Interview subjects held positions in a wide range of areas, including program development, ad sales, research, and information technology. They came from a variety of organizations, including broadcast networks, cable networks, measurement firms, advertising/media buying agencies, and industry associations. Years of experience ranged from two years to more than thirty-five years, with titles ranging from Research Analyst to Executive Vice President. All interview subjects participated with the understanding that their identities would be kept anonymous to maximize the extent to which they could provide candid responses to the interview questions.

2. The Evolving Television Audience Marketplace

The first step in this analysis is to assess the state of the contemporary television audience marketplace, with a particular emphasis on the technological changes that are driving new approaches to measuring and valuing television audiences. The realm of television audience measurement was described by one interview subject as undergoing “more change in the past five years than has probably happened in the entire history of audience measurement dating back to the 1950s.”

The state of affairs today involves two parallel, and potentially intersecting, development tracks. The first involves a wide range of efforts to strengthen and preserve what will be referred to here as the “traditional” approach to measuring and valuing television audiences. This approach emphasizes the value of audience exposure to television programming, and sorts these exposures according to different demographic groupings. The second involves efforts to go beyond audiences’ exposure and quantify (and value) some dimension of the audience’s “engagement” with the content, under the presumption that there is additional value embedded in how deeply audiences are engaged in the content they consume. This approach increasingly is being pursued via the analysis of audiences’ social media discussions of television programs.

3. Preserving the Measurement and Valuation of Exposure

The audience measurement and valuation challenges outlined in the Introduction are being addressed in a number of ways that involve the preservation of the traditional focus on audience exposure. The most significant of these is most likely the transition at the national level in 2007 to the C3 currency. Under this approach, advertisers pay only for those viewers exposed to a program’s commercials within the first three days of a show’s debut. This approach was the compromise that arose from contentious negotiations between programmers and advertisers over how to incorporate DVR usage and commercial avoidance into the valuation of television audiences (see Napoli, 2011). For this approach to be viable, it obviously required Nielsen’s audience measurement system to be capable of analyzing television-viewing behavior on a minute-by-minute basis (in order to differentiate program viewing from commercial viewing). At present, this is achievable for Nielsen only at the national level, given the nature of measurement technologies employed at the national versus the local levels (Napoli, 2011).
The DVR, however, represents only one of the major transformative processes affecting the television industry and, in particular, the measurement and valuation of television audiences. Perhaps even more important is the ongoing fragmentation of the television audience, both within and across viewing platforms (e.g. mobile, game console, tablet, PC, etc). This process creates a range of new technological contexts in which audience behavior must be measured. It also segments the audience into ever-smaller, and thus more-difficult-to-measure, groupings.

As a result, several initiatives are in place to capture "cross-platform" viewing. Nielsen recently announced its “cross-platform campaign ratings,” which allow for the calculation of a single ratings number for a television program, derived from audience exposure on TV and online (Stelter, 2012). NBC recently announced collaborations with Google, comScore (NBCUniversal, 2012), and even radio-audience measurement firm Arbitron (Mandese, 2012a) to measure cross-platform viewership for the 2012 Summer Olympics.

Perhaps the most significant alternative methodological approach to dealing with the challenge of audience fragmentation is the use of digital set-top boxes to draw data from much larger samples, to obtain more accurate and reliable measurement of the networks and programs that extend further into the "long tail" (Anderson, 2006) of audience exposure than currently is being achieved under the traditional household meter/sampling system. A number of firms, including Nielsen, are developing and offering performance metrics derived from set-top box data (see, e.g., Stilson, 2011). The market leader is Rentrak, which offers local and national television ratings derived from a sample of 19 million digital set-top boxes. The company has recently begun making inroads into the realm of television audience currency at both the local and national levels, with a number of stations, networks, and media-buying agencies beginning to subscribe to the Rentrak service and typically using the data as a second, supplementary currency in their transactions (see, e.g., Mandese, 2012b, 2012c, 2012d).

The appeal of the set-top box approach is that it provides what appear to be more stable and reliable ratings estimates, and that it can be used to provide more precise measurements of audience exposure to individual television commercials. On the downside, despite the much larger samples of television households measured via the set-top box approach (some providers even abandon the “sample” terminology and employ the “census” terminology instead), this approach cannot represent the entirety of the television-viewing audience, and continues to have limitations in providing the level of demographic data that advertisers have come to expect.

It is important to emphasize that these efforts have one important element in common — they focus on providing measures of audiences’ exposure to television programs; and in that regard are reflective of the basic dimension of audience behavior that has served as the primary criterion for audience value in the electronic media since the 1930s (see Napoli, 2011). This, despite the growing body of evidence that focusing on the buying and selling of audiences on the basis of segmenting demographic groups according to their exposure to programming and/or advertisements is inefficient and ineffective (Mandese, 2012a). “Ratings demographics by age and sex had a relatively low 0.12 correlation with actual sales produced by exposure to TV ads,” according to recent research (Neff, 2011, p. 1). The point here is that, both from a methodological and a logical standpoint, the traditional approach of measuring and valuing audiences on the basis of demographically-sorted exposure metrics has entered a period of some uncertainty and reassessment.
4. Beyond Exposure: The Rise of Social Media Analytics

The second major transition affecting the measurement and valuation of television audiences involves the notion that the process of measuring and valuing television audiences should extend beyond basic audience exposure to programs, and instead account for how viewers engage with programs — how they feel about the programs (and advertisements) they consume; and how they respond to them. The primary terminology that has emerged in the audience marketplace for these aspects of television viewing is “engagement.” This is not to say that the audience marketplace is operating under a single, agreed-upon definition of engagement (indeed, the opposite is, to this point, the case; see Napoli, 2011); only that many buyers, sellers, and measurers of audiences seem to agree that audience engagement is a relevant value criterion in the audience marketplace. And once again, this transition has been driven by the fragmentation that has undermined traditional approaches to measuring and valuing television audiences. As one digital media executive interviewed for this study noted, “Engagement is much more of a focus today because of fragmentation.”

Social media have emerged as the primary means by which audience engagement with television programs is being translated into performance metrics that can be used in the assessment and valuation of program audiences. Like all sectors of the media industry, the television industry also is in the midst of a potentially dramatic transformation at the hands of social media (see, e.g., Futurescape, 2011a; Proulx & Shepatin, 2012). Social media are seen as a means to enhance the television industry on a variety of fronts, ranging from marketing and promotion (i.e., as a way to improve traditional ratings performance) (Friedman, 2012), to content development (i.e., as a way to innovate in terms of storytelling and to extend programming and associated content into multiple media platforms); in terms of providing new forms of audience feedback that can be used in both program development and modification (i.e., social media as focus group); and — most relevant to this analysis — in the valuation and selling of audiences to advertisers.

Regarding the latter dimension, some analysts have argued that the analytical opportunities provided by social media provide a much-needed corrective to the significant limitations to measuring and valuing television audiences according to mere exposure (see, e.g., Abzug, 2011; Leavitt, 2011; Seles, 2010). This perspective is well-reflected in the following statement from a broadcast network executive: “We believe that the value of our brand is beyond just the C3 rating. We are now able to assemble a presentation about a show . . . and point to a much broader picture so that we're able to qualify, in some way, that the show is much bigger than just the Nielsen measurement” (Tarrant, quoted in Proulx & Shepatin, 2012, p. 115).

Clearly, then, social media analytics are seen by some stakeholders as a way of capturing dimensions of audience value that were unable to be captured via traditional Nielsen ratings (or, perhaps, at least as a way to recapture value lost due to DVR-enabled commercial skipping and audience fragmentation), which went no further than measuring the extent of audience exposure to programming. The following section examines the analytical approaches that are being taken to capture this value, as well as the key concerns that marketplace participants have raised regarding these new approaches to measuring and valuing audiences.
As the above discussion suggests, social media-based performance metrics bear very little resemblance to the television audience ratings that preceded them. This is well reflected in the “ratings” reports that emerge from these services. The literature on market information regimes tells us it is inevitable that different methodological approaches lead to different representations of a market (Anand & Peterson, 2000; Anderson & Napoli, 2006; Napoli, 2003); and this pattern holds true here. The biggest “hits” in the social media space often are proving to be very different from Nielsen’s top-rated shows (see Napoli, 2011). Moreover, early indications are that, compared to traditional television ratings, volatility is greater in the social media space. That is, whereas in the traditional Nielsen ratings, “the top shows tend to stay on top,” social media analytics indicate much more week-to-week variation in what appear to be the most talked-about programs (Humphrey, 2011).

A focal point of research at this time involves trying to understand the dynamics of the relationship between measures of social media success for television programs and measures of traditional ratings success. Not surprisingly, data at this point indicate a much stronger correlation between online discussion and ratings for programs that target younger audiences (Subramanyam, 2011), given the extent to which social media discussion of television programs is much more common amongst younger viewers than older viewers (see below). Depending upon the timing, a 9% to 14% increase in online discussion appears to be capable of producing a 1% increase in a program’s rating (Subramanyam, 2011). Such research is, of course, being conducted with an eye toward trying to understand if and how social media conversation can be used to enhance the traditional value (ratings) of television programs.

However, in terms of the relationship between social media metrics and traditional ratings, it also is worth noting that, in this new audience-measurement and valuation space, the specific value claims often associated with new metrics have yet to be rigorously tested. Thus, for instance, one social analytics firm claims its metrics provide indicators of an audience’s likelihood of engaging in repeat viewing of a television program, as well as an audience’s likelihood of being exposed to the advertisements within a program. However, when a sales representative for this firm was interviewed for this study and questioned about these propositions, he described them as “assumptions” rather than empirically verified relationships at this point in time.

Most social media analytics services utilize some form of “web scraping,” in which the comments posted on a wide range of social media platforms (including Twitter, public Facebook pages, blogs, online discussion boards and, in the case of some services, specially-created web platforms) are aggregated and classified via sophisticated algorithms. Services such as General Sentiment, Radian6, Crimson Hexagon, and Bluefin operate in a way that is invisible to the social media user, scraping the social media space for relevant postings and activities that can be aggregated and incorporated into snapshots of the relative online popularity of individual television programs and networks. In some cases (such as Trendrr.tv), data from other TV-focused social media platforms, such as TV “check-in” applications (see below), serve as inputs into these analytic products (Lawler, 2011b).
Many of the services in this vein, given their methodological approach, provide analytics related not only to television consumption, but the much larger realm of online conversation (such as product affinities, political viewpoints, etc.). This means these services also can link those comments about television with social media comments regarding product (or product category) use and affinities, and provide advertisers with data about which viewers of certain types of programs are desirable target audiences for their products.

Certainly, the scraping of social media conversations to assess the performance of television programs represents a substantial methodological departure from the People Meters and paper-viewing diaries long-employed by Nielsen. Whereas traditional TV ratings require individuals to agree to be part of a relatively small measurement sample, social media metrics draw from incredibly large swaths of the online population's expressions of its viewing habits, reactions, and opinions, with no opt-in (or associated incentive) required in most cases. Such an analytical approach requires the ability to gather, categorize, and analyze literally billions of data points, and so computing power, storage capacity, and algorithm design are fundamental to the effectiveness of these services. Bluefin Labs, for instance, analyzes almost 1,400 hours of television from more than 100 television networks and in excess of 160 million comments daily to effectively link social media conversation with the precise elements of individual programs (Arndt, 2011). In a given month, the firm analyzes more than 3 billion public social media comments. These measurement approaches represent the epitome of “unobtrusive measures” that have long been an ideal in social science (Webb, et al., 2000).

As noted above, some social TV analytics services gather their data via specialized online platforms, and thus require more affirmative participation on the part of those whose behaviors are being measured. Representative of this category are the many TV “check-in” applications launched recently by firms such as GetGlue, Miso, IntoNow, Wikia, and SocialGuide. These applications maintain social media communities oriented around entertainment content such as television programs, provide community-based recommendation systems that users can utilize to guide their media consumption, and seek to monetize their user base via advertisements sold on these platforms. The analytics dimension (in terms of providing quantitative assessments of the relative levels of audience engagement across different television programs) is just another component of these platforms’ multi-faceted business models. A related approach (provided by Nielsen IAG) uses a dedicated web platform to gather data on audiences’ recall of individual programs and commercials (via specially designed online quizzes) after a program has aired.

Many of these services seek to not only quantify the volume of online discussion about television programs or networks, but also the valence of that discussion. Bluefin Labs founder Deb Roy (2011) has described this challenge of accurately linking the specific ideas/sentiments expressed in social media comments with the content of individual television programs — or even with precise moments within these programs — as the “semantic barrier.” General Sentiment assigns a quantitative score (1-10) to each comment it aggregates, with the score meant to reflect the extent of the positive or negative orientation of the comment.

In many instances, the providers of these metrics seek to present their analyses using concepts and vocabulary derived from the traditional approach to television audience measurement and valuation. Thus, social media analytics firm Trendrr’s television-specific product, Trendrr.tv (2012), provides a “share of voice” metric (echoing the traditional television audience-share terminology), which represents the share of all television-focused social media activity that is attributed to a particular network or show for a specified monthly time period. Similarly, Bluefin Labs provides a “response share” metric that indicates an individual program’s share of the online television...
conversation at the time the program aired (Lawler, 2011a). This way, these services seek to maintain conceptual connections with the dominant market information regime in their field.

These services also seek to provide subscribers with systematic information not only on their own performance, but also on the performance of their competitors and the marketplace as a whole. It is in this important way that these services meet key criteria as to what constitutes a market information regime (see Anand & Peterson, 2000). They are not just specialized analytical tools that firms can apply to their own performance — they are publicly (at least for those with the willingness and resources to subscribe) accessible representations of the performance of all market participants, and of the dynamics of the market as a whole. Prior to the availability of such services, advertisers and networks could individually monitor social media platforms such as Twitter and Facebook, but contextualizing these findings against the marketplace was difficult and required substantial resources. As one Bluefin Labs executive has emphasized, a key objective of its service is to “Not only give . . . the numbers, but also the universe of context” (quoted in Naone, 2011, p. 1).

Given the large number of service providers operating in this area, a key question is how do these services meaningfully distinguish themselves from one another? At this time, a key point of distinction seems to be granularity. Some services focus on analyzing social media activity on a weekly or monthly basis (e.g., Trendrr.tv, General Sentiment). Others seek to provide data on activities on individual days, or even on a minute-by-minute basis. Bluefin Labs, for instance, focuses on identifying online comments made at specific moments during individual programs (or advertisements within these programs). Social Guide aggregates and analyzes a program’s mentions one hour before air time through two hours after, focusing on “linear TV” (Humphrey, 2011a). Some, such as those provided by General Sentiment and Nielsen Online, also seek to assess the reach of social media comments.

With more than one dozen providers of social media analytics that serve the television industry either exclusively or as part of their broader business model, all of whom are employing different methodologies, algorithms, and analytical frameworks, one industry observer has rightly asked: “Is there going to be one central hub for these experiences to play out or is it going to be sort of like a Tower of Babel that provides thousands of apps?” (Wallenstein, quoted in Proulx & Shepatin, 2012, p. 100). As a result of the current fragmentation in the marketplace, one television sales executive described stakeholders as “oversubscribing” to the wide range of audience-data sources currently available, until obtaining a better sense of which sources are the most accurate, make the most sense, and achieve widespread use in the marketplace. Right now, according to Scott Monty, head of social media at Ford, each of the many analytics tools available has its own unique attributes, with no “one-size-fits-all tool” available at this point (Gelles, 2012, p. 5).

One key challenge in assessing the growing array of social media analytics services available for assessing and valuing television audiences is that — perhaps in large part due to the current high level of competition — many significant methodological details are withheld. Not surprisingly, then, a number of interviewees described the new social analytics resources available to them as “black boxes.” According to MacKenzie (2005), the black box terminology originated in engineering, in reference to complex devices about which all “the engineer needs to know is that the device transforms given inputs into predictable outputs” (p. 557). The terminology also has been applied to audience-measurement systems, given that they can be described as a “techno-social mechanism that produces things routinely agreed upon and (almost) never questioned” (Bourdon & Meadel, 2011, p. 792).
One cable network programming executive described a leading online tool for measuring television audience engagement as “a crock. They never tell you what’s in the black box. There’s no transparency with them.” Another television executive, however, preferred to avoid the black box terminology, noting that the issue was less one of transparency, but of complexity, given that the nature of these new measurement systems requires training and expertise that do not overlap with the skill sets of traditional media-research personnel. Of course, whether the cause is inadequate transparency or high complexity, the result is the same — an inability to fully understand the operation of a system/tool that is being utilized.

Despite these challenges to fully understanding how these services construct their representations of the television audience, many of the interview subjects for this study reported that their organizations engaged in rigorous comparisons of the observable strengths and weaknesses of the various analytical tools available. Key points of distinction that the interviewees reported amongst the various services included: a) the extent to which archived data allow for longitudinal analyses; b) the level of user autonomy to produce customized analyses; and c) the level of transparency of the keywords/terms used to generate analyses (some services don’t tell subscribers which words/phrases were used to analyze the social media activity around individual shows). These critiques point to the issue of how well these analytical tools (which generally were created with other applications in mind) serve the specific needs of the television audience marketplace.

Some of these relatively minor, technical issues can have significant consequences. For instance, one network-audience researcher discussed the challenges of obtaining valid and reliable social media analytics for programs such as The Office or Community, given the generic terms that comprise the titles of these shows. Also, as noted previously, many of the social analytics systems can not only analyze the volume of online conversation, but also the valence (positive vs. negative). However, as one network executive noted, these systems often have difficulties disentangling positive and negative sentiments about individual characters and programs as a whole. The specific example provided involved certain reality programs where audience dislike of individual characters actually feeds into viewers’ enjoyment of the show. In this case a negative sentiment expressed about an individual character doesn’t necessarily mean a negative attitude toward the program.

Another network researcher emphasized the inability of many social media analytics platforms to facilitate the analysis of individual dayparts, which remain an important analytical focus. These issues led this researcher to describe a “persistent disconnect between the analyses that can be done and the way audiences are sold.”

Another key methodological concern that emerged from the interviews involved the social analytics organizations’ limited access to the full scope of social media conversations happening online (Ampofo, 2011). Many of the social analytics platforms rely heavily (in some cases, almost exclusively) on data from Twitter. Facebook, in contrast, does not provide access to all postings on its platform. Thus, as one network researcher noted, if the user base of Twitter does not represent your network’s, or your programs’, viewers, then the utility of some social analytics platforms for analyzing and monetizing your audience is dramatically diminished. One recent critique of social media analytics as a television audience measurement tool argues that the social media analytics firms face the same kinds of challenges capturing data in an increasingly fragmented social media environment that have confronted Nielsen in its effort to capture increasingly fragmented television viewing (Hussey, 2012).

Further, within these social media platforms, activity can be concentrated within a relatively small proportion of the user base. For instance, one study of the efficacy of social media analytics found
that 14 percent of the population is responsible for 85 percent of consumer-generated online content; and that these heavy social media users differ in important demographic and behavioral ways from the population as a whole (Field, et al., 2011). A digital media executive contended that the biggest shortcoming of social analytics platforms thus far is their inability to meaningfully assess what he termed “buzz per user,” to effectively account for how substantial an amount of online conversation emits from a relatively small proportion of the total online population. This point reflects the widespread recognition amongst the stakeholders interviewed for this study of the extent to which social media conversation reflects the activities of a relatively narrow and specific sample of the television-viewing population as a whole.

Clearly, these services do not operate from the premise that they provide any kind of comprehensive representation of the entirety of the television audience. Indeed, data indicate that, for instance, while males comprise 47% of the online population, they comprise 57% of the population of sites that focus on the discussion of television programs (Subramanyam, 2011). Further, men and women, ages 25-34, represent 16% of the online population, but 29% of the population of sites that focus on the discussion of television programs (Subramanyam, 2011). The key point is that the online discussion of television programs is not only limited to a small proportion of the online population, but that this small group is significantly skewed (younger, more male) from the online population as a whole. Again, however, it is important to emphasize that the buyers and sellers of audiences interviewed for this study widely acknowledged and recognized this situation. Still, should these representations prove influential in the buying and selling of television audiences, this would place a somewhat narrow segment of the population in the position of having substantial influence over the behaviors of programmers and advertisers. Reflecting this perspective, one recent industry report has gone so far as to claim that “Facebook and Twitter are TV’s new power brokers” (Futurescape, 2011b). Similarly, in an interview with The New York Times, American Idol producer and star Simon Cowell somewhat hyperbolically described people who actively use Twitter and Facebook as “the only powerful people now on TV” (Stelter, 2011, p. 1).

This is another fundamental way in which this approach to the analysis of television audiences is different from the traditional approach, which emphasizes the construction and maintenance of representative samples of the population as a whole. Whether representativeness was achieved was always a question; as a result, the history of the Nielsen ratings is rife with indications of failures to adequately represent the viewing habits of specific demographic groups (young people and certain minority groups, for instance, have often been presumed to be inadequately represented) (Napoli, 2003). These issues of representation and misrepresentation re-emerge in the social TV context, though this time around the premise of representativeness is not something that these services are striving to achieve. It would seem that the value in these services is in the volume of data that can be gathered and analyzed, not in the extent to which these data are representative of the population as a whole; nor, for that matter, the online or social media population, but rather in the extent to which they provide access to another, previously untapped dimension of audience value. At this point, however, this value can only be captured from a fairly limited subset of the television audience.

This issue of demographic representation is compounded, to some extent, by the fact that social media analytics are, at this point, largely incapable of linking demographic data with the comments being expressed in social media conversations about television programs. While the demographics of social media users can be assessed in the aggregate (see above), social media analytics firms cannot sort individual social media comments about television programs into demographic categories. A number of interview subjects noted this absence of demographics as a substantial limitation in their perceived utility of these social analytics platforms.
A final, major methodological concern involves the extent to which social media analytics are susceptible to various forms of spam and manipulation. According to one study of social media analytics, as much as 50 to 75 percent of the original “data pull,” and as much as 25 to 50 percent of the cleaned data can be spam of some form or another (Field, at al., 2011). A number of interviewees expressed concerns about these systems’ susceptibility to manipulation and what this could mean for the validity and reliability of the results they provide.
The foregoing alternative audience information systems gradually are being integrated into the television audience marketplace. More research is required to understand how their use might affect the industry. As with all aspects of social media today, it is vitally important to attempt to separate hype from reality (see, e.g., Harvard Business Review Analytic Services, 2010). In the case of social TV analytics, this hype emanates not only from the data providers themselves (which is to be expected), but also, in particular, from the industry trade press, which is devoting a substantial amount of enthusiastic coverage to these new representations of the television audience and their potential impact. Thus, for instance, we see Advertising Age go so far as to ask, “Will social media be the new Nielsen for TV ad buyers?” (2011). Another trade press article asserted “the amount of social media buzz that a show generates can be almost as important as whether it's gaining in ratings” (Vasquez, 2011b, p. 1).

The reality, not surprisingly, appears to be something not quite that extreme, at least at this point in time. What seems to be emerging is a two-tiered audience marketplace, where data derived from social media-based analytical tools are supplementing traditional exposure data in specific situations, such as when: a) a point of differentiation is being sought between two programs that perform similarly according to traditional criteria; or b) the program’s audience is too small to register in the traditional exposure-focused measurement system.

Looking at the first context, according to the recent Advertising Age article mentioned above, at least one media agency has begun to use social analytics data to help differentiate between shows with similar audience sizes and compositions (“Will social media,” 2011). This strategy is reflected in the approach taken by the media agency Optimedia. It has developed what it calls Content Power Ratings, which are derived from a combination of data sources, including social media (Edgecliffe-Johnson, 2010). The Content Power Ratings integrate traditional exposure data with social media data to “measure and aggregate total views and engagement for TV shows on-air, online, and on mobile platforms” (Hampp, 2010, p. 44). The goal, of course, is to provide more extensive criteria for differentiating between programs than can be found via relying purely on traditional ratings data.

In the case of programs that do not perform well according to traditional criteria, social media data are being used to try to recast the programs’ value in new ways. A very common expression amongst television executives interviewed for this study was the value of social media metrics in helping them to tell an alternative “story” to advertisers in those circumstances when there was not an appealing ratings tale to relate about a particular network or program. As one researcher at a poorly performing network noted, given his network’s lack of “ratings stories to tell . . . we have to talk about audience quality,” which in this case meant the levels of audience engagement and enthusiasm reflected in social media metrics. In some cases, networks have partnered with measurement firms to develop specialized metrics that can help them overcome their lack of a ratings “story.” For instance, Sundance Channel has worked with Nielsen to develop what it calls its Measurement Innovation Metric, which is intended to capture a television audience’s loyalty, engagement, and ad receptivity. The metric was developed primarily in response to the fact that Sundance Channel is one of the hundreds of cable networks with viewership levels that currently...
are too small to register in the traditional Nielsen ratings system (“Sundance Channel introduces,” 2010).

It would appear, then, that social media metrics have begun to serve a fairly specific secondary role in the television audience marketplace. However, there is still tremendous significance in the fact that, as one television executive noted, Nielsen ratings now will serve as “a piece of the pie, rather than the whole pie,” given the long-standing near-exclusivity of traditional Nielsen ratings as the criteria for determining audience value. Another television researcher described an evolving marketplace in which traditional ratings data would reside at the core, surrounded by a variety of supplementary measures that would vary according to the needs of advertisers and/or program- mers. As one digital media executive declared, “Nothing can be looked at on its own anymore. . . . I think in all aspects of media, there are many more ways to skin the cat, in terms of selling, buying, and measuring.” These statements seem to reflect a marketplace that is willing to embrace a greater diversity of audience-value criteria.

This scenario would seem to reflect the objectives of many of the firms providing social media data, who frequently describe their intentions as serving a supplementary or complementary role in the television audience marketplace, rather than as a replacement for established currencies (see, e.g., Warren, 2011). General Sentiment’s CEO Greg Artz, for instance, has stated that his company’s Television Audience Evaluation Reports are “designed to be used in conjunction with traditional ratings” (quoted in Friedman, 2009, p. 1).

Regardless of whether these data sources are used as primary or secondary criteria for assessing program and audience value, the bottom line is that these metrics represent an opportunity for the introduction of a much greater diversity of sources of value into the television audience marketplace than has been the case, perhaps since the medium’s invention. As one television executive noted, “Lots of people are trying to show lots of different types of success.”

The implications of a television audience marketplace that genuinely operates under multiple success criteria could be far-reaching. As one technology executive for a television programmer noted, social analytics provide the opportunity for entirely new mechanisms for segmenting television audiences that extend well beyond demographics. Given that many social analytics services can link an individual’s social media comments about television programs with all of their other online discussions, it becomes possible to target programs according to alternative criteria, such as outdoor enthusiasts, sports fans, automotive enthusiasts, etc. As this executive noted, “this could revolutionize the way we do ad sales, the way we target audiences.”

It could, of course, affect programming as well. Programming would, in theory, no longer be created with certain age/gender categories in mind. Seles (2010) sees the status quo as perpetuating a fundamental disconnect between the financial value of the audience and the cultural value of television content — a disconnect that likely leads to the underproduction of culturally relevant programming for many audience segments. As she argues, “Ratings are too narrowly constructed to represent the diverse sites of value embodied in the contemporary television audience” (Seles, 2010, p. 5). From this perspective, social media data can serve as a mechanism diversifying the sites of audience value, and thereby diversifying the range of audience interests that are targeted and served by television programmers. From this standpoint, social media analytics literally help to diversify the range of programming available on television.

It is also important to address the possibility that the greater integration of social media conversation into the buying and selling of audiences could actually reinforce the propensity to target fairly
narrow demographic groupings, which could undermine diversity of programming. Given the extent (discussed above) that social media discussion of television programs appears to be emanating from a fairly narrow spectrum of the television-viewing audience, the demographic groups that are most active in social media discussions of television could become much more of a focal point for advertisers and programmers. The pressure to target audience segments that are active in social media could actually constrict the type of programming produced. The bottom line is that advertisers already place a high value on younger viewers, and a measurement system that over-represents these viewers relative to older viewers could serve as a powerful reinforcing mechanism for these established valuation criteria.

Further constricted could arise from programmers’ desire to increasingly emphasize genres that appear to be particularly effective in provoking social media commenting. This interaction of demographic and genre specificity around social media activity could ultimately narrow the range of programming that is produced. Clearly, whether the net effect of the widespread adoption of social media activity as a meaningful representation of audience value would have a positive or negative influence on the diversity of programming available is a question that can be compellingly argued from both perspectives at this early point in time.
This paper has examined the evolving criteria for audience value in the television audience marketplace. It has examined the key technological developments taking place to both preserve traditional approaches to audience value and to introduce alternative value criteria. As this paper has illustrated, alternative approaches based on audiences’ social media activity have emerged as the most prominent mechanism for capturing alternative sources of audience value. These analytical approaches have begun to make inroads into the audience marketplace, as supplementary criteria for either distinguishing between programs that perform similarly according to traditional criteria or for proposing alternative sources of value when the program fails to perform well according to traditional performance metrics. It would appear that opportunities for social media metrics to contribute to the monetization of program audiences are greater amongst those programs that reside in the “long tail” of audiences’ consumption patterns, or those programs that appeal specifically to the core audience segments that are active in social media conversations about television.

The inherent methodological limitations associated (at least at this point in time) with measuring and valuing television programs’ audiences on the basis of their social media activity likely will place a fairly strict limitation on the extent to which they are able to significantly affect how advertisers allocate their advertising budgets. Some of these methodological limitations could be overcome eventually as the social media population becomes more representative of the entirety of the television-viewing population, or as the mechanisms for gathering demographic data become more sophisticated (or, alternatively, as advertisers’ focus on traditional audience demographics diminishes, which it might).

The use and impact of social media data also seem to be limited, at this point, by the tremendous competition and fragmentation in the social TV metrics space. The audience-measurement industry traditionally has been unable to support multiple competitors within any measurement arena. The extent to which audience-measurement services serve as market information regimes has created a strong pressure toward few (or even only one) providers of the information used to assess market dynamics. The operation of multiple market information regimes within a particular market criterion creates confusion and uncertainty. And so, while the marketplace appears to be willing to support criteria for audience value beyond demographics-based exposure measures (i.e., Nielsen ratings), the market will not, in all likelihood, support multiple representations of social media-based audience engagement with television programs. Indeed, a key theme that emerged amongst the interviews conducted for this study was the need for increased standardization and/or consolidation in the realm of social media analytics. As one network executive emphasized, “Someone needs to step up and say, ‘This is the measure we’re going to use.’” The history of audience measurement tells us that substantial consolidation in the realm of social media analytics is inevitable (see, e.g., Napoli, 2003).

A final major impediment that emerged in this study was transparency. The extent to which stakeholders are not provided with detailed information about how various measurement systems gather, aggregate, and analyze data contributes to uncertainty and suspicion about these new services. One network executive contends that “more transparency is absolutely necessary,” if
social media analytics are to play a more prominent role in the television audience marketplace. Of course, it is important to emphasize that this uncertainty and suspicion are not just a function of inadequate transparency. This new approach to audience measurement represents a substantial departure from the knowledge base and skill sets of the professionals involved in the buying, selling, and valuing of television audiences, which certainly affects their willingness and ability to engage with these new analytical services and assess their strengths and weaknesses. This situation highlights the ongoing transformation in television advertising (and all other forms of advertising, for that matter) and the different training and skill sets that are increasingly required for professionals in this area.

Future research should seek to delve deeper into understanding the inner workings of the growing array of black boxes of television audience measurement. Anderson (2011) has astutely recognized the need for a “sociology of algorithms” so that we may better understand the processes that are playing an increasingly influential role in a variety of spheres, including cultural production and consumption. As MacKenzie (2005) contends, “Not to examine the contents of black boxes is to miss a critical part of how societies are constructed” (p. 557). Power (2004) similarly argues that, “The task of social science is to open up the black box of performance measurement systems, to de-naturalize them and to recover the social and political work that has gone into their construction” (p. 778).

Along these lines, future research should also engage in comparative analysis across a range of these new performance metrics to establish a more concrete sense of the extent to which these different performance metrics are tapping at similar concepts. To what extent do different social media analytics correlate with each other in terms of their depictions of the programs with the highest level of audience engagement? Are there systematic patterns in the ways these depictions differ across services? Do the patterns we see in traditional exposure metrics — in which discrepancies across services become more pronounced further into the tail of consumption — hold true when the unit of analysis is online discussion rather than exposure? And, to what extent do the different analytical approaches provide representations of the audience that correlate with the performance rankings as indicated by traditional ratings? Answering questions such as these can help further our understanding of the relative effects that different analytical approaches would have on the audience marketplace and could inform the process of selecting from the wide range of sources currently available.
The use of “currency” refers to the specific performance metric that advertisers and programmers buy and sell in the marketplace. So, in this case, a program’s commercial rating (compiled over a three-day period) has replaced its “live” rating as currency in the marketplace.

Outside of the top 25 television markets (in which Nielsen utilizes People Meters), the measurement of audience demographics still is done using paper diaries. Nielsen is unable to effectively distinguish between program and commercial viewing with the diaries.

Arbitron’s Portable People Meter technology is equally capable of measuring radio and television consumption.

It is important to emphasize that there are a number of methodological challenges associated with set-top box measurement, including obtaining demographic information about television viewers, and the fact that over-the-air television viewing cannot be measured via this system.

For recent book-length analyses exploring the technology, economics, and strategy of “social TV,” see Cesar, et al. (2009); Johnson (2010); Proulx & Shepatin (2012); Roebuck (2011).

According to a recent Nielsen study, a 14 percent increase in social media buzz during the two weeks leading up to a program’s season finale leads to a 1 percent increase in its rating for 18-34 year-olds (see Friedman, 2012). Some research even suggests that social media have contributed to a resurgence in “live” television viewing, as viewers seek to participate in coordinated social media activity while watching the program, as well as to avoid being exposed to “spoilers” via their social network should they delay watching their favorite programs (see, e.g., “Is social media killing TV?” 2011). There are, however, different interpretations of whether the strength of the demonstrated impact that social media activity has on traditional television ratings is of a meaningful magnitude (see, e.g., O’Malley, 2012; Vasquez, 2011a).

In its guide to television producers, Twitter describes its data as “a kind of creative EKG” of a television program (Twitter on TV, 2012, p. 2). For a description of the ways in which social media analytics are transforming the research used to assess and modify local television newscasts, see Marszalek (2012).


A service such as Nielsen’s IAG, which requires individuals to visit a specific web site and become part of a large panel of viewers who respond to quizzes about the content and advertisements of individual television programs, represents an exception to this statement.

In this regard, MIT-based Bluefin Labs seems to be ahead of its competitor up the street, Harvard-originated Crimson Hexagon, which claims to analyze approximately 2.5 billion social media posts monthly (http://www.crimsonhexagon.com/crimson-hexagon-adds-twitter-firehouse-data-feed-expands-social-media-analysis-capabilities).


This is why Bluefin Labs also gathers and analyzes actual television program streams; whereas other services that focus on linear TV, such as Social Guide, rely simply on electronic program guide data (provided by Tribune Media Services) to link online comments with individual programs (Edelsburg, 2011).

Other applications for social media analytics include analysis of online discussion of individual brands; the analysis of political-campaign effectiveness; and the analysis of marketing-campaign effectiveness.
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About the Time Warner Cable Research Program on Digital Communications

The Time Warner Cable Research Program on Digital Communications will be dedicated to increasing public understanding of the benefits and challenges facing the future of digital technologies in the home, office, classroom, and community.

The Research Program will focus on the following areas:
• Increasing knowledge about the marketplace and the consumer
• Increasing knowledge about digital technologies
• Increasing knowledge about communications policy
• Increasing knowledge about innovation in digital communications

About the Research Stipends

Individuals receiving a stipend should produce a 25- to 35-page report. The report should be submitted no later than six months after the start of the project.

Proposals from any discipline with research interest in digital communications will be considered. Multidisciplinary research teams, consisting of two or more authors from different fields, are encouraged.

Size of Stipend: $20,000

Application Deadlines for 2012/2013 Awards: November 1, 2012 and April 1, 2013

Submitting Applications: Applications should be submitted online at www.twcresearchprogram.com. Applicants should submit:
• A three-page description of the proposed project
• A résumé (no more than three pages per author)

Applicants will be notified when their application is received and when the proposal review process is completed.

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