

Numbers,  
Please

# Measuring Television In the Programmatic Age

## Why Television Measurement Methods Are Shifting toward Digital

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### INTRODUCTION

How can viewing of television commercials be measured effectively when tens of millions of people are watching myriad program options on different platforms? As audiences have become more platform agnostic in their viewing behaviors, traditional television-advertising measures have lost relevance. Increased fragmentation and time shifting (viewing of programs after they have aired, through digital-recording devices and through online and mobile streaming options) have led to steep declines in prime-time ratings for many of the top broadcast-network shows. In many cases, however, there are not fewer viewers in total; they simply have shifted where and when they are viewing.

In the 2015–2016 broadcast season, 30 returning series' live + same-day ratings in their key demographics declined by at least 20 percent from the prior year.<sup>1</sup> The inability of traditional methods to account fully for fragmented viewing audiences has created an urgent need for improved cross-platform audience measurement and has prompted a red-hot debate over the quality of metrics in television's future.

### BUILDING A NEW MODEL

The television-advertising landscape changed very nearly in the blink of an eye. During the first decade of the millennium, when viewing of television content via traditional (*i.e.*, live or time-shifted means) remained relatively stable, the use of digital platforms largely was incremental to

existing television-viewing behavior. It was green-field opportunity rather than a threat to the existing business of content owners. ESPN Senior Vice President of Research Artie Bulgrin once characterized digital media as having created “new markets of time.”<sup>2</sup> The primary measurement challenge for television-content owners was how to effectively monetize their incremental audiences through measurement of the additional advertising impressions delivered. Audience measurement within platform silos was deemed to be sufficient.

Viewers' migration to digital platforms forced the industry to rethink the existing measurement infrastructure. The goal was to ensure that new measurement systems were equipped to handle inevitable change. In 2012, the Coalition for Innovative Media Measurement (CIMM) established criteria for cross-platform measurement,<sup>3</sup> including the following:

- Single-source cross-media audience-measurement panels alone are too small.
- Hybrid combinations with census data are needed to provide both volumetrics and demographics (or purchaser targets).
- Measurement should be as passive as possible across all media.
- Advertisements and content should be measured separately.

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<sup>2</sup> C. Weisler (2009, September 16). “Q&A with ESPN's Artie Bulgrin.” Retrieved December 7, 2016, from the Media Post website: <http://www.mediapost.com/publications/article/113645/qa-with-espns-artie-bulgrin.html>

<sup>3</sup> Coalition for Innovative Media Measurement. (2014, September). “CIMM's seven criteria for solving cross-platform measurement of exposure to ads and content.” Retrieved December 6, 2016, from [http://cimm-us.org/wp-content/uploads/2012/07/CIMM-Seven-Criteria-for-Cross-Platform-Measurement\\_Sept-2014.pdf](http://cimm-us.org/wp-content/uploads/2012/07/CIMM-Seven-Criteria-for-Cross-Platform-Measurement_Sept-2014.pdf)

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<sup>1</sup> A. Crupi. (2016, April 18). “Where TV ratings go from here. Audiences are down, down, down according to Nielsen.” Retrieved December 6, 2016, from the Advertising Age website: <http://adage.com/article/media/ratings/303574/>

Certain foundational elements of television measurement were not going to be abandoned altogether, however. CIMM’s best practices acknowledged the need for aligning metrics across platforms on the basis of common units of analysis (e.g., advertising impressions) on which other metrics (e.g., reach, frequency, and demographics) are based.

Other industry heavyweights saw an opportunity in fragmented and splintered viewing to amplify commercial messages online using alternative methods. In an April 2016 magazine article, GroupM Global Chairman Irwin Gotlieb articulated his vision for how television measurement would evolve: “[We will not] plan separately for TV and digital—it will be about ‘deduplicating’ audiences and achieving appropriate reach targets at each step of the consumer journey, with ever-refined target descriptors.”<sup>4</sup>

Gotlieb envisioned a platform-agnostic view of the world that would demand consistency in measurement built on more data. This vision suggests that the future of television measurement, ultimately, will look a lot more like digital than the other way around. A few of the more prominent developments in the future of television that will be predicated on a digital approach will be the following:

- “deduplicating” audiences across multiple platforms;
- broadening the use of age and gender demographics to more advanced descriptors of audiences and advanced currencies for the buying and selling of television-advertising inventory;
- shifting toward automated and programmatic buying and selling of television-advertising inventory.

<sup>4</sup> I. Gotlieb. (2016, April 18). “We’re seeing the evolution of TV, not its decline.” Retrieved December 1, 2016, from the Advertising Age website: <http://adage.com/article/print-edition/evolution-to-decline/303550/>

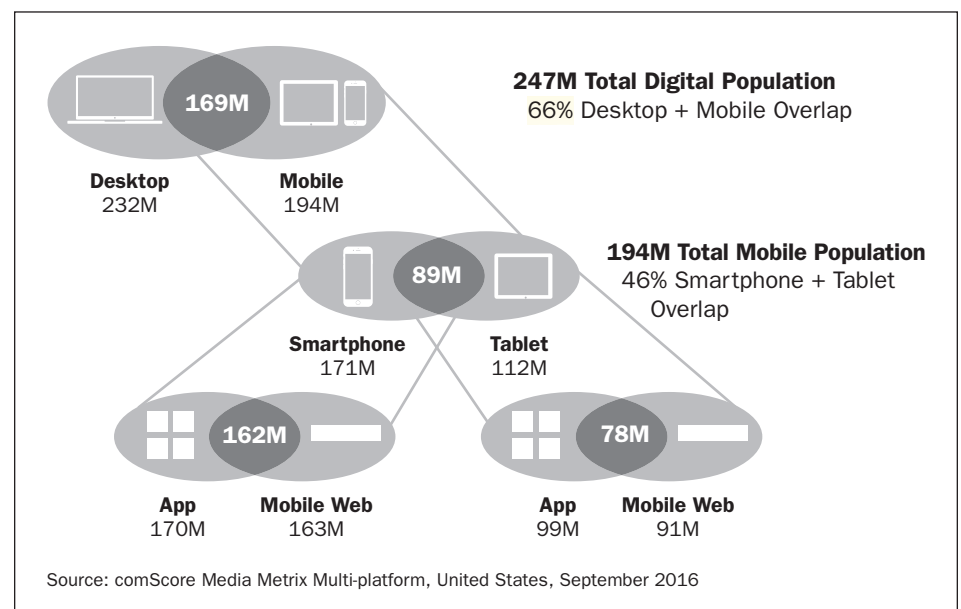
**The only practical means of accounting for the complexity of multiple-platform overlap appears to be to use a multi-source, rather than single-source, approach.**

**Deduplication of Cross-Platform Audiences**

Measurement of person-level audiences is central to any media-measurement system, but the challenge becomes complex when one is measuring multiple platforms in an unduplicated manner. The theoretical solution to this problem is to use a single-source panel that has overlapping panelists across all represented media platforms. “Single-source” refers to the measurement of television and other media-marketing exposure and purchase behavior over time for the same individual or household. The challenge is that building such a panel of sufficient size—to measure unduplicated audiences across television, desktop, smartphone, and tablet at the level of granularity that media planners need today (e.g., at the show level)—is cost prohibitive.

The only practical means of accounting for the complexity of multiple-platform overlap appears to be to use a multi-source, rather than single-source, approach. Such an approach was first developed and put into use in 2012, when comScore introduced its multiplatform digital audience-measurement service, which provided unduplicated audience measurement across desktop, smartphones, and tablets.<sup>5</sup> It also incorporated deduplication of websites, apps, and video content (See Figure 1). The methodology reflected that total digital audience must account for the overlap between desktop and mobile, mobile

<sup>5</sup> M. Walsh. (2012, November 29). “comScore debuts cross-platform reporting system.” Retrieved December 6, 2016 from the MediaPost website: <http://www.mediapost.com/publications/article/188145/comscore-debuts-cross-platform-reporting-system.html?edition=>



**Figure 1** Digital Audience Overlap

must account for the overlap between smartphone and tablet, and both smartphone and tablet must account for the overlap between app and mobile web.

This deduplication approach combined U.S. census-level digital-publisher data with panel-based measurement of digital audiences. Census-level data are a requirement for producing the audience-overlap algorithm for multiple platforms. The ability to calculate overlap at an individual media level needs massive data scale, so there are sufficient points of overlap between both mainstream and niche media behaviors among both large and small sub-segments of the population.

The approach since has been extended to cross-platform measurement, to combine digital audiences with television, which requires accounting for audience

overlap on at least four platforms. At five media platforms—television, desktop, smartphone, tablet, and over-the-top—unduplicated cross-platform audience measurement requires overlap functions to model each of the 31 distinct segments of the Venn diagram. (A Venn diagram shows all possible logical relations among a finite collection of different sets; See Figure 2.) Emerging digital platforms, such as over-the-top, now necessitate such a function, and as other platforms—the Internet of things—grow in adoption, the landscape becomes even more complex. In this paradigm, the ability to deduplicate audiences becomes more reliant on census-level data as single-source measurement becomes increasingly cost prohibitive and more overlapping segments demand finer cuts of data.

**Advanced Audiences and Currencies**

Television-measurement methods that incorporate massive datasets based on, for example, cable set-top box data provide the data infrastructure and requisite sample sizes for reporting on more refined audience segments. Media planners increasingly are relying on these data not only for targeting but for budgeting as well.

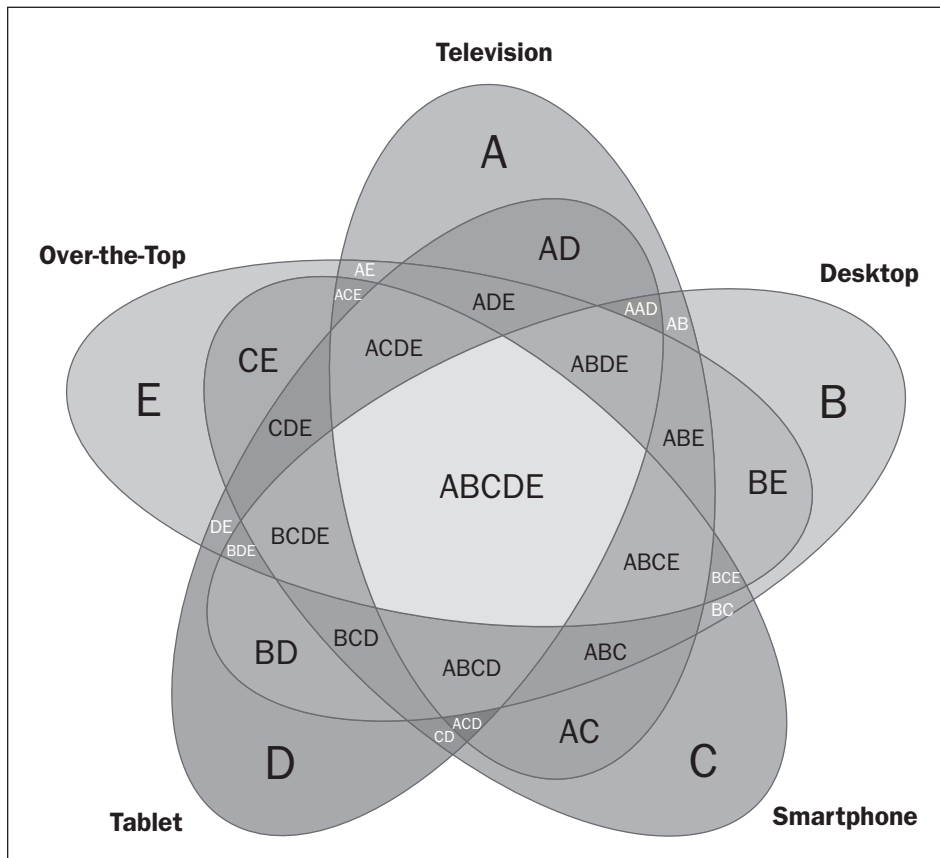
Traditional audience measurement methods long have been predicated on panel-derived standard age and gender demographics to describe audiences. For supplementary psychographic information, third-party data sources, such as MRI (renamed GfK in 2010), have been used. Because of sample-size constraints of panel measurement, however, integration of these sources has required a fusion methodology, which assumes, for example, that the behavior of one 25-year-old woman necessarily corresponds to the behavior of another 25 year-old woman.<sup>6</sup>

Audience measurement is becoming much more advanced as a result of massive data scale. In 2017, television-viewing data based on set-top box data can be combined directly with third-party advanced audience descriptors, such as

- purchase intent;
- brand-buying behavior;
- demonstrated interests;
- viewing behavior;
- any number of other variables.

This allows marketers to allocate their advertising spending toward the most desirable audiences without having to rely on age and gender as surrogate planning variables.

Buyers and sellers of advertising already have begun to shift some of their transactions toward the use of these



**Figure 2** Cross-Platform Overlap Model for Five Media Platforms

<sup>6</sup> "Cross-media research: Moving beyond demographics." (n.d.). December 6, 2016, from the GfK MRI website: <http://www.gfkmri.com/solutions/cross-media-research/>

advanced target audiences. Content owners, such as Dan Aversano, senior vice president of Turner's advertising innovations and programmatic research division, have become vocal about the need to evolve in this direction. "Age/sex demos are by and large outdated as a way to plan, guarantee and evaluate media decisions," Aversano told MediaPost in October 2016. "The good news is that many advanced datasets are now available. And we believe that we need an ecosystem that enables advertisers, agencies, and media companies to use a vast variety of behavioral and attitudinal data, both first-party and third-party."<sup>7</sup>

Improved standardization of advanced audience segments on the basis of industry-accepted methodological standards, whether put forth by the Interactive Advertising Bureau, Media Rating Council, or other industry bodies, can ensure consistency of their application in the buying and selling of advertisements. We believe these advanced audiences could gain acceptance as currency metrics that will usher in a new era of advertisement buying and selling predicated on precise audience data.

### The Shift to Programmatic And Addressable Advertising

The next area of innovation is the move toward addressable advertising and the automated buying and selling of advertisements. Digital already has experienced a pronounced shift in this regard: Digital-media research firm eMarketer estimated that U.S. programmatic advertising spending more than doubled from 2014 to 2016, to \$22.1 billion. The firm predicts that in 2017 spending could increase by another

24 percent.<sup>8</sup> Programmatic advertising in television, by comparison, is small, estimated at \$700 million in 2016, but it could increase to \$4.4 billion in 2018.<sup>9</sup>

Programmatic advertisement buying and selling, on the one hand, is not without its flaws. Fraudulent activity is rampant in digital advertising, creating significant obstacles for effective use (Fulgoni, 2016), and the algorithms involved in remarketing can place advertisements on undesirable sites without the brand's knowledge.<sup>10</sup>

On the other hand, programmatic buying and selling have paved the way for digital advertising to benefit from improved efficiency and a means of reaching more targeted audience segments. Advertisers who want to reach a person actively shopping for a new car can do that, not just on auto-resource websites but around the entire web. Programmatic technology has enabled a powerful combination of scale and targeting that was not possible in the days of directly bought inventory.

The television market, however, remains far behind digital in terms of addressability. Most inventory still is bought and sold at the show or network level. Addressable advertising delivery (the ability to deliver different advertisements to people watching the same show) in 2016 mostly was limited to satellite distributors, some cable companies, and video-on-demand content. An estimated 50 million U.S. households out of 118 million can be reached via addressable

television.<sup>11</sup> The amount of time allocated to addressable television advertisements, however, is severely limited.

Digital, by contrast, is an inherently on-demand medium, so its high rate of addressability makes sense. Television largely remains a linear-dominant medium, so it will continue to favor directly bought inventory. The shift to an on-demand dominant medium, however, may not be too far away, and that change likely will open the floodgates to a more programmatically driven television-advertising environment. It's a matter not of "if" but of "when."

### Which Metrics Will Reign?

#### Reach versus Ratings

As traditional television content has begun to move online, a debate has been raging over the comparability of reporting metrics. A frequent gripe coming from the television side concerns the use of a digital-audience number in comparison with television-audience ratings. The specific point of contention is that digital publishers tend to cite their total aggregate audience over the course of a viewing period of time, whereas television uses the average-minute audience metric.

The debate featured prominently when Yahoo bought the rights to a 2015 National Football League (NFL) game between the Buffalo Bills and the Jacksonville Jaguars. Yahoo reported that the game, the first-ever NFL game broadcast via digital platforms, attracted an audience of 15.2 million viewers. This number compares favorably with a typical nationally broadcast NFL game, if compared with the average audience ratings for television. Yahoo also reported a total viewing time of 460 million minutes, however, which translated to an average audience rating of 2.4 million—far below

<sup>7</sup> K. Lukovits. (2016, October 14). "Turner: Measurement side needs to step up for audience deals." Retrieved December 6, 2016, from the MediaPost website: <http://www.mediapost.com/publications/article/286895/turner-measurement-side-needs-to-step-up-for-audi.html>

<sup>8</sup> eMarketer. (2016, April 5). "More than two-thirds of US digital display ad spending is programmatic." Retrieved December 6, 2016, from the eMarketer website: <http://www.emarketer.com/Article/More-Than-Two-Thirds-of-US-Digital-Display-Ad-Spending-Programmatic/1013789>

<sup>9</sup> eMarketer. (2016, June 28). "Programmatic TV ad spending to more than double this year." Retrieved December 6, 2016, from the eMarketer website: <http://www.emarketer.com/Article/Programmatic-TV-Ad-Spending-More-Than-Double-This-Year/1014143>

<sup>10</sup> A. Picchi. (2016, December 6). "Breitbart wages 'war' on Kellogg's, advertisers flee." Retrieved December 6, 2016, from the CBS website: <http://www.cbsnews.com/news/as-breitbart-wages-war-on-kelloggs-advertisers-flee/>

<sup>11</sup> eMarketer. (2016, June 22). "US addressable TV ad spending to double...again" Retrieved December 7, 2016, from the eMarketer website: <https://www.emarketer.com/Article/US-Addressable-TV-Ad-Spending-Double-Again/1014120>



that of a nationally broadcast NFL game.<sup>12</sup> The 15.2 million audience number was a cumulative-reach number, as opposed to a ratings number, which specifies the average-minute audience.

At the end of the day, what advertisers care about is how many people actually are reached by a campaign. Average-minute audience is the prevailing metric on television, because it is a very close proxy for how many people actually are tuned in when a commercial is airing. On digital, the cumulative-reach metric really represents the total potential reach, but there is often a significant gap between that number and how many people actually are reached by an advertisement running on a site or app.

One thing television got right is accounting for the dimension of time. Average-minute audience has a time constraint, so that number means something in terms of how many people can be reached within that viewing window. Digital, conversely, largely has standardized around monthly reporting, and a well-trafficked website or app might reach 20 million people a month, a rate that a top prime-time television show can match in a half hour. It is clear that the need is not just for a metric of cumulative reach but for one that also accounts for reach velocity—or how quickly (and therefore efficiently) an audience of a given magnitude can be reached.<sup>13</sup>

The notion that an average-minute audience should be a standard rating also seems anachronistic. This metric was very meaningful in a linear television environment when concurrent viewing was the norm. The proportion of a broadcast show's audience who come to an episode between 8

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and 35 days after it airs on television now can top 50 percent, however.<sup>14</sup> One certainly can envision a not-too-distant future when the large majority of viewing occurs in a nonlinear fashion outside the C7 window (the first seven days after a program's original showing). Which metrics will we turn to when that happens?

To answer that question, media planners, researchers, and marketers ought to consider what the rest of the viewing environment looks like. This environment likely will be increasingly more platform agnostic and therefore dependent on measurement of cross-platform audiences. It likely will incorporate measurement of advanced audience descriptors. It is likely, moreover, that a substantial amount of television advertising will be bought and sold programmatically and delivered via addressable means.

This environment demands precision measurement of advanced audiences on an unduplicated basis across platforms. Cumulative metrics of reach, frequency, and gross rating points will need to be calculated on a more granular basis, so that campaigns can be planned and evaluated with an understanding of how quickly their target audiences can be reached. This vision of the future may argue for reach as the primary metric, but only when it is

accompanied by sufficiently narrow reporting periods. Daily and weekly reporting that is consistent across platforms delivers many of the benefits that currently are captured in today's average audience-rating metric. This allows planners to realistically model cross-platform reach and frequency within their target audience.

We ultimately believe the industry is headed toward a metrics convergence that will be defined by the common framework of reach, frequency, and audience but empowered by digital's ability to increase the granularity of reporting. Digital measurement increasingly must standardize around daily and weekly reporting, whereas television needs to adapt to standardization around more narrowly defined audience segments. **JAR**

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<sup>13</sup> "The Missing Media Metric: Reach Velocity—Part 1." *MediaVillage.com*, June 15, 2016. Retrieved December 7, 2016, from <https://www.mediavillage.com/article/the-missing-media-metric-reach-velocity-part-1/>

<sup>14</sup> "TV Networks Aren't Getting Paid for Half the People Watching Their Shows, Says Data from SymphonyAM." *International Business Times*, June 12, 2016. Retrieved December 7, 2016, from <http://www.ibtimes.com/tv-networks-arent-getting-paid-half-people-watching-their-shows-says-data-symphonyam-2380865>