NBCUniversal Measurement Framework

Look Book V1

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Introduction

At NBCUniversal, we believe there's no more pressing question facing the media and advertising industry than measurement.

Measurement determines what we value and how we transact on it, how we evaluate impact and even define success. It's the foundation of trust, and the language of partnership.

Yet, as consumer behavior has shifted, and technology has expanded the media ecosystem, the way we measure everything in it—from audiences to impact to return on investment—the TV currency we trade on lags far behind.

Indeed, the only measure of our industry's future success will be the success we have in adopting new measurement yardsticks at scale—ones that accurately, effectively, and respectfully keep up with the speed of today's (and tomorrow's) consumers. So how do we get there?

To me, that destination is what my colleagues and I call "measurement independence"—a world where we're no longer bound by legacy thinking and metrics. It's a future where companies can choose to adopt multiple, interoperable measurement systems to understand the fullest picture available, with the highest standards, and constantly adapt these systems to new challenges, consumer shifts, and behaviors with ease and speed. And that future requires building a robust market for measurement solutions that are effective, innovative, and impartial.

That's why, last year, NBCUniversal set out to explore, evaluate, and, ultimately, expand the measurement solutions available to us.

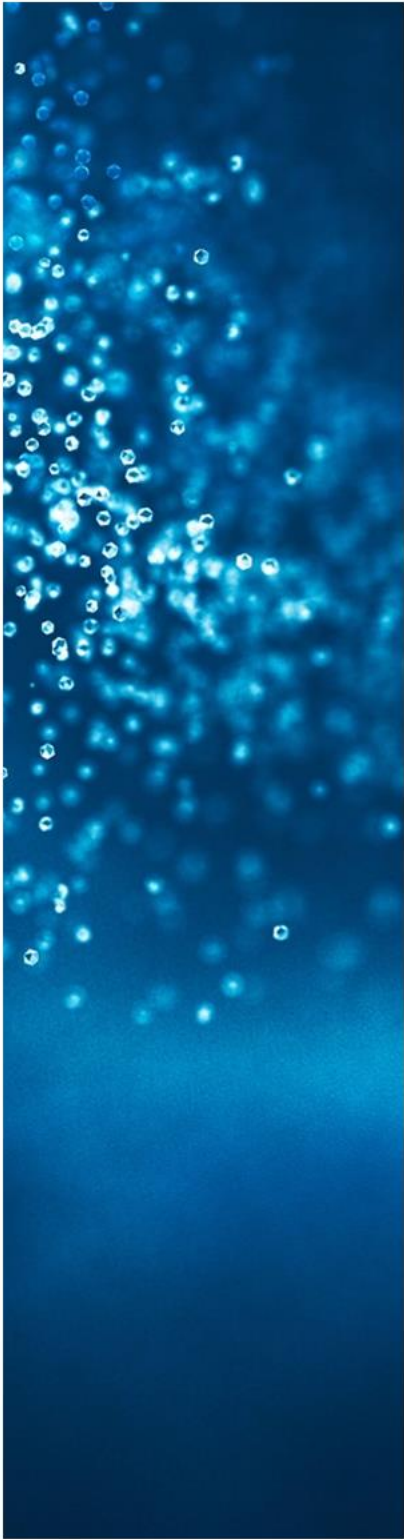First, we began by surveying the existing landscape. We issued an RFP calling on every innovator to share with us their capabilities and cutting-edge yardsticks. And taking transparency as our North Star, we committed to sharing our discoveries through both the Measurement Innovation Forum and the VAB's Measurement Innovation Task Force, so that every stakeholder could have a say in the future of measurement.

The response was overwhelming: we received proposals from more than 120 companies. Thanks to six months of hard work spent closely examining every proposal and testing solutions, as well as the willingness of our partners to share information and contribute their valuable input, we have our map in hand—a Measurement Framework V1 that covers every major solution category.

Measurement Framework V1.0 Nov 2021
Industry in state of flux, subject to change. Will be updated regularly. Companies currently in alphabetic order by category.

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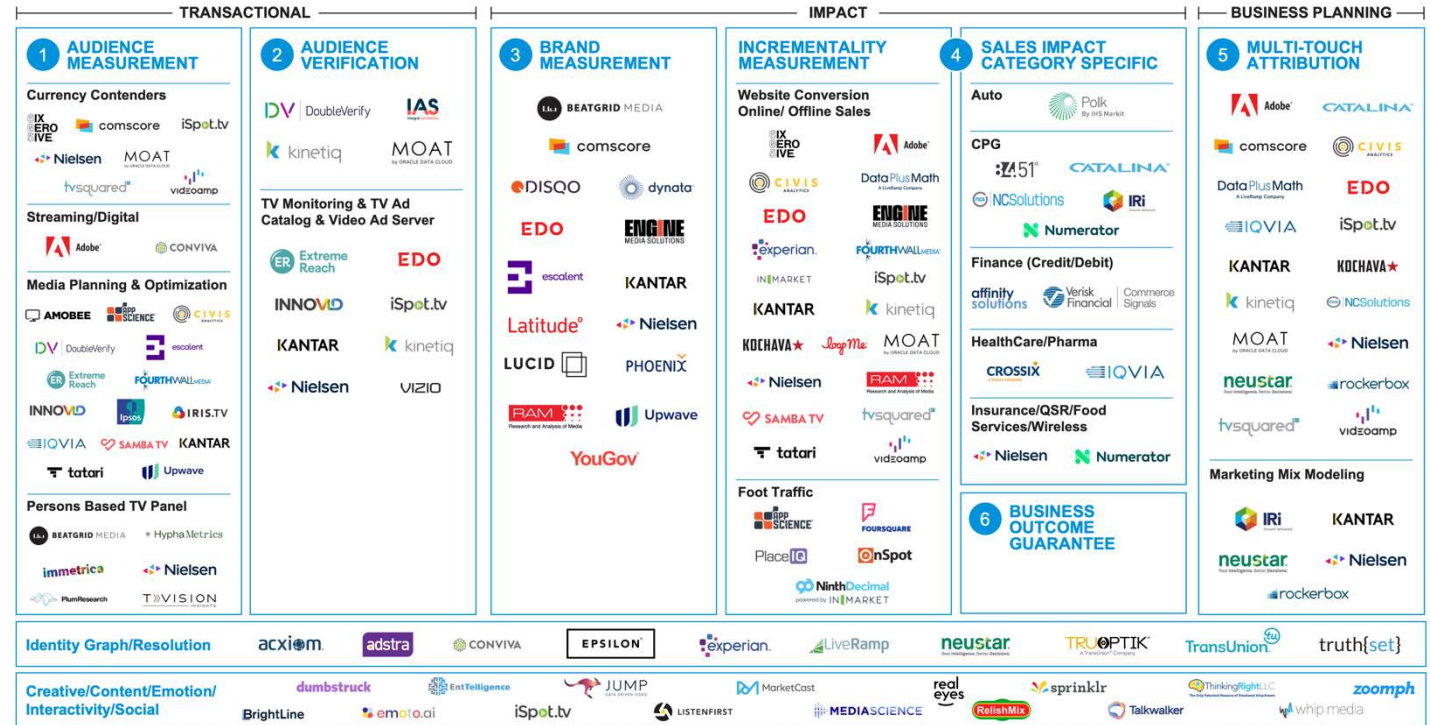
Now, it's time to take a closer look at this map and start charting out the possible routes to our next destination.

To help you begin to explore and evaluate these options quickly and carefully, NBCUniversal has compiled this **Measurement Look Book.**

As we build out this Look Book over the coming months, you will see a chapter that is dedicated to each category of measurement solution. For every category, you will find an overview of the criteria used to evaluate these solutions and how they compare to one another, as well as a high-level summary of each company and its capabilities.

We hope you'll begin evaluating these potential partners and yardsticks for yourself, along the dimensions that matter most to you and the industry as a whole.

The beginning of the future of measurement is in these pages—if only we are willing to seize it.

Kelly Abcarian
NBCUniversal, EVP Measurement & Impact

Chapter One: Audience Measurement

For longer than anyone 18-49 has been alive, a single currency has dominated the TV ecosystem. But decades after its introduction, that currency—on which billions of dollars are transacted every year—is about to transform radically. The question is: what yardsticks will replace it?

That's why, in conversations among industry stakeholders, Audience Measurement has risen to the top of the list, and remains an urgent need for major brands, media holding companies, and trade bodies. And it's why Audience Measurement is the first category to be analyzed in this Look Book.

Because any road to measurement transformation starts with audiences and being truly obsessed about the consumer's engagement and experience.

This first chapter overviews eight currency contenders working to redefine how our industry transacts, and reconnect measurement to actual consumers, by finally taking into account their cross-platform habits.

In the process of evaluating these companies, three key questions emerged. These are questions colleagues around the industry continue to raise and spend their time trying to answer. And so, before diving into the evaluation of any individual companies, it's worth considering these higher-level questions about the state of Audience Measurement today, its future, and the available solutions.

First, identity.

The future of measurement rests on a strong foundation of identity. It's the key to better counting, greater precision, more effective interoperability, and more efficient optimization. In part, that's because as more and more publishers and advertisers collect first-party data, the value of that data is only as good as the ability to activate on it.

So, the question is: **What identity frameworks are being used, and will they be interoperable?**

That's because the power of identity is dependent on interoperability. Already there are existing ID graphs, representing billions of dollars of investment, which have the potential to form the spine of all these solutions. But the strength of that identity spine—like any spine—depends on keeping it straight, not pulled in eight different directions. Where new solutions do not plug into existing graphs, or look to reinvent the wheel, it's possible we set ourselves back, rather than for success.
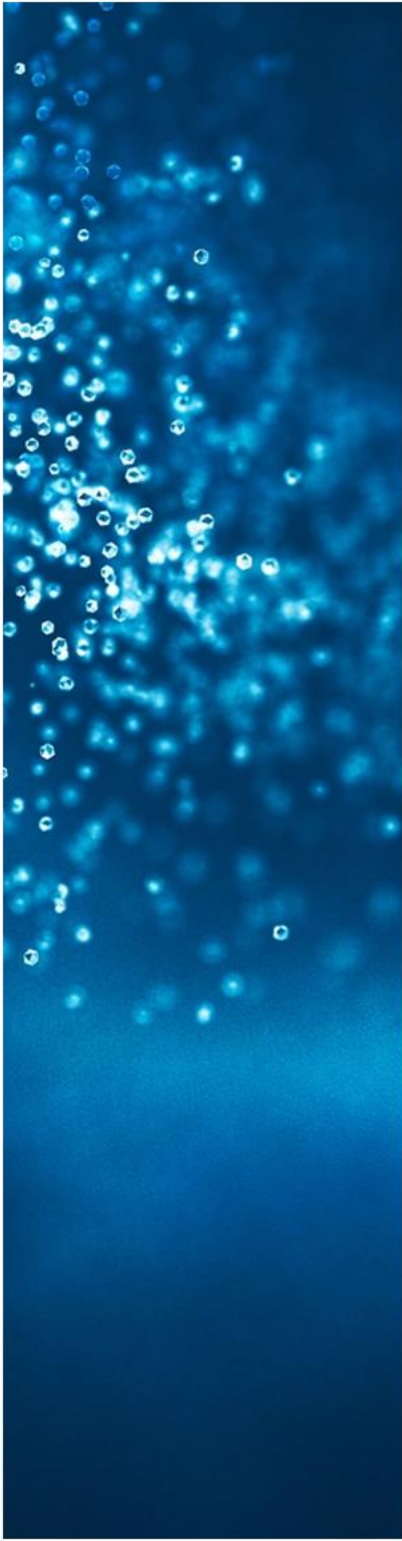
For this reason, identity is a competency in itself. For our part, at NBCUniversal, we encourage measurement partners to work with others on identity to establish interoperability. Indeed, as streaming audiences continue to grow, and first-party data allows publishers and advertisers to connect first-party data, it will be critical that identity for measurement lines up with the identity framework for targeting. Anything less is a missed opportunity.

Of course, measurement partners who lean into the most valuable, interoperable partnerships for advertisers—especially those that are interoperable with and take advantage of the large identity spines—will enable advertisers to better connect with the right consumers. In other words, identity and interoperability will be key to whether a measurement solution will be able to drive better efficiency, reduce waste, create better impact results, and eventually demonstrate return on investment.

Second, counting.

It seems simple, but since each solution approaches the problem slightly differently, it's been useful to ask: **what is this actually counting?** How does that affect the results each solution shows us?

Depending on the answer, it's clear a seemingly small distinction can result in a massive difference. For instance, consider the fundamental difference between counting people and households.

From Nielsen to TVision, actual people panel-based projections remain a popular yardstick. Today, on any given day, approximately 10,700 HH in the Nielsen panel are used to calculate audience estimates based on directly collecting the people in front of the TV, requiring panelist compliance to more deterministic persons-in-the-room viewing based on 5,000 HH across the 25 top advertising markets (TVision). And yet, given the highly complex, fragmented landscape, to achieve a high confidence level, a company taking this approach would need many more hundreds of thousands—potentially millions—of actual people in their people-based panel approach if we want to accurately count people behind this fragmented viewing landscape. With today's fragmentation, we must ask ourselves, **how is counting using people-based panels even feasible anymore? And does this really drive better effectiveness for advertisers in today's world?**
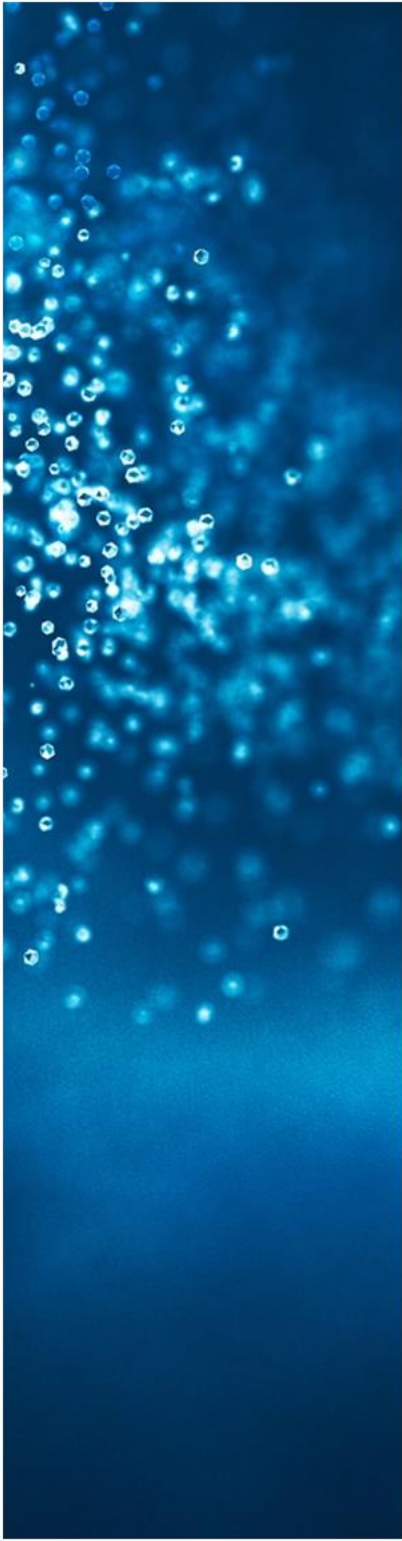
Meanwhile, based on identity and first-party data available, it's clear the capability to easily count people at the household and device levels already exists. In short, just as technology has made precise targeting possible, the resulting fragmentation has rendered the accurate counting of people using people-based panels challenging for at least the foreseeable future. We, at NBCUniversal, believe that counting needs reimagination and our attention.

Third, quality.

When it comes to TV, there is no accurate quantity without accounting for quality. And because TV's audience measurement has long been used as a separate currency to capture the value of premium content, rather than precise targeting and tonnage, any transition to new measurement risks leaving quality behind.

To that end, rather than just looking at counting and quantity, stop to ask: **how does this account for the quality of content?**

Premium video is a unique, and uniquely effective, medium. And while consistency of standards, like those proposed by the MRC, will be crucial for accurate measurement, too often the result favors a lowest common denominator over a content differentiator. But where walled gardens call for equivalizing impressions, we know multiple yardsticks can help us understand the richness of our ecosystem, and the distinct roles played by different kinds of content.

This question of quality becomes even more critical when we consider that no measurement company in this chapter uses the same exact impression qualifier, and time alone is not an indicator of quality, only quantity. But even though starting with the quantity of impressions based on a minimum tune-in threshold is a starting point, even with this, numbers can change quite dramatically depending on whether a company is using a one-second exposure, a six-second exposure, to even a 1-minute exposure.

That's why at NBCUniversal, we believe any new measurement standard needs to account for the quality of content, not only quantity of audiences.

We know great content helps brands grow and build meaningful relationships with their consumers. And for consumers, who spend five hours a day with this content, maintaining that investment in great content is vital. We cannot afford to incentivize a race to the bottom. As we've seen in other forms of media, a society that only values audiences, and does not account for, or invest in, what they're watching, will not be a healthy society.

Ultimately, building in this kind of understanding of quality now will only help going forward, as we continue to move across the Measurement Framework and aim to measure the impact of that content. Undervaluing the quality of content today means undermining a data-driven strategy tomorrow.

Now, with these questions in mind—about identity, counting, and quality—we turn to evaluating the companies in this category.

To help orient your reading, we've created a single graph comparing eight ad currency contenders along three axes: completeness of solution, ability to deliver, and cross-platform currency readiness.

Then, for each company, you will find a short summary written by NBCUniversal that considers their capabilities across 25 attributes, along with in-depth responses provided by each company, in their own words.

We appreciate all of these cross-platform measurement partners for their contributions here, their continued collaboration and transparency, and most of all their willingness to help educate the industry. We hope the resulting chapter is a useful resource for you and your partners. Together, we are expanding what's possible for our industry, and building a more vibrant, more accurate, more competitive measurement future.

US Cross-Platform Ad Currency Contender Evaluation: Defining Three Value Variables

There are a lot of areas to consider when evaluating cross-platform measurement services, including: the source of data, ad identification, identity, methodology, through to reporting and speed of delivery. We have summarized this into the industry's first **US Cross-Platform Ad Currency Contender Evaluation**.

To make this evaluation easier to sort through, we have grouped each aspect of our analyses across three areas we define as Value Variables:

1. **Completeness of Solution**
2. **Ability to Deliver**
3. **Cross-Platform Currency Readiness**

These value variables allow us to look at 25 robust attributes, which will help determine the readiness of these measurement partners to bring forward cross-platform measurement.

The first value variable is **Completeness of Solution**. This is important to quantify as all sources of TV viewing must be represented, otherwise the impressions and reach reported will be incomplete. This value variable captures the input ingredients of audience estimates, such as the scale and breadth of viewing sources and ad occurrence data. Any solution needs to encompass representativeness, geographic footprints, UEs, and where and when individual ads have aired. Completeness of Solution also includes the provider's processes for refining raw viewing data streams into impressions, GRPs, reach and frequency. It also considers each company's operational practices in cleaning the data, computing the impressions, enriching the device level data with demographics or HH characteristics, and weighting and projecting to national levels.

In other words, **Completeness of Solution** is meant to reflect the core inputs, across 11 total attributes — such as inventory coverage, quality of ad occurrence data across platforms, impression definition, de-duplication, and use of identity to highlight a few. Below are a few key considerations we believe are important when performing the evaluation:
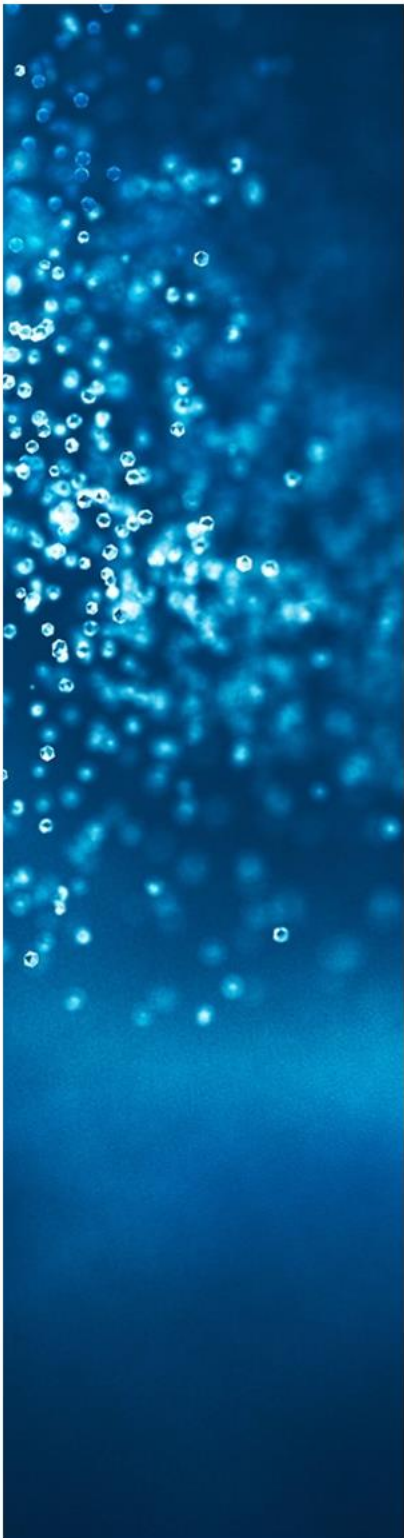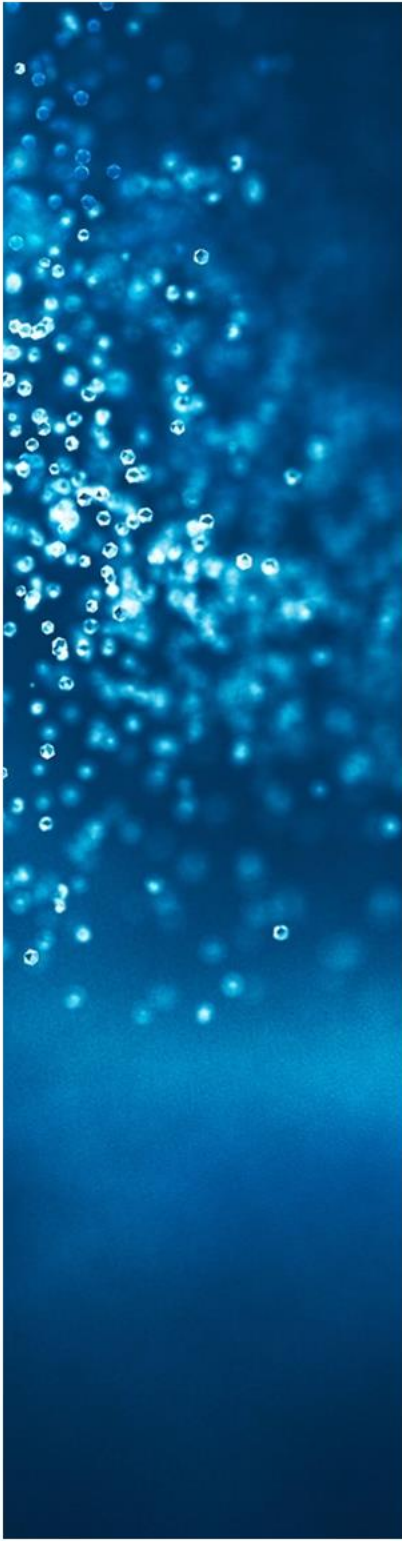
1. **Ability to Measure All Viewing Sources:** With the fragmentation of today's landscape accelerated by CTV, collecting complete data where the marketer can see it all is paramount. This requires measurement to be collected from tens of millions of households, so we can not only measure small campaigns and the long tail but ensure all TV viewing is represented— otherwise the impressions and reach reported will be incomplete. This often involves bringing in streaming measurement partners who have the specific data scale and expertise in measuring across both ads and content across these experiences.

2. **Quality of Ad Occurrence Sources:** As we move away from proxy based commercial ratings to exact commercial measurement, ad occurrence data has become an essential ingredient—and correct integration with viewing sources is critical. The quality and ability to detect with high accuracy rates in which to not compromise speed but deliver on results is paramount. This is a big driver of delivery lag times we saw across the measurement companies.

3. **Impression Definition:** At NBCUniversal, we believe that there should be a standard definition based on content type that ensures that impressions are not equivalized, so that the advertiser can clearly translate the impact any given platform or content is driving across the performance funnel. There are known differences in performance based on content: for instance, ads perform differently due to channel format or ad length, and that has a direct effect on outcomes. We need to consider how we create a content quality index versus embed the definition of time in the qualification of impressions. Qualification should focus on completion rates, and not a 2-second definition where an advertiser won't be able to discern what is driving their suboptimal returns across what platforms or publishers.

4. **De-Duplication of Audiences:** As the video world is fragmenting by device and application, any measurement company who wants to play in planning and cross-platform measurement also needs to reflect all devices and applications, as well as the various viewing modalities. If a measurement company's underlying data is too centered on linear and doesn't properly represent streaming (or conforms the streaming audience to look like linear), its planning and post-campaign measurement— not to mention de-duplication—will be skewed. It's critical to investigate how a measurement company is creating the linkages to understand the overlap, and therefore unduplicated and deduplicated reach.

5. **Identity:** Identity is a core component of every measurement system, so it's important to understand how measurement partners use identity. There are so many big signals and scaled identity spines that can help drive more precise advertising decisions, but any measurement must align with the identity used to build the audience target.

Below is a complete list of the value variable for "Completeness of Solution" we evaluated in which to plot the measurement companies on the **US Cross-Platform Ad Currency Contender Evaluation**.

Value Elements #1 Completeness of the Solution

Linear TV Viewing Sources	• Size and sources of TV data are key differentiators among providers • Current sources comprise ACR, MVPDs/vMVPDs, Satellite, CTV ACR from OEMs or streaming providers, and viewership panels
Digital Viewing Sources	• Raw AVOD/SVOD exposure accessed from publisher server logs via secure compute environments, clean rooms, server to server integrations, or tracking pixels
Ad Occurrence Sources	• Key ingredient of audience estimates, where and when individual ads aired • Publisher, air date, and time for each ad sourced from publisher post-logs, 3PP sources, or proprietary ad catalog & airing detection platform.
Conversion {Outcome} Sources	• Links ad exposure to a campaign to subsequent behavior • Involves direct outcomes (sales or online purchases), or intermediate outcomes (retail & website visits or search behavior)
People Panel	• Used to estimate persons demographics for STB, ACR, or server log HH-level viewing data and to inform deduplication between walled gardens • Alternative to measuring device or household level impressions
Universe Estimates	• Universe Estimates reflect the true size of a relevant population, and basis for two critical measurement methods: weighting and projecting
Methodology/Weighting	• Involves operational practices in cleaning data, computing impressions, enriching device-level data with demographic or HH characteristics, and weighting and projecting to national levels • Methodology includes all of the provider's processes for refining raw viewing data streams into impressions, GRPs, R/F
Representation	• Representation of the U.S. population in reporting and measurement • Balancing to national Census levels is more challenging and potentially biased when a small number of records are used to extrapolate to a much larger group, accuracy and margin of error need to be considered
Impression Definition	• A single exposure of a HH or person to content or an ad • Qualification of impression count determined by measurement partner
Deduplication	• Process of identifying impressions overlap across all digital and linear sources for a given person or HH to derive unduplicated campaign reach often involve identity graphs, panels, or statistical inference to link viewing devices to individual HHs
Identity	• Process of matching individual HHs, persons, or devices across data sources, assigning device-level viewing data streams to the correct HH or individual • Dependent on 3rd-party identity providers, can also involve 1PP data and proprietary measurement identity graphs

The second value variable is **Ability to Deliver.** This provides an understanding of the ability to report accurate campaign impressions and reach by capturing viewership everywhere inventory is distributed across linear, streaming, digital, VOD, OTA, and OOH. It also needs to ensure that the coverage is weighted to reflect total US HH. Some degree of weighting is critical in the creation of representative audience estimates, even with near census datasets across streaming and digital devices. This also includes understanding how reporting latency and the accuracy of the metrics based on speed and coverage could vary.

In other words, **Ability to Deliver** is meant to reflect the reporting outputs, across 10 total attributes — including the viewing sources measured (and gaps), demographic reporting, speed, and the ability to deliver on advanced audiences, to highlight a few. Below are a few key considerations we believe are important when performing the evaluation:
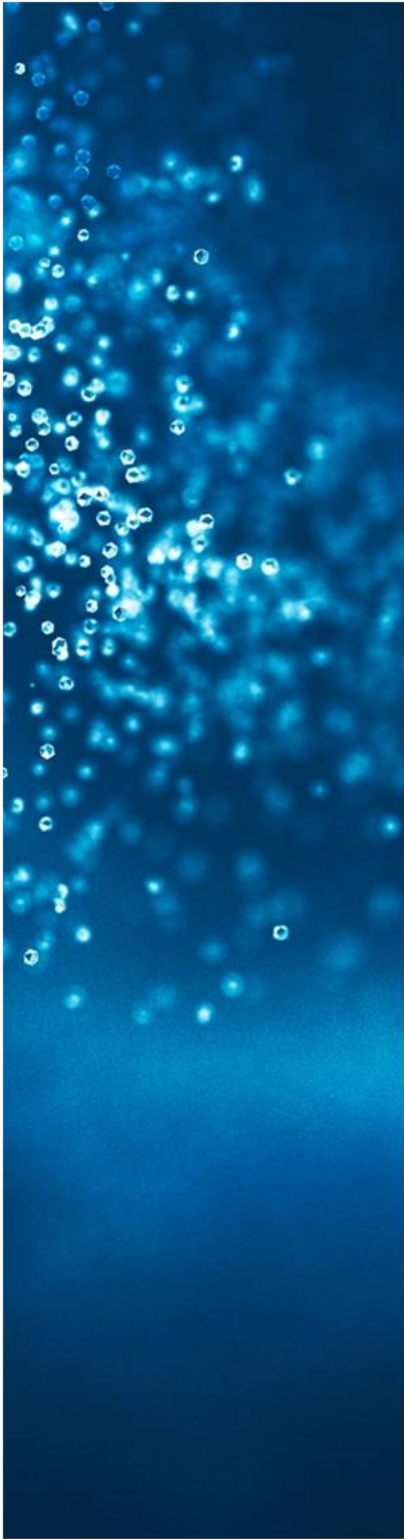
1. **Persons Measurement:** People matter, but our ability to count people in today's fragmented landscape is no longer practical with small people-based panels. Doing so simply ties us to legacy delivery systems that have lost their ability to deliver accuracy and drive efficiency for both advertisers and programmers alike. Right now, legacy systems are applying persons demos from Linear to CTV. How do we take the viewing patterns of linear and move them to try and measure a fragmented CTV world? Rather than continued reliance on small people-based panels, we believe we should look for more sophisticated solutions that can eliminate waste in ad spend and help advertisers take advantage of—and accurately measure—CTV's ability to target increasingly advanced segments of the population, including with an underlying target including persons.

2. **Speed:** Advertisers need faster insights to make more informed, more impactful decisions. In other words, measurement companies need the ability to measure at an ad level with the same speed and accuracy as digital, as when measurement accelerates, so will the optimization of those insights. As consumers rapidly shift across platforms, advertisers deserve to understand how to best optimize to drive the greatest impact.

3. **Deliver on Advanced Audiences:** Advanced audiences enable us to deliver on the more precise audiences advertisers want without attempting to estimate persons. And even better, we can still understand the delivery of an audience target based on viewing by households with age and gender. For example, if a user chose the attribute "Age 25-54", a home qualifies if at least one household member is 25-54. Advertisers can also go beyond age and gender or add to this target to find audiences based on their behavior, interests, and lifestyles. As we move to large, scaled data across both Linear and Digital/CTV, advertisers can now connect their first-party data to identify their desired audience, precisely activate, and get accurate measurement of the delivery as the campaign runs. We believe all cross-platform measurement should transition from counting people based on small people-based panels to delivering on advanced audiences—which allows for greater efficiency and drives better outcomes for advertisers—making this a key capability of any cross-platform product.

Below is a complete list of the value variables of "Ability to Deliver" we evaluated in which to plot the measurement companies on the **US Cross-Platform Ad Currency Contender Evaluation**.

Value Elements #2 Ability to Deliver

Inventory Measured	• Inventory included in campaign reporting, coverage of viewership everywhere inventory is distributed (i.e., across linear, streaming, Digital, VOD, OTA, and OOH)
Inventory Gaps	• Gaps in inventory not counted for in reporting, important to understand what is not captured as viewing continues to fragment
Geography Covered	• Geographical coverage of distribution outlets and audiences included in reporting, Local, National, Global
HHLD Universe	• Universe of HHs included in reporting • Providers typically aggregate data from many sources and weight their sample to reflect total U.S. HHs
Persons Measurement	• Ability to report on the person/persons viewing a given program rather than just the device • Statistical methods/models are estimating persons, quality and accuracy is unknown
Demographic Reporting	• Ability to report on standard demographic groups • Reporting can be done at HH with Demographic level or at Persons Demographic level
Co-Viewing	• Count of multiple people behind a shared viewing environment • Ability to report on shared TV viewing (e.g., people gathered around a television set and sharing a viewing experience)
Device Breakout	• Ability to provide viewing breakouts by device • Screen size and viewing environment affect consumers' content selection, attention, length of viewing session and involvement
Advanced Audience	• Provide a specific measure of the audiences' advertisers without resorting to demographic surrogates • Created by joining a viewing data source to a wide variety of behavioral outcome data sources (1PP/3PP) through identity resolution and data matching processes.
Speed	• Turnaround time for campaign reporting • Providers vary in their reporting latency, and have different tradeoffs of speed, accuracy and coverage

The third value variable is **Cross-Platform Currency Readiness**. This provides NBCUniversal's assessment of revenue is an important look at their legacy as well as the market's response to their future offerings and expertise. This variable also includes an understanding of whether this company has deep expertise in advertising, media, and the full spectrum of digital and linear platforms as well and how to harness the power of big data and identity. And of course, agility as well as ongoing investment in data and systems are required for any viable cross-platform currency to keep up with consumers and technology of tomorrow.

Cross-Platform Currency Readiness looks at 4 total attributes, including: how long each company has been in market with a cross-platform product; the product usage across buyers and sellers; overall agility; and what their plans are for MRC accreditation and/or transparency in the marketplace (i.e., making the same data/tools available to both buyers and sellers). Below are a few key considerations we believe are important when performing the evaluation:

1. **Company Metrics that Matter:** Understanding how much traction these companies have would be easy if we could get them all to break down their revenues associated with cross-platform measurement. This would be a leading indicator of whether they are focused on providing the quality of measurement this industry needs. Most of these companies have next generation technology, data, and specializations that are enabling advanced cross-platform measurement, but the market adoption is just getting underway. Again, we believe the value of big data and identity cannot be understated—and the efficiency in media as we move ahead is becoming more addressable where the need for panels need to be examined as to what role persons-based panels need to play in transactional metrics. Ultimately, better data drives better value, greater efficiency, and more impact for advertisers.

2. **Additional Services:** Advertisers benefit when a measurement company can go beyond counting to create a more comprehensive set of products—like audience verification, brand measurement, and performance measurement. Though not a requirement for delivering on cross-platform measurement, operational efficiencies could improve with a single measurement and evaluation system. While the industry knows how to measure outcomes at a high level, we have work to do on how to translate those variables into planning/selling/buying against outcomes—and that will require interoperability with audience measurement as well as establishing a framework for outcomes and the media variables that drive them, be it reach in target, frequency in target, or recency relative to purchase occasion.

Below is a complete list of the value variable of "Cross-Platform Currency Readiness" we evaluated in which to plot the measurement companies on the **US Cross-Platform Ad Currency Contender Evaluation**.

Value Elements #3 Cross-Platform Currency Readiness

Length of Time In Market, Company Size, & Ownership Status	• Measures of stability and success, reflecting institutional experience and the ability to satisfy customers' needs • Many companies begin with a specialization and build out cross-channel capabilities, making it critical to demonstrate expertise in advertising, media, and the full spectrum of digital and linear platforms
Client Base/ Revenue Sources	• Audience measurement providers' client base and sources of revenue, required to evaluate their legacy and the market's response to their offerings and expertise. • Client base diversification is important for transactional currency ability to serve the cross-platform ecosystem
Media Rating Council Accreditation	• MRC audits whether a measurement service merits accreditation (or continued accreditation) through standards compliance, service performance and verification of required disclosures. • Confidential annual audit reports, prepared by independent CPAs, reviewed by MRC members, provide the results of detailed testing and evaluations that verify methods and internal controls, and test the effectiveness of execution of major processes • Audits become the basis of seeking quality improvements in measurement, where necessary.
Additional Services	• Services beyond audience measurement, such as audience verification, brand measurement, and performance measurement • Not a requirement for cross platform measurement, additional operational efficiency

These three value variables are how NBCU evaluated the **US Cross-Platform Ad Currency Contender** snapshot. Every measurement company's cross-platform product was evaluated on "Completeness of Solution", "Ability to Deliver", and "Cross-Platform Currency Readiness".

The evaluation itself is the opinion of NBCU based on the work we have done through our RFP process, including going through 120+ submissions, holding formal presentations, and conducting data evaluations, including our own test and learn we did in this past Summer Olympics across over a dozen advertiser campaigns.

Of course, this evaluation is just a starting point. We also gathered additional details through a detailed questionnaire sent to each of the measurement companies, which responded in their own words on details of their cross-platform currency capabilities across all 25 key attributes. We encourage everyone to use this resource to dive into the details provided by each of these companies—included in the next section—as we continue educating our industry on the ad currency contender options available.

Audience Measurement
U.S. Cross-Platform Ad Currency Contender Evaluation Snapshot V1.0
Feb 2022
Industry in state of flux, subject to change. Will be updated regularly.
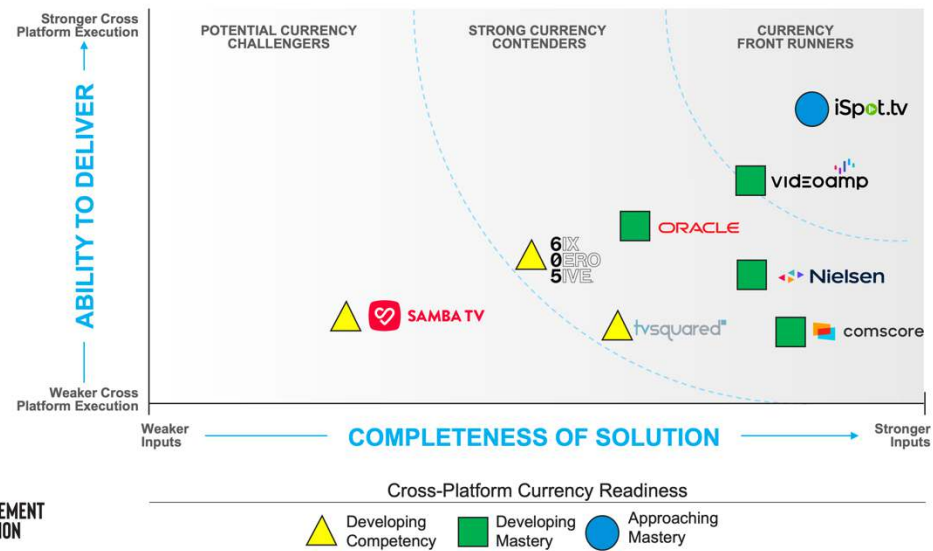
Audience Measurement

U.S. Cross-Platform Currency Contender Evaluation Value Variables for Consideration

VALUE VARIABLE #1

Completeness of Solution

Definition

Provides the input ingredients of audience estimates, such as the scale and breadth of viewing sources and ad occurrence. This needs to encompass representativeness, geographic footprints, UEs, and where and when individual ads aired. This also includes the provider's processes for refining raw viewing data streams into impressions, GRPs, reach and frequency. This includes operational practices in cleaning the data, computing the impressions, enriching the device-level data with demographics or HH characteristics, and weighting and projecting to national levels.

Why It Matters

All sources of TV viewing must be represented; otherwise, the impressions and reach reported will be incomplete. The ability to understand the reach estimates depends on the methodology and underlying viewing data; representativeness of matched datasets and identity graphs will drive the calculation of overlap, a key metric for cross-platform planning and pricing.

Key Attributes

1. Linear TV Viewing Sources
2. Digital Viewing Sources
3. Ad Occurrence Sources
4. Conversion (Outcome) Sources
5. People Panel
6. Universe Estimates
7. Methodology/Weighting
8. Representation
9. Impression Definition
10. Deduplication
11. Identity

VALUE VARIABLE #2

Ability to Deliver Definition

Provides an understanding of the ability to report accurate campaign impressions and reach by capturing viewership everywhere inventory is distributed across linear, streaming, digital, VOD, OTA, and OOH. This also needs to ensure that the coverage is weighted to reflect total U.S. HHs. Some degree of weighting is critical in the creation of representative audience estimates. This includes reporting latency and understanding the accuracy of the metrics based on speed and coverage.

Why It Matters

Complete reporting of campaign reach and impressions is critically important to understand what is captured, as well as what is not included in the estimates. Advertisers often manage their marketing geographically, making coverage of all distribution outlets and audiences critical. And speed matters. Marketers want fast reporting for faster decisions for in-flight optimization.

Key Attributes

1. Inventory Measured
2. Inventory Gaps
3. Geography Covered
4. HHLD Universe
5. Persons Measurement
6. Demographic Reporting
7. Co-Viewing
8. Device Breakout
9. Advanced Audience
10. Speed

VALUE VARIABLE #3

Cross Platform Currency Readiness

Provides a measure of stability and success and reflects institutional experience and the ability to satisfy customers' needs. The nature of the audience measurement provider's client base and sources of revenue are an important looks at the market's response to their cross-platform ad currency offerings and expertise. This includes understanding if they have deep expertise in advertising, media, and the full spectrum of digital and linear platforms. Agility, financial health, and investment in data and systems are required for cross-platform currency.

Why It Matters

Given the investment in data and systems, financial stability is required, along with understanding how they serve the market. Including if their client base is concentrated in only one part of the industry or meeting the needs of the entire cross-platform ecosystem

Key Attributes

1. Length of Time in Market, Company Size, & Ownership Status
2. Client Base/Revenue Sources
3. MRC Accreditation
4. Additional Services

Evaluation Prepared by NBCU, Subject to Change.

US Cross-Platform Ad Currency Contenders Look Book V1.0 Feb 2022

	605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
Completeness of the Solution								
Linear TV Viewing Sources	605 has 22M total Smart TVs and STB HHs. 605's reportable audience sample today is 22MM~ HHs. 605 is in active discussions to acquire another material linear (vMVPD) dataset from a nationally representative satellite provider with an intention to close in Q1 2022. A full list of data licensors has been provided to NBCU under MNDA.	Comscore has 40M HH/75M TVs (Comcast, AT&T U-Verse, Dish, Charter/Spectrum, Cox, DirectTV, SambaTV and Vizio).	iSpot has 39M total smart TVs (VIZIO, LG, Toshiba, Sharp, Hisense, Skyworth, Seiki)and 12M STB HH/Devices (One Undisclosed MVPD and TiVo). iSpot has the largest Smart TV footprint of 39M Smart TVs, and is leveraging the STB data to calibrate. iSpot's reportable audience sample today is ~17.1M HH, growing to 34M HH by H1 2022.	Nielsen has a ~ 41,600 proprietary National TV Panel and 30M+ Smart TV/STB HH (Dish, DirectTV, Vizio, Roku).	Oracle receives data from roughly 15MM TVs from iSpot as of January 2022 and are able to match a subset of those to U.S. households via the Oracle Identity Graph. Oracle refers to the U.S. Census for universe estimates, accounting for households that don't have a TV.	Sambas has 6.1M Smart TV HHs from 8.1M TV viewing devices (Sony, Phillips, Sharp, Toshiba, Sanyo, Element, Magnavox, Seiki, Westinghouse, TCL), and STB data from MVPDs. For TV viewing and ad measurement, Samba creates a 3M HH ACR only panel (3.7M TV Devices), which they use to project all US HHs to ensure coverage across Linear and CTV Viewing	TVSquared has 18M+ Smart TV HHs (Inscape). TVSquared reportable audience sample today for data-driven linear is 18M+, which they use to project to all US HHs.	VideoAmp has 39M households across Smart TVs (Vizio/Inscape) and STB providers (Frontier, TiVo, Dish) and one additional partner to be announced soon. VideoAmp reportable audience sample today for linear/data driven linear is 24M, which they use to project to all US HHs. Additional sources are under integration and to be announced soon.
Digital Viewing Sources	605 offers a suite of pixel solutions for video media tracking, and they will accept direct integration based on a client's ability to share the necessary data with 605 via privacy compliant cross walk	Comscore digital business relies on census data collection process. The census data collection process, collecting more than 50 billion digital events per day, including more than 21 billion mobile events each day.	iSpot has direct integrations with 300+ streaming platforms. iSpot's ad tracking pixel is pre-approved to capture data from 300+ publishers and is deployed on 3K+ customer websites/apps. iSpot's approach to capturing complete digital delivery, i.e. Mobile devices or any internet connected devices, can be captured either with the iSpot pixel or direct integration with the publisher, and sell-side and buy-side ad servers (including video DSPs/SSPs) can also receive the iSpot pixel.	Nielsen has a 32K computer panel and a 18K mobile panel. Nielsen has 150+ networks via multiple MVPD apps and Direct apps that have deployed Nielsen's SDK for measurement. Nielsen also has direct server integration of their impressions data across sell-side and buy-side ad servers (including video DSPs/SSPs) and with major digital-first publishers.	Oracle Moat Reach directly measures digital and CTV impressions via tags. On average, Oracle find that each person in the Identify Graph has 6 cookies associated with them. Additionally, Oracle collects 15 different types of identifiers on people in their Identify Graph, including email address, physical address, etc. If/when cookies should be deprecated, Oracle is well-positioned to interconnect via the Identity Graph to other consented ID networks to which the industry may transition.	Samba has several integrations across TV Networks and Streaming services to receive and incorporate their data for measurement products via the following integrations: ACR Viewership Data, Metric & Logging platforms (mParticle, Tealium, etc.), Pixels, Direct Log File ingestion.	TVSquared has direct publisher and server-to-server ad integrations, which captures digital viewing from over 75+ streaming platforms. Additionally, over 6,000 advertisers have deployed TVSquared's response pixel, enabling TVSquared to capture web visits, app engagement and offline activity and tie that back to TV viewing across all screens and platforms.	VideoAmp directly integrates with publishers, platforms and 3rd party AdTech partners to receive census level log data via secure compute environments, clean rooms, other server to server integrations and pixels.
Ad Occurrence Sources	605 has a non-proprietary ad catalog and airing detection platform based on Hive (Virtual MVPD).	Comscore receives non-proprietary ad occurrence data from Kinetiq effective with July 2021 broadcast data.	iSpot has a proprietary ad catalog and airing detection platform. They have specialized infrastructure deployed in 30 cities and data centers across the US utilizing proprietary automatic content recognition (ACR) software that watches TV. There are 1.5M ads in their ad catalog, growing 6K ads a week with a 8 year history. There are 30 full time employees who manage the ad catalog including adding the 80 metadata elements (product, offers, etc.) appended to each ad and auditing and reconciling the ads against the networks ad delivery log leading to 99% accuracy. The ads are tracked and extracted from 160 networks and streaming publishers. In addition, iSpot verifies ads delivered through streaming services directly on the glass using its proprietary ad catalog and native integration with smart TVs	Nielsen has a proprietary ad catalog and airing detection platform. They identify National and Local Linear TV ads via Ad Intel using passive recognition technology. Nielsen has also recently expanded their relationship with Extreme Reach to insert Nielsen watermarks on all national ads running through their platform. Additionally, Nielsen receives national ad logs from measured TV networks and reconciles the above mentioned streams to deliver comprehensive advertising insights. Digital and CTV campaigns are tagged and measured based on direct engagements with clients.	Oracle Moat receives linear TV ads that are captured and catalogued by our ACR data source (iSpot). Metadata for digital ads are captured via ad server macros placed within the Moat tag.	Samba has a proprietary harvester technology which identifies and extracts ads from the full TV broadcast content. Samba also supports direct uploads of creative assets and utilizes Kantar to enrich local market coverage. For digital ads, Samba utilizes a pixel and logs form DSP/SSP partners.	TVSquared receives non-proprietary ad occurrence data coming directly from programmer post logs to combine with smart TV data. For streaming, we use a direct integration with the ad server.	VideoAmp receives a non-proprietary ad catalog based on several different sources. They can ingest a programmer custom linear TV ad schedule or post log. They also leverage Kantar TV ad schedules to identify national ad occurrences. VideoAmp also can take the ad exposure from the Vizio ACR dataset and build an inferred ad schedule.

	605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
Conversion (Outcome) Sources								
	605 licenses 3rd party data such as PlaceIQ (geo-location), Catalina (CPG), and Polk (Automotive)	Comscore partners with Data+Math for outcome based measurement	iSpot onboards client offline sales data: POS, CRM, call center, etc. iSpot licenses 3rd party data such as IRI, Polk, Fandango, and Place IQ for conversion metrics, such as store visits and offline sales. iSpot has deep integrations with Dynata, Upwave and Lucid for brand measurement services. In addition, iSpot also has their own proprietary brand tracking survey (Ace Metrix), issuing 130K survey responses per week for creative assessment, that includes questions pertaining to purchase consideration as well as brand recognition.	Nielsen licenses 3rd party data such as CPG data from NCS, non-CPG data comes from various banks, across multiple payment networks (i.e. Visa, Mastercard, AmEx).	Oracle licenses 3rd party data best suited for the KPI being measured (e.g. sales with loyalty card data across grocery, drug, mass, e-commerce, etc. totaling $1 trillion in annual consumer spend, or location with Oracle's partnership with PlaceIQ).	Samba licenses 3rd party such as IRI, Catalina, Affinity, Factual, Foursquare and mFour, for conversion metrics, such as online conversions and foot traffic. Box office data and other offline conversion sources are on their roadmap.	TVSquared licenses 3rd party data such as PlaceIQ, Adjust, appsflyer and others for conversion metrics, such as store visits and offline sales, app activity and more.	VideoAmp's licenses 3rd party data such as Catalina (CPG) and Foursquare (Auto, QSR, Retail) for conversion metrics, such as store visits and offline sales, app activity and more.
People Panel								
	605 does not currently provide person level reporting but plans to towards the end of 2022. 605 will provide a bridge to a panel synthetically through a combination of statistical personification and concluding active discussions with de-facto leading providers of in-home personification.	Comscore provides a proprietary personification solution that takes advantage of STB audience information to extract person level audience estimates at granular levels. This is achieved through a statistical inference process by which household media consumption data is assigned to, or allocated to, the persons within the household.	iSpot leverages a non-proprietary persons based panel provided by TVision. The TVision data set is not matched deterministically to iSpot, but instead provides iSpot with a distribution of TV watching patterns by age and gender for the given content. iSpot overlays the persons level distributions to their existing household-level data sets to report on person level demographics at scale	Nielsen leverages a proprietary National TV panel of ~41K HHs with plans to grow by 15% come Q2 2023. Nielsen also operates a Portable People Meter panel of ~70k persons that is designed to measure in home and out-of-home viewing. On the Digital front, Nielsen has a panel of ~32k+ persons and mobile panel of ~18k+ persons. Where Nielsen doesn't have direct persons level observations of viewership for linear TV - e.g. via set meters and big data sets - proprietary modeling approaches are used to determine persons in front of the TV set at the time of viewing. Nielsen's digital measurement methodology leads with data integrations from leading digital platforms with direct person's level data delivered in a privacy compliant method and calibrated by Nielsen's panels.	Oracle Moat Reach leverages a non proprietary persons based panel provided by TVision to estimate campaign level attention on TV as well as refine estimates of people who saw an impression and the demographics of those people. Oracle Moat Reach is also testing a couple of panel providers to incorporate coverage of digital walled garden sources.	Samba does not today leverage any persons based panel. They do offer measurement against Experian defined audiences, and/or client provided 1P/3P defined audiences.	TVSquared does not today leverage any persons based panel. This is currently on the roadmap.	VideoAmp has not incorporated persons into their standard product suite but expect to do so by 1H 2022. VideoAmp is currently the only company participating in both the TVision/Gemius and the HyphaMetrics panel trials. They have also had conversations with another company about developing a US based panel to help support the needed use cases.
Universe Estimates								
	LRG survey of TV access, will be replaced with factors from the ARF Dash survey in 2022	Based on a variety of information sources including S&P Global, Comscore's internal linear television subscriber population data, and Comscore Local Market TV surveys	Yes, iSpot's national HH universe is 122.8M HH, based on the American Community Survey (ACS) estimates from the Census Bureau. iSpot maintains estimate for each of 210 market areas and updates its universe estimates annually.	Nielsen uses a variety of sources including - Claritas, Current Population Survey (CPS), Annual Social and Economic Supplement (CPS ASEC), American Community Survey (ACS), Nielsen's National Sample and Nielsen's National Hispanic Enumeration Survey.	Oracle receives data from roughly 15MM TVs as of January 2022 and are able to match a subset of those to U.S. households via the Oracle Identity Graph. Oracle refers to the U.S. Census for universe estimates, accounting for households that don't have a TV.	Samba weights to the US census at the local market level on ethnicity, income, age, gender. Samba uses US Census American Community Survey (ACS) for universe estimates	TVSquared utilizes regional universe estimates published by Nielsen	VideoAmp weights to the US census as updated annually via CPS. In addition, VideoAmp uses TV HH-type universe estimates (OTA, stream-only, etc.) which will be sourced from the ARF's device universe estimates study.

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp

Methodology/Weighting

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
605 starts with accurately counting for household viewership. This means ensuring the household weights balance, adjust, and project household television viewing to correct for biases. 605 uses raking weighting to calculate a weight for every qualified home. An assessment of demographics and viewing characteristics revealed the need to include 9 variables in predicting a home's quantity of viewing by program genre.	Comscore projection methodology starts at the zip code level and builds to the market level. In this projection methodology, they account for several factors, including: the quantity and distribution of cable, satellite, IPTV, and OTA homes; demographic and geographic distribution, adjustments for non-reporting set top boxes. For OTA projection, OTA viewership data models is driven by surveys versus electronically collected.	iSpot starts with accurately counting for household viewership. This means properly weighting each household based on their demographics and the amount of TV they consume relative to the national average. In order to solve for demographic biases, iSpot after obtaining demographic traits from Epsilon then uses a well known survey technique called "Iterative Proportional Fitting", or "Raking", to debias the panel, resulting in significantly more representative of the Census (ACS) values for the US demographics than the raw device panel. iSpot also goes beyond just demographic weights to correct for viewership biases (aka time spent consuming TV). These viewership weights in combination with their demographic weights allows a significant increase in extrapolation accuracy.	Nielsen starts with a representative sample of US TV households. Weighting methods are used to project the sample to the total US, accounting for daily variations in panel cooperation. Nielsen also oversamples to account for known differences in cooperation among varying types of households to keep weights across demographic groups within a comparable range.	Oracle uses weighting to make unbiased inferences about commercial viewing in the U.S. based on the TV footprint matched to the Oracle Identity Graph. Within this footprint, we are able to assess HH demographics. These attributes include education, income, presence of children, household size, age (head of HH), race, urban / rural status, and local market, and are then adjusted to match national values. Except for the last two attributes, information from the U.S. Census is used as the benchmark. TVs matched to HH with full demographic information are also not randomly distributed. To avoid adding another bias, daily activity data (hours of viewing per day) from both matched and unmatched TVs are used to create an activity weight to ensure that with respect to viewing both groups are equivalent. Nightly, the number of active TVs is estimated for use in calculating weights. Identity maps and demographic information are updated at different cadences. We rely on a second data provider for individual level demographics. A similar methodology is used to help ensure that these individuals and households are representative of U.S. TV viewers. These steps have allowed us to significantly decrease our bias with a minimal increase in our variance.	Samba US HHs must be in their panel for at least 28 days and are geographically balanced at the local market level, map demographic and ethnicity data from Experian and balanced vs. US Census. Their method assigns a weight to each Samba HH so that they effectively represent "similar" households. This HH weight number is associated to each Samba device and then used to project results to the national level. The goal is to weight all the HH in a panel such that their total weight represents the census data. All of Samba's viewing data is refreshed daily.	TVSquared takes into account the expected number of TVs in any household and applies a logarithmic formula to adjust for the fact that not all households will have a relevant TV (i.e. one that captures viewership). TVSquared after obtaining demographic traits from Experian then calculates and appends a "demographic weight" to each household for combined impression dataset in each market. This indicates how over or under represented the demographic (age, gender, HHI, etc.) is in the populated set versus the census for that market.	VideoAmp starts by weighting on demography of the households in their footprint. They are also working on controls for weights at STB Box HH, Broadband Only HH, and OTA HH (the ARF UE study will be the source for these weights). VideoAmp uses the census data to provide the universe values and various multi-sourced demography sources for households in their footprint.

Representation

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
% Of 605 Reporting TV HHs (unweighted) across the 22M STB panel is as follows: White 71%; Hispanic 13%; Black 10%; Asian American 4%	% Of Comscore Reporting TV HHs (unweighted) across the 40M STB panel is as follows: White 75%; Hispanic 11%; Black 10%; Asian American 3%	% of iSpot Reporting TV HHs (unweighted) across the 39M Smart TV/STB panel is as follows: White 78%; Hispanic 12%; Black 7%; Asian American 3%	National TV panel composition as of 1/17/2022 - Total Households installed 41,467; HOH White 31,000; HOH Hispanic 5,771; HOH Black 6,253; HOH Asian 1,717	% of OracleMoat Reporting TV HH (unweighted) 6M matched with demographics from 15MM Smart TV/STB panel is as follows: White: 62.7%, Hispanic: 12.6%, Black: 12.7%, Asian American: 3.2%	% of Samba Reporting TV HH (unweighted) 3.0M Smart TV panel is as follows: White: 67% , Hispanic: 16%, Black: 11% , Asian American: 5%	% of TVSquared Reporting TV HH (unweighted) 18M Smart TV/STB panel is as follows: White: 71%, Hispanic: 13%, Black: 10%, Asian American: 4%	% of VideoAmp Reporting TV HH (unweighted) 39M Smart TV/STB panel is as follows: White/Other: 72%, Black: 11%, Hispanic: 13%, Asian American: 4%.

Impression Definition

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
Based on a verified play out of an ad for 1 second across all impressions.	An ad video is defined as a stream that was viewed for at least 3 seconds and that was classified as an ad (via an identifier in the tag). Linear: Comscore TV applies a 60-second threshold to linear television content viewership (Average Audience), and a 5-second threshold to linear television ads (including traditional, DDL, and addressable ad types).	Based on a verified play out of an ad for 6 seconds across all impressions.	Today, Nielsen National television crediting rules are based on the originator that won the minute. Crediting rules in the future for Nielsen One will provide a more refined understanding of the audience with exact commercial ratings. For Digital & CTV, Nielsen counts the impression when the tag fires and provides several options to apply qualifiers including MRC Viewability standard.	A linear TV ad impression is defined as a video stream that was displayed for 2 seconds and that was classified as an ad. For digital and CTV, Oracle uses the MRC definitions of an ad impression, including filtration for IVT.	An ad video is defined as a stream that was viewed for at least 5 seconds and that was classified as an ad. Their minimum threshold to create a viewing event is 3 seconds of continuous viewing.	An ad video is defined as a stream that was viewed for at least 1 second and that was classified as an ad.	An ad video is defined as a stream that was viewed for at least 1 second and that was classified as an ad. We allow for all the industry standard variations and custom impression definitions.

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp

Deduplication

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
605 de-duplicates reach at the household level. In 2022, 605 will implement a model that de-duplicates device level tunes, using the insights from devices that are present in multiple data providers (matched devices.)	Comscore approach to de-duplication is as follows: Data points are stitched together across platforms via a unique third-party matching process, informing Comscore of cross-device consumption. Comscore uses a panel comprised of TV households with Comscore measurement on Internet devices where exposure to both platforms are captured. The data from this single-source panel is used to estimate Digital-TV overlaps. Comscore utilizes the datasets from several such single source panels to create training sets for deduplication algorithms to estimate audiences. Similarly, Comscore has developed and patented a methodology to use behavioral matching across data sets to identify STBs that are connected to Smart TVs, and therefore to deduplicate across the platforms.	iSpot performs de-duplication across Linear, CTV, and Digital by using their proprietary Smart TV Identity spine that is connected to other digital devices such as tablets, PCs, laptops, and smartphones found within the same matched and id resolved household and share the same IP address, to evaluate the overlap based on ad exposure or content/program.	Nielsen performs deduplication across Linear, CTV and Digital by using their proprietary Nielsen ID System, which is inclusive of Nielsen ID Graph, panels, and big data assets.	Oracle's deduplication methodology adopts a bottom-up approach. Firstly, each marginal platform is projected to its US-wide reach and frequency. Secondly, using the Oracle Identity graph, Moat Reach can observe households that were exposed across different combinations of Linear, CTV and Digital exposure. That population suffers from similar missing data pattern as the marginal platforms and go through similar projections. As an example, knowing reach and frequency for Linear TV, Digital and their intersection mathematically constrains the entire Venn diagram (TV union Digital, TV only and Digital only).	The combination of Samba's deterministic multi-OEM TV ACR and deterministic and probabilistic multi-identifier Identity graph allows them to measure the interaction between TV/CTV/Digital channels, de-duplicating at a very granular level, and projecting viewership and ad exposure nationally.	TVSquared approach to de-duplication is as follows: when linear and streaming campaigns are running concurrently, they use IP address matching to map the impression datasets and detect any overlap in exposure along with the unique reach of each. This allows TVSquared to identify a percentage of households that have been served with streaming impressions, linear impressions and those that have been exposed to both.	VideoAmp approach to de-duplication is as follows: Ingest exposure data tied to the household or device IDs, create a total exposure file at the household level that includes a union of all exposures resolved to the VideoAmp ID; ingest digital identifiers across web, app, and streaming environments, mapped and anonymized to VideoAmp ID; converge the disparate datasets by connecting offline and online identifiers, forming the deduplicated VideoAmp ID from various data science techniques to that measures 100% of impressions, including directly matched and non-matched impressions.

Identity

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
605 works with a number of industry leading identity resolution partners that provide compliant, identity resolution, data transfer and crosswalk solutions that allow 605 to connect and transfer data between partners. We also have an existing relationship with OpenAP, who we view as an emerging leader in universal IDs. 605 also works directly with a number of major publishers to ingest exposure data from the source and finally, 605 offers a suite of pixel solutions for traditional and video media tracking.	Comscore leverages the data from their digital tagging of websites, videos, and mobile apps. Comscore works with a variety of identity providers including Experian, Live Ramp, and OpenId	iSpot's proprietary device graph is based on 19-million matched and id resolved Smart TVs enabled by Epsilon as the primary identity spine. iSpot can leverage their iSpot pixel or a direct integration with a publishers 1st party identity data to bring together a single source panel for de-duplication. iSpot bolsters the accuracy of their device graph by leveraging integrations with other industry standard device graphs.	Nielsen's proprietary device graph consists of first party information from Nielsen's quality panels and partner providers that results in a rich data set of over 1B unique devices, 300M people, and 210M emails. The Nielsen identity graph is strictly used by Nielsen for measurement purposes and allows for interoperability with other identity solutions/graphs, i.e. Experian.	Oracle's proprietary Identity Graph is built on a PII foundation of real people buying real things. With a data co-op of more than 1,500+ retailers with both mail order and e-commerce businesses, as well as CPG transaction data, our transaction data records more than $1B transactions per week and represents 99% of U.S. households.	Samba's proprietary Identity and Device graph covers 106M HH, which underpins their cross channel measurement and deduplication product. They have a very robust device to HH mapping incorporating 70 days of historic data for the highest accuracy mapping, and their identifiers are updated daily. They use a variety of data points and identifiers including MAIDs, HEMs (coming in Q1 2022), IPs, Experian LUIDs, Liveramp Ids, Neustar OneId, to help link signals to devices and to link devices into persons.	TVSquared has a multi-ID approach and works with a number of partners for Identity Resolution including Experian, Blockgraph, Adobe plus more. TVSquared is also continuing to test new identity resolution solutions, including UID 2.0 and OpenID, and traditionally employs a variety of approaches to refine household and device identification.	VideoAmp provides an interoperable identity solution across Live Ramp, Experian and TransUnion, OpenID and can match devices back to VideoAmp ID.

Ability to Deliver

Inventory Measured

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
605 reports unduplicated reach across linear, streaming and digital inventory sources. Their sources for Linear include OTA, STB, Satellite, and VOD. Their sources for streaming (CTV) and digital (tablet, mobile, pc) can be tracked and supported provide the client supply AAR files or access to receive these files through a crosswalk.	Comscore reports de-duplicated reach across linear, streaming, and digital inventory sources. Their sources for Linear include OTA, STB, Satellite. Their sources for streaming (CTV) and digital (tablet, mobile, pc) can be tracked via a census data collection process.	iSpot reports de-duplicated reach across linear, streaming and digital inventory sources. Their sources for Linear include OTA, STB, Satellite, and Broadband Only Homes. Their sources for streaming (CTV) and digital (tablet, mobile, pc) can be tracked and supported by their iSpot pixel as well as direct server to server integrations with publishers to receive the ad exposure and content audience delivery data.	Nielsen reports de-duplicated reach across linear, digital and VOD. The Nielsen ONE product line that will launch at the end of 2022 and serve as a cross-media first suite of products for ads and content, will address the following coverage gaps: 1. CTV grow beyond 75% coverage; 2. OOH include reach metric; 3. four screen de-duplication. Audio is on the roadmap for Nielsen One.	Oracle Moat measures unduplicated reach and frequency across the U.S. market for the following services: linear, OTA and VOD. In addition, digital and CTV is captured directly via Oracle Moat's measurement tags, and the deduplication is done by mapping exposures to Oracle's proprietary Identity Graph, covering 99% of U.S. households.	Samba reports reach, frequency, and unduplicated reach across Linear, streaming, and digital inventory sources. Their sources for Linear include OTA, VOD, STB, Satellite and Broadband Only Homes. Their sources for streaming (CTV) exposures via a combination of TV ACR, log integrations and pixels. Exposures for digital (tablet, mobile, pc) are captured via log integrations and pixels.	TVSquared reports reach, frequency and unduplicated reach across linear, streaming and digital inventory sources. Their sources for Linear include OTA, STB, Satellite, and Broadband Only Homes. Their sources for streaming (CTV) and digital (tablet, mobile, pc) can be tracked and supported by their TVSquared pixel as well as direct server to server integrations with publishers to receive the ad exposure delivery data.	VideoAmp reports de-duplicated reach, frequency, and unduplicated reach across linear, streaming, and digital inventory sources. Their sources for Linear include OTA, STB, Satellite, and Broadband Only Homes. Their sources for streaming (CTV) and digital (tablet, mobile, pc) is sourced directly from networks and digital platforms, they also support via VideoAmp pixel or via server-to-server integrations or cleanroom.

	605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
Inventory Gaps	605 currently does not measure OOH. 605 would also like to get streaming, digital data and OOH passed to them by programmers in an always on manner that could support content or specific ad campaigns. Streaming services, digital, VOD, and OTA are offered as cross platform managed service deliverables, provided the client supply the exposure files necessary for measurement.	Comscore currently does not measure OOH	iSpot currently does not measure OOH, upcoming in Q1 2022, they plan to have a significant advancement on our OOH capabilities. OTA viewership is not broken out in their dashboard reporting, this work is in progress to be delivered on their roadmap this year.	Nielsen's gap areas are in delivering more coverage and full deduplication. Nielsen's deduplication methodology for ads has released in Alpha via Nielsen ONE Ads. Nielsen's deduplication methodology and coverage will continue to evolve and expand, and Nielsen One Ads will officially launch at the end of 2022, followed by Nielsen ONE Content, Planning, and Analytics modules.	Oracle Moat is currently prioritizing the expansion of their linear and digital datasets before expanding into OOH measurement.	Samba currently excludes OTA HHS that do not own a Smart TV and OOH behavior. Samba does capture some OOH TV viewing on devices located outside of home, but currently excludes this data.	TVSquared is in the process of extending their methodology to cover OOH measurement.	VideoAmp currently does not measure OOH, they are working on a solution for mapping devices from their footprint partners to locations. OTA viewership is also an area of refinement they are working to enhance. Their measurement of VOD can be addressed best as they add additional MVPD partners to the measurement footprint.
Change to Geography Covered	National, Local capabilities delivered via managed service (on roadmap to offer as syndicated). 605 also has operations in the EU.	Local, National, Global	National, with Local on roadmap	Local, National, Global	National	National, Local, Global (24 Smart TV OEMs available in 7 markets)	Local, National, Global	Local (Top 50 TV markets individually weighted, 61 TV Markets overall), National
HHLD Universe	Yes, 605 transforms their panel of 22M Smart TV/STB households into one that represents 120M US TV homes.	Yes, Comscore transforms their panel of 40M STB households into one that represents 95M US TV homes.	Yes, iSpot transforms their panel of 51M Smart TVs/STB into one that represents 122.8M US TV homes.	Yes, Nielsen projects audiences to total US households, closely aligning the composition of its panel to the US Census. In the Fall 2022, Nielsen will bring big data into the methodology, enhancing its basis for projections from ~41k homes to approximately 30 million homes. Nielsen will employ a big data plus panel approach, continuing to deliver rich audience insights on total usage of TV, including streaming and connected device usage.	Yes, Oracle Moat Reach transforms their roughly 15MM Smart TV households into one that represents the US census.	Yes, Samba normalizes their panel of 3.0M Smart TV households to match the US Census and project results to represent 121M US TV homes for Linear	Yes, TVSquared transforms their panel of 18M Smart TV households into one that represents 120M+ US TV homes for Linear.	Yes, VideoAmp transforms their panel of 39M Smart TV/STB households into one that represents 120M+ US TV homes for Linear.
Persons Measurement	Yes, direct match of all 22M households to the Experian Identity Spine. These assigned persons level characteristics enable 605 to report viewing by households with member age ranges. For example, if a user chooses the attribute "Age 25-54", a home qualifies if at least one household member is age "25-54" as reported directly by the assigned Experian identity. 605 clients can also build a custom audience from the specific person's age appended to additional 1st party or 3rd party attributes	Yes, direct match of all 40M households to the Experian Identity Spine. These assigned persons level characteristics enables Comscore to report viewing by households with member age ranges. For example, if a user choose the attribute "Age 25-54", a home qualifies if at least one household member is age "25-54" as reported directly by the assigned Experian identity. Comscore clients can also build a custom audience from the specific person's age appended to 1st or 3rd party attributes.	Yes, direct match of all 51M Smart TVs/STB to the Epsilon Identity Spine. These assigned persons level characteristics enables iSpot to report viewing by households with member age ranges. For example, if a user choose the attribute "Age 25-54", a home qualifies if at least one household member is age "25-54" as reported directly by the assigned Epsilon identity. iSpot clients can also build a custom audience from the specific person's age appended to additional 1st party or 3rd party attributes. iSpot further calibrates its person level measurement with TVision data that gets used to apply weights to each HH based on the probability that each individual in the HH is in front of the TV (i.e. a home qualifies if one HH member is age "25-54" and that member has a certain probability of being in front of TV based on the TVision data).	Yes, today the persons data is directly collected and reported based on Nielsen's ~41K household panel. The statistical design of the TV panel is to closely align the composition with the US census on key factors including race, ethnicity, geography, household size, and presence of children. These assigned persons level characteristics enable Nielsen to report viewing at the household and persons level including individual age - e.g. Males 25-54. In September 2022, Nielsen will be integrating big data sets from RPD providers as well as ACR providers. For these big data sets, persons level data for age, gender and other characteristics will be based on advanced modeling techniques, informed by Nielsen's panel.	Yes, the Oracle Identity Graph has person-level connections for 220+ million US adults tied to their associated households. These assigned person level characteristics enable digital impressions to be measured by individual age or households with member age ranges. In addition, for their TV data from iSpot they leverage a panel partnership with TVision that provides person-level co-viewing data. This data is applied after the ACR impressions are mapped to households using the Oracle Identity Graph to further inform individual level reporting.	No, Samba audience measurement is based on HH composition matched to the Experian Identity Spine. These assigned persons level characteristics enables Samba to report viewing by households with member age ranges. For example, if a user choose the attribute "Age 25-54", a home qualifies if at least one household member is age "25-54" as reported directly by the assigned Experian identity. Samba clients can also build a custom audience from the specific person's age appended to additional 1st party or 3rd party attributes	No, TVSquared does not report at the person level.	Yes, direct match of all 39M households to VideoAmp IDs. These assigned persons level characteristics enable VideoAmp to report viewing by households with member age ranges. For example, if a user chooses the attribute "Age 25-54", a home qualifies if at least one household member is age "25-54" as reported directly by the VideoAmp ID. VideoAmp clients can also build a custom audience from the specific person's age appended to additional 1st party or 3rd party attributes. VideoAmp reporting at the persons level is in Alpha, with the expectation that counting people behind the screen is added to the syndicated suite in the first half of 2022.

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp

Demographic Reporting Granularity

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
Yes - Provided at Household level only, plans to measure and report on age/gender of viewing persons before end of 2022	Yes - provided at Household level (HHLDS with) with standard breaks across 18+, 18-49, 25-54 including breaks at any of these granularities (21+, 25+, 35+, 50+, 55+, 65+) and Age and Gender breakouts will be available in person level reporting in a beta phase by end of 2022.	Yes - Provided at Household level or Age and Gender standard breaks across P2+, P18+, P18-49, P25-54, including breaks at any of these age granularities (21+, 25+, 30+, 35+, 40+, 45+, 50+, 55+, 65+)	Yes, Provided at Household level or Age and Gender standard breaks. Nielsen reports on ages 2+ at the individual and building block level. For Digital Reporting, Nielsen reports on ages 13+ at the building block level.	Yes - Provided at Household level or with Age and Gender standard breaks for any age bracket increments (starting 18+)	Yes -Provided at household level and standard breaks at any of the following age granularities (0-9, 10-19, 20-24, 25-34, 35-44, 55-64, 65-74, 75-100)	Yes - Provided at Household level only	Yes - Provided at Household level and standard breaks at any of these age granularities (2+, 18-24, 25-34, 35-44, 45-49, 50-54, 55-64, 65-74, 75-84, 85+)

Co-viewing

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
No, 605 plans to provide person level reporting based on a combination of models derived from panels accessed through partnerships, statistical inference, surveys, and the person-level data from the Experian file.	Yes, Comscore connects their Experian assigned household demographics to a statistical inference process. This starts with measurement of household level tuning, obtained through STB data capturing What, When, and How Much was watched. To solve for Who, Comscore uses a statistical decoder to extract signals present in household information combined with known household rosters and Bayesian statistics.	Yes, iSpot connects their Epsilon assigned household level demographics to the data provided by TVision in order to take the measurement down to the person level. TVision directly observes the people in the home who are watching TV in the room. Their data captures co-viewing for true person level measurement. The TVision data set is not matched deterministically to is Pot, but instead provides iSpot with a distribution of TV watching patterns by age and gender for any given content. iSpot overlays these distributions to their existing household level data sets to report persons level demographics at scale across Linear & CTV.	Yes, Nielsen has direct measurement of person level viewing based on a subset of their panel having people meter devices installed in the homes. Nielsen determines the age and gender of each person in the household, including any long term visitors. Nielsen also coaches the home to record the age and gender of any short term visitors. Where set meter or big data are used, Nielsen utilizes a viewer assignment model to determine the persons that were in front of the TV set at the time of viewing.	Yes, using a panel partnership with Vision that provides person-level linear TV co-viewing data, Moat Reach estimates campaign level attention and refines estimates of people who saw an impression and the demographics of those people.	No, Samba does not estimate persons behind the TV Screen	No, TVSquared does not estimate persons behind the TV Screen	In Development, VideoAmp personification involves deployment and integration of the following assets: Observed tuning across sets for all households in the VideoAmp footprint; HH rosters including demographic composition; A subset of the footprint of HH which are comprised of only one person; and a panel of households with persons level viewing to serve as a training set. A model is then trained to predict the probability of individual viewership of an event given HH level viewing and composition of that household. TVision is currently one of the training sets.

Device Breakout

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
No, 605 does not provide reporting break outs by platform	Yes, Comscore provides aggregate device level reporting by platform.	Yes, iSpot reporting breaks down the ad exposure and content delivery by platform (TV, PC, Mobile(Smartphone/Tablet))	Yes, Nielsen provides audience metrics for all operable TV sets within a home and any devices connected to those sets including Internet Connected Devices and Video Game Consoles.	Yes, Oracle Moat Reach reporting breaks down the ad exposure by platform except CTV	Yes, Samba provides reporting breaks down the ad exposure by platform	Yes, TVSquared provides attribution by device type (e.g. PC, mobile)	Yes, VideoAmp normalizes devices across their various integrations to provide ad measurement breakout by devices (STB Box, CTV, Desktop Mobile, Mobile Phone, Tablet, Unknown)

Advanced Audience

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
605 enables 1st and 3rd party segments to be onboarded to the 605 platform, enabling impression, reach and conversion measurement against specific audience segments. 605 evaluates the match rate, characteristics of the match, and scales the data, through weights or nearest neighbor, to the proper universes. 605 can receive 1st party data directly from their clients linked to IDs from Experian or Live Ramp. 605 plans to integrate Polk, Catalina, and MRI within 2022.	Comscore enables first and third party data, (1st party subject to use case) enabling clients to pinpoint audiences you want to reach using TV consumption habits, buying patterns, auto ownership and more. Comscore advanced audiences are matched to TV households via blind matching process of MVPD subscriber files facilitated by Experian.	iSpot enables 1st and 3rd party segments to be fed into the iSpot platform, enabling impression, reach and conversion measurement against specific audience segments. iSpot can receive 1st party data directly from their clients linked to IDs from Neustar, Epsilon, Live Ramp, Experian, TransUnion, Oracle, and Adobe. iSpot licenses IRI, Polk, Fandango, and PlaceIQ	Nielsen enables 1st and 3rd party segments to be fed into the Nielsen platform, delivering rich advanced audience information. Nielsen can receive 1st party data directly from their clients linked to, but not limited to, TransUnion, Experian, Live Ramp, Epsilon, and Neustar.	Oracle Moat Reach supports over 2000 Oracle syndicated audiences (purchase-based, lifestyle, etc.) as well as the ability to OnRamp any client 1st party audiences. Oracle Moat Reach maps deduplicated reach to the households and people within their Identity Graph, and audience membership maps to these same people and households. Oracle Moat Reach displays reach and frequency numbers within the selected audiences for any combination of campaigns, media partners, and media types.	Samba supports investing and measuring audiences that fall into 1st party and 3rd party defined segments. Samba supports clients syndicating their audience to Samba through a variety of match keys including hashed emails, maids, IP/timestamps, or leading 3rd party matching solutions (Experian, Neustar, Live ramp)	TVSquared supports 1st or 3rd party audiences. This is usually integrated directly with an advertiser, agency, publisher, platform or 3rd party ad tech partners.	VideoAmp supports all advanced audiences. This includes any arbitrary 1st or 3rd party audiences. This is integrated usually directly with an advertiser, agency, publisher, platform or 3rd party ad tech partners.

	605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp

Speed

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
All 605-viewership data is processed nightly and is available for reporting in the product after three days. Syndicated ad source data is refreshed on a five-day lag. As part of the 605 EXCHAN6E roadmap, these timelines will be shortened to facilitate more real-time transactions between NBCU and the buy-side. 605 is in negotiations to license a large, nationally representative dataset which will allow next day delivery of reporting.	All reporting and analytics final data for Comscore TV is summarized on Day 11 post airdate. Preliminary data is available typically a few days post air. At day 3, data is estimated to be 96% complete and at Day 7 is estimated to be 99% complete. Reporting on cross platform campaigns is updated on a daily basis with Digital/CTV reporting finalized within 72 hours, and TV is finalized on the same schedule as Comscore TV	All reporting and analytics in dashboards and APIs have less than a 24-hour lag time. Linear and estimated spend within an hour. Program ratings are delivered next day and unified ad measurement deliered within 24-48 hours after ad airing.	All reporting in analytic applications, data files, and APIs range from real-time to weekly depending on the measurement product and specific campaign details.	All reporting and analytics in dashboards have a next day delivery for Digital and CTV data, and Linear data is on a 2-3 day delay.	All reporting and analytics in dashboards are delivered daily with a 3-5 day lag to ensure completeness of brands, airings, and tagging/assignment of new ads. Digital data via the Samba pixel is current up until the previous day.	All reporting and analytics in dashboards are delivered next day in the platform. TVSquared also has a range of exporting capabilities that can be done in real time.	All reporting and analytics in dashboards for cross platform metrics, the latency of reporting can range between 3 to 9 days. VideoAmp produces next day measurement for non-final linear metrics and final digital metrics.

Market Presence

Length of Time In Market, Company Size, & Ownership Status

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
Founded in 2016, 605 is a privately held company with 150 employees and today their customer roster includes TV network groups, MVPDs, brands, and agencies. 605 measures linear, ctv, and digital video, with digital and addressable media channels delivered on a managed service basis. 605 offers products across planning, measurement and attribution. 605's core client base leans heavily toward the sell side with 80% of their revenues attributable to measurement and attribution services provided to programmers and MVPDs.	Founded in 1999, Comscore is a publicly held company with 1,350 employees and today has thousands of clients in all parts of media and advertising. Comscore measures linear, ctv, digital, social media, and theatrical viewership to provide deduplicated measurement. Comscore is a trusted partner for planning, transacting and evaluating media with products across ratings and planning, analytics and optimization, and movies reporting and analytics. Comscore announced their Comscore Campaign Ratings which is the first cross platform product offering in 2018.	Founded in 2012, iSpot is a privately held company with 300 employees and today has over 400 buy and sell side clients. iSpot measures linear, ctv, and digital video in a unified manner to provide accurate and deterministic cross platform analysis, including reach and frequency, as well as incremental reach over linear. iSpot has a diverse product portfolio that spans from creative assessment to attention analytics to unified measurement, and conversion analytics. iSpot's core client base is made up of approximately 50% of Advertisers who spend over $100M annually on US TV advertising.	Founded in 1923, Nielsen is a publicly held company operating around the world in more than 55 countries. Nielsen provides global leading audience measurement, planning, optimization, and content metadata solutions that put the audience at the heart of the media industry. Nielsen measures linear, ctv, and digital video providing de-duplicated reach and frequency measurement for ads and content. Nielsen has also embarked on a transformation of its audience measurement suite of solutions to deliver Nielsen ONE - a cross-media first product suite that will launch at the end of 2022. Nielsen has agreements with leading content owners across linear and digital platforms as well as buyers, including agencies and advertisers.	Founded in 1977, and participating in Cross Media Measurement since early 2020, Oracle is a publicly held company with 133,000 employees. Oracle Moat is a set of measurement products that live within the Oracle Advertising and Customer Experience (CX) solution line. Oracle Moat's customers includes hundreds of top brands, agencies and publishers. Oracle Moat provides end-to-end campaign measurement from impression validation to sales lift with three key products: Oracle Moat Analytics, Oracle Moat Reach, and Oracle Moat Outcomes. Oracle Moat Reach offers cross-platform audience measurement that delivers a deduplicated view of person and household reach and frequency across linear TV, connected TV, digital online video and display.	Founded in 2008, Samba is a privately held company with 294 employees. Samba works with top marketing, publishing, and agency clients across Linear, CTV, and Digital channels. Samba's measurement products and services includes a view of HH based audience aggregate and deduplicated impression, reach and frequency by channel, by individual TV, as well as CTV and Digital publisher. Samba's data footprint is the most diverse in the industry, drawn from 10 Smart TV manufacturers in the US.	Founded in 2012, TVSquared is a privately held company with 150+ employees. TVSquared works with over 6,000 advertisers across 75+ countries and their client base spans both the buy- and sell-sides, delivering real-time, identity-enabled, converged TV measurement and outcomes. TVSquared's global cross-platform audience measurement includes de-duplicated reach and frequency measurement across every form of TV advertising. TVSquared has the breadth and scale to deliver always-on measurement and outcomes for advertisers of all sizes and categories – from local/regional brands and high-growth DTCs, to nationally and globally recognized companies.	Founded in 2014, VideoAmp is a privately held company with 350+ employees. VideoAmp works with hundreds of brands, agency media holding companies and the leading TV companies, creating a more data driven ecosystem. Their platform includes planning, measurement, optimization, workflow automation, and currency capabilities. VideoAmp's cross-platform audience measurement includes de-duplicated reach and frequency measurement on age/gender audience demographics or on any advanced 1st or 3rd party audience. VideoAmp also provides Multi-Touch Attribution and Lift measurement across traditional TV, streaming video, and digital media against client's desired business outcomes.

Clients Base/Revenue Sources

605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
605 announced the launch of 605 EXCHAN6E, at the end of 2021 to offer an alternative currency to underpin advertising transactions. 605 works across the major TV network groups, MVPDs, brands and agencies. NBCU has received the full list of these partners under MNDA.	Comscore has been selling national and local services for 12 years and cross platform measurement for 4 years. Comscore has 3,000 clients across local stations, national networks, station groups, advertising and media agencies, and across 200 regional and local agencies, 62 percent are exclusively using Comscore's local market data for all of their advertising campaigns and buys.	iSpot has been selling cross platform measurement to the 400 buy and sell side clients for 3+ years. iSpot has 100 sell side customers inclusive of networks and digital publishers, and 300 buy side direct advertiser clients, with agencies account for 40% of those active users.	Nielsen has agreements with leading content owners across linear and digital platforms as well as buyers, including agencies and advertisers. Nielsen data underpins the media planning/buying process for national and local advertising within video content whether on TV, CTV or digital platforms. Nielsen also measures audio.	Oracle Moat's core client base is made up hundreds of the top brands, agencies, and publishers.	Samba's core client base is made up of top marketing, publishing, and agency clients.	TVSquared works across the entire TV ecosystem, delivering measurement and outcomes to the buy- and sell-sides, representing over 6,000 advertisers in North America, Europe, APAC and LATAM. TVSquared's diverse client base is made up of 40% sell-side, including broadcast and MVPDs, streaming publishers and AdTech, inclusive of DSPs and SSPs; and 60% buy-side, covering local, national and global advertisers through brand direct or agency relationships.	VideoAmp does not disclose financial statements or otherwise provide indicators on their revenue as they are a privately held organization.

	605	Comscore	iSpot TV	Nielsen	Oracle	Samba	TVSquared	VideoAmp
MRC Accreditation								
	Not Commenced	Seeking Accreditation of Comscore TV; MRC Accredited Comscore Media Metrix and VCE	MRC Accreditation pending for ad occurrence detection (http://www.mediaratingcouncil.org/Accredited%20Services.htm). Further accreditations to follow quickly.	Accreditation currently suspended; actively working on re-accreditation	Building in compliance with MRC Cross Platform Guidelines; MRC Accredited: In-View/IVT Impression in Moat Reach	Samba recognizes the importance, and plans in the near future to seek accreditation on metrics which are aligned with Brand, Agency and Publisher partners.	Seeking Accreditation	Not Commenced
Additional Services								
Audience Verification								
	No	Yes, through Comscore Validated Campaign Essentials measuring sophisticated ad fraud detection	Yes, through iSpot Ace Metrix to calculate completion rates and emotional resonance score.	Yes, for viewability of ads, will have the capabilities to meet MRC Cross Media viewability standards.	Yes, through Oracle Moat Analytics to provide verification and attention measurement	No	No	No
Brand Measurement								
	Yes, 605 is able to survey households within its viewership panel through their survey partners to create brand metrics	Yes, Comscore partners with Hive for their branded content offering and also has their own cross platform brand survey lift offering	Yes, through iSpot Ace Metrix to provide select in house brand tracking, and partnerships with leading brand research panels (Dynata, Upwave, and Lucid)	Yes, Total Media Resonance, Brand Effect Expanded View, Custom Brand Effect.	No	Yes, Samba partners with 3rd party partners to enable brand lift, Lucid most common partner.	Yes, TVSquared calculates brand lift metrics	No, VideoAmp has worked with several survey companies and has partnerships if clients desire to measure this through them.
Incrementality Measurement								
	Yes, leveraging 605 IMP4CT	Yes, Comscore partners with Data+Math for outcome based measurements	Yes, leveraging iSpot TV Conversion Analytics	Yes, Nielsen Market Lift & Nielsen Buyer Lift	Yes, leveraging Oracle Moat Outcomes	Yes, Samba offers causal TV measurement, tune-in measurement, and outcomes in online conversions and foot traffic.	Yes, TVSquared provides app usage, website visits lift metrics and location	Yes, leveraging their VideoAmp incrementality Lift Measurement methodology
Business Outcome Guarantee								
	Yes, leveraging 605 IMP4CT can forecast outcome predictions to enable outcome based guarantees in the marketplace.	Yes, Comscore partners with Data+Math for outcome based measurements	Yes, leveraging iSpot TV Conversion Analytics to guarantee brand specific business outcomes across web/app and location based KPIs	No	No	Yes, Samba is testing an incremental reach guarantee product currently. Samba can support a Publisher's business outcome guarantee with their incrementality or outcome measurement products.	Yes, TVSquared outputs are used for BOG	No, VideoAmp has plans to support this use case but current timing, approach and methodology is not defined
MTA								
	Yes, offers a multi touch fractional attribution solution through managed services	No	Yes, as input to any MTA partner	Yes, Nielsen Multi Touch Attribution	No	Yes, Samba has built a number of MTA approaches including data driven fractional attribution	Yes; for its own internal MTA, TVSquared employs a time-decay attribution model. In addition, TVSquared's data are also regularly fed into advertisers' own MTA solutions	Yes, leveraging an acquisition VideoAmp made of Conversion Logic
MMM								
	Yes, data can be exported and used for MMM should clients express the need	Yes, Comscore has data relationships where their media data is used in MMM solutions.	Yes, impressions, airings, spend data can be licensed to any MMM Provider	Yes, Nielsen Marketing Mix Modeling	No	No	Yes, TVSquared's data are regularly fed into advertisers' own MMM solutions	Yes, leveraging an acquisition VideoAmp made of Conversion Logic

Cross-Platform Ad Currency Details by Measurement Company

The following section includes additional information provided by each of the measurement companies in the Audience Measurement category, in their own words, in response to a detailed questionnaire about their cross-platform currency offering.

We appreciate the transparency and collaboration of these measurement companies, and their willingness to share this in-depth information with the industry.

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Company Overview

605 is an independent TV viewership, measurement, and attribution company. We have one of the largest and richest nationally representative multi-source viewership datasets in the industry, providing the scale needed for innovative linear TV and cross-platform solutions that quantify media investment strategies. We recently celebrated our five-year anniversary and have grown to have over 150 employees in the US and EU. While we primarily operate in our New York City headquarters, we have offices in Pasadena, Long Island, and Dublin, Ireland. In 2021, 605's double-digit million-dollar revenue was up 75% year-on-year with the financial plan for 2022 already showing almost 100% in additional revenue increases. As our business continues to grow, we aim to provide solutions for all industries, serving both buy- and sell-side with transparent data and processes.

In December 2021, 605 announced the launch of 605 EXCHAN6E, a new, independent media trading currency that will offer an alternative to Nielsen and is designed to underpin advertising transactions between partners on the buy-side and the sell-side. Our products also include 605 DR1VE, 605 PLATF0RM, and 605 IMP4CT, our planning, measurement, and attribution products. These are self-service and offer powerful insights across linear TV, DVR, and VOD. The systems are also capable of ingesting digital and addressable media channels with additional support available on a managed service basis as needed.

Our methodology is built on modern architecture that enables 100% deterministic matching rights for advanced insights. At a high level, we receive household-level TV viewership data, ad source data, and programming data on a nightly basis. Utilizing the 22M HH footprint along with our ID resolution partners we are able to deterministically match exposure data across channels for measurement and attribution. We are then able to attribute performance to cross-channel screens and content. 605 can deterministically measure linear viewing HH's and then, utilizing our proprietary weighting methodology, we are able to project viewership to be nationally representative. 605 is dedicated to independence, scientific rigor, and results across all of our deliverables.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

605 currently provides currency-grade, advanced audience measurement for content and campaigns, including cross-platform measurement when the digital video impressions are provided to us. In 2022, digital impressions and cross-platform incrementality will be presented in the product UI and API of an evolved 605 PLATF0RM operating under the 605 EXCHAN6E product name. We are accelerating our delivery-to-market of the 605 EXCHAN6E features through a significant partnership developed with Deloitte Digital (announced in January 2022). By the end of 2022, 605 will provide the same currency-grade measurement for content and campaigns with traditional persons demography.

Cross-platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services—linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

605 does offer cross-platform solutions that provide holistic campaign measurement across delivery platforms. Specifically, the 605 cross-platform solution measures overall and unduplicated reach and frequency for all individual and overlapping platforms. Please note that cross-platform solutions are offered as managed service only (i.e., not currently through our SaaS platforms) but are on the roadmap for delivery within 605 EXCHAN6E in 2022. Streaming, digital, and OOH platforms can be included in the analysis when clients share these files with 605. Today, OTA is derived from ACR sources and weighted to the OTA UE. In 2022, additional OTA resources from surveys and calibration panels will be integrated. All data gets passed through privacy compliant cross walks before entering the 605 environments.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

The 2022-2023 605 EXCHAN6E roadmap will see these features productized and offered via the core 605 EXCHAN6E platform. The primary ask would be to get the streaming, digital data, and OOH passed to 605 in an always-on manner that could support content or specific ad campaigns. Among other items, 605 would like to discuss opportunities to leverage OpenAP IDs along with future ATSC 3.0 data and data from NBCU and existing NBCU partners including Conviva, Freewheel, and others.

In your view, what differentiates your TV measurement offering from other competing measurement services?

605 has significant scale with 22M US HHs in our viewership dataset, and we are unique in that our multi-source viewership data set is matchable, deterministic, and reportable at the household level. We leverage census-based methods but always remain privacy compliant. With 100% matching rights and an architecture that permits any definition of an advanced audience on-demand, 605 can support outcome-based ratings and guarantees with a technology stack that is mature, scaled, widely deployed and which our team believe is the fastest and most performant in the market. Notably, 605 can provide security of supply to NBCU for currency given the long-term nature of our data licensing agreements. 605 intends to remain a neutral, unconflicted counterparty to the buy-side and sell-side and will NEVER take a position in, or trade or arbitrage, premium video or other inventory. 605 is led by a management team drawn from the media, entertainment, data, and analytics industry and are measurement domain experts with a grounding in deep data science. Additionally, 605 will fully support the programming community's request around industry collaboration and innovative partnerships to accelerate time to market for the 605 EXCHAN6E product.

What % of your annual revenue is measurement? (If less than 100%, please provide a brief description of other key revenue drivers.)

80% of our revenue is attributable to measurement and attribution services. The balance relates to provision of aggregated analytics and audience segments.

Who are your measurement clients and what % of your measurement business do they represent?

We work with a list of clients and many are under NDA. The customer roster we can share includes TV network groups,[1] MVPDs,[2] brands,[3] and agencies. Specifically focused on offline, we have partnered with retail clients (e.g., Walmart) to provide cross-screen measurement & attribution (for linear & CTV). The majority of 605's revenue is attributable to programmers and MVPDs.

Universe Assumptions

How many TV HHs do you collect data from?

605 has developed a measurement solution that is built on 22 million households from set-top-box and smart TV sources that provide clients with insights into planning, measurement, and attribution of media campaigns.

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

The 605 TV UE is 120 million households, based on information from the US Census, Experian households and the LRG survey of TV access (which will be replaced with factors from the ARF DASH survey in 2022).

Do you use weighting or sample balancing?

605 projects all results up to the national US household viewership footprint using both sample balancing and projection weighting.

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[1] Already disclosed to NBCU under MNDA
[2] Ibid.
[3] Ibid.

If yes, please briefly describe your methodology.

Household weights balance, adjust, and project household television viewing to correct for biases in the raw data sample and ensure that published metrics mirror the overall population as closely as possible. The result is data that resembles the demographic profile and viewing of the population as a whole.

605 uses raking weighting to calculate a weight for every qualified home. These weights aim to represent a similar segment of unmeasured households among US TV households derived from selected Experian attributes. The raking method of generating weights iteratively adjusts weights until the marginal distributions of the weighted measured population match the total target population. The raking process adjusts one variable, then another, continuing until all variables align with their respective distribution within the universe population.

An assessment of demographics and viewing related characteristics revealed the importance of a key set of variables in predicting a home's quantity of viewing by program genre. Consequently, these are the variables that raking utilizes.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

While the industry is yet to align on a unified suite of compliant solutions, 605 has a number of initiatives in place to ensure that data can be linked to 605's viewership datasets for measurement and analysis. 605 works with many industry-leading identity resolution partners that provide compliant identity resolution, data transfer, and crosswalk solutions that allow 605 to connect and transfer data between partners. We also have an existing relationship with OpenAP, who we view as an emerging leader in universal IDs. 605 also works directly with several major publishers to ingest exposure data from the source, and finally, 605 offers a suite of pixel solutions for traditional and video media tracking.

Which identity providers do you work with?

Experian, LiveRamp, and OpenAP.

How do you model missing device IDs and IP addresses?

605 models missing data from the relationships and distributions of the overlapping data sources and by weighting to the total known impressions. Where appropriate, 605 also uses nearest neighbor/synthetic household models.

Do you have the ability to bring in first-party data?

Yes, 605 leverages relationships with our identity partners for the purposes of onboarding first-party data. The 605 EXCHAN6E roadmap includes the deployment of a scalable clean room environment with edge of network data science and the ability to facilitate fast onboarding and offboarding of data.

Reporting Details

Granularity. At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

While 605's core unit of measurement in the system is based on second-by-second activity, our products report viewing by individual quarter hour, program telecast, and ad occurrence, as well as aggregations of these. More granular breakouts will fall into managed service deliverables.

Speed. How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

All 605-viewership data is processed nightly and is available for reporting in the product after three days. Syndicated ad source data is refreshed on a five-day lag. As part of the 605 EXCHAN6E roadmap, these timelines will be shortened to facilitate more real-time transactions between NBCU and the buy-side. 605 is in negotiations to license a large, nationally representative dataset which will allow next day delivery of reporting.

We offer clients access to always-on, nationally representative linear TV measurement and attribution products, available through a license.

All cross-platform studies are offered as managed service deliverables and will be productized into the 605 EXCHAN6E roadmap. 605 has the ability to include digital, CTV, and OLV data into cross-platform reporting when supplied directly by clients, and we work with device graph partners for digital tracking through pixels for website activity-based measurement and attribution studies.

How are your reporting details delivered?

605 is flexible and can provide reporting via a dashboard, S3, Excel exports, and via APIs for 605 EXCHAN6E to integrate directly with the infrastructure and existing deployed systems on the buy-side and sell-side.

What is your definition of an impression or ad exposure?

The quantity of times that a household is exposed to an ad, expressed in thousands. Since 605 has data at the second-by-second level, this counts as any exposure. The exposure threshold can be calibrated to account for the length of the full ad, or other client specifications.

What is your definition of a view or viewing event?

Since 605 has data at the second-by-second level, this counts as any exposure to a telecast. The exposure threshold can be calibrated by the user in the UI.

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA, and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

605 measures and reports viewing of programming content for linear and VOD, with some streaming, OTA, and CTV representation from Inscape Smart TV devices rolled into linear. Additionally, streaming services, digital, VOD and OOH are offered as cross-platform managed services deliverables - provided that the client will supply exposure files or access to receive these files through a crosswalk. As part of the 605 EXCHAN6E roadmap, we see the ability to close gaps through collaboration and planned partnerships currently under negotiation.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA, and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

605 reports linear TV, inclusive of OTA, ad content derived from ad schedules supplied by Hive or directly from clients. Streaming services, digital, VOD, and OOH are offered as cross-platform managed services deliverables, provided that the client will supply AAR files or access to receive these files through a crosswalk. As part of the 605 EXCHAN6E roadmap, we see the ability to close gaps through collaboration and planned partnerships currently under negotiation.

How do you identify an ad? If you use a third-party, what is your source?

605 leverages Hive for ad occurrence data.

Do you provide household-level reporting?

Yes, we report aggregated households.

Do you provide device-level reporting?

While we currently do not provide device-level reporting, there are no methodological roadblocks or oppositions that would limit our ability to provide aggregated device-level reporting for specific client requests.

Do you provide person-level reporting?

While 605 currently does not provide person-level reporting, we plan on making this available towards the end of 2022 via a "calibration panel" available within 605 EXCHAN6E.

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

The person-level reporting will be based on a combination of models derived from panels accessed through partnerships, statistical inference, surveys, and the person-level data from the Experian.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

605 plans to include age of the viewing audience before the end of 2022. Currently, we report viewing by households with member age ranges. For example, if a user chooses the attribute "age 25-34," a home qualifies if at least one household member is age 25-34. Clients also can build a custom audience from the specific person's age. Gender plus age ranges is also provided, for example, A18-49, M25-54, W18-21, and so on.

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned.

605 plans to measure and report on the gender of the viewing persons before the end of 2022. Currently, we do report viewing by households with member gender. For example, if a user chooses the attribute "female," a home qualifies if at least one household member is female.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned.

Yes, it is provided via Experian and based on a comprehensive predictive name analysis process that identifies the ethnicity of the household.

Do you report any other demographics beyond age, gender, race, and ethnicity, and if so, which ones and how they are assigned?

There are many household attributes and characteristics available (e.g., HH income, education, marital status, etc.) from Experian and other sources which are reportable by 605. A list is available on request.

Do you measure advanced audiences (targeted audiences)?

605 can provide measurement and attribution metrics for advanced audience segments provided by the client, for audience segments built in-house, and for specified demographic segments. 605 will be announcing the availability of 605 advanced audiences delivered via 605 EXCHAN6E imminently. 605 advanced audiences are available for linear television and allow brands to identify content and networks that are more likely to be viewed by their target audience. Advanced audiences delivered through 605 EXCHAN6E will be highly customizable, leveraging 605's existing partnerships with key data partners across all advertiser categories, including Catalina, PlaceIQ, Polk, and others. As the industry shifts away from traditional demographic guarantees, we expect 605 advanced audiences will allow advertisers to transact television media on any audience, using first- or third-party data.

If so, what is your methodology for identifying and measuring them (include data sources)?

605 PLATF0RM and IMP4CT products allow users to measure and attribute campaigns against a strategic target (first- or third-party data). The product has a set of third-party data loaded in for use including Experian, PlaceIQ, Polk, Catalina, and retailer purchase data with other sources on the roadmap for 2022. There is also a feature that allows for the load of other first- and/or third-party data that can be used in your instance, as long as said data can be passed and matched via a third-party privacy compliant crosswalk (such as Experian or LiveRamp) or onboarded within clean room environments.

Do you measure using advertisers' first-party data?

Yes, 605 can provide measurement and/or attribution studies utilizing an advertiser's first-party data.

If so, what is your methodology for onboarding?

605 is partner-agnostic and can work with any partner dataset (first- and/or third-party) that is able to be matched through an ID resolution and data safe haven provider or within a selected clean room environment. We utilize well-established ETL processes for the onboarding of all data. 605 evaluates the match rate, characteristics of the match, and scales the data through weights or nearest neighbor to the proper universes.

Other Noteworthy Items

Do you provide audience verification services?

605 is open to client-suggested relationships around audience verification initiatives; however, 605 does not provide audience verification services at this time, as our clients bring their own digital exposure data.

Do you provide brand measurement services?

Utilizing 605's full matching rights to the viewership data, 605 is able to survey HH's within its viewership panel through our survey partners and directly tie survey responses back to the viewership panel for measurement and attribution.

Do you provide incrementality measurement services?

Yes, for attribution 605 uses a matched control methodology, identifying households with similar viewing patterns and demographics to ensure accurate (causal attribution) lift metrics. Incrementality can be a reference to additional target audience reach across channels or platforms or it can be a reference to sales conversion, such as incremental sales due to ad exposures (lift or causal attribution). 605 does both.

Do you provide business outcome guarantee services?

605 can forecast outcome predictions, currently as a managed service, to help enable outcome-based guarantees in the marketplace. Our always-on attribution insights through 605 IMP4CT can provide clients with the ability to research historical outcomes and benchmarks, as well as the ability to track campaign outcomes in flight.

Do you provide multi-touch attribution or marketing mix modeling services?

605 currently offers a multi-touch fractional attribution solution through managed services. We will have the digital impressions integrated into the self-service product in 2022. Specifically, the 605 cross-platform solution measures overall and unduplicated reach, frequency, and conversion metrics for all individual and overlapping platforms utilizing a causal multi-touch attribution solution.

We do not build and conduct market mix modeling. However, 605 data can be exported and used for MMM should the client express the need.

What other media buying/selling solutions do you provide? Please describe.

605 PLATFORM: Measurement (As currency delivery mechanism within 605 EXCHAN6E)
Using 605 PLATF0RM to measure ads, clients are able to report out on Reach, Frequency, Impressions, Viewing Seconds, Average Audience, Reach %, Rating, Spot Count, Duration Minutes, Duration Seconds, and Completion Rate of National Linear TV ads across both cable and broadcast. Using 605 PLATF0RM to measure content, clients can report out on Reach, Viewing Seconds, Average Audience, Rating, Reach %, Telecast Count, Duration Minutes, and Duration Seconds of National Linear TV ads across both cable and broadcast.

605 IMP4CT: Attribution
We also have 605 IMP4CT, which provides clients with access to always-on causal attribution for Tune-In and Outcomes-based reporting. With Tune-In reporting, clients can understand the effect of ad promo on tune-in behavior and correlate exposure directly to a series, episode, or an entire season. With Outcomes clients can correlate ad exposure to desired outcomes via 605 data feed. These outcomes include, but are not limited to, visits, sales, etc. Metrics included in these reports consist of % lift, incremental conversions, total visits, outcomes-based ratings, etc. The outputs of IMP4CT can be presented in an intuitive, highly visual reporting manner and all data and visuals can be exported for use via Excel or PDF. 605 also creates "Persuadable Targets" that commonly outperform traditional target audience definitions.

605 DR1VE: Planning and Optimization
605 DR1VE is a planning and optimization product for local linear ad inventory which takes a real-time inventory availability and pricing picture and allows campaigns to be planned, priced, and booked through a tablet-based UI. 605 will provide a planning and optimization tool in 2022.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

605 has used the MRC guidelines and best practices in the development of our products and we will be guided by the community's requirements in respect of MRC accreditation. Given the pace of innovation and the evolution of the industry, 605 accreditation would be some time in the future.

Comscore
Company Overview

Comscore is a trusted partner for planning, transacting, and evaluating media across platforms. With the most comprehensive data assets across digital, linear TV, over-the-top (OTT), social media, and theatrical viewership, we are a powerful third-party source for reliable deduplicated measurement of cross-platform audiences. Today, our products are platform-specific (TV, digital, OTT, social) with our first cross-platform product in the market today being Comscore Campaign Ratings.

Comscore is a global measurement company, founded in 1999. We currently employ approximately 1,350 employees. Comscore has thousands of clients in all parts of the media and advertising ecosystem, ranging from Fortune 100 clients to small independent merchants. Total revenue for calendar 2020, which is the most recent complete year for which Comscore has reported earnings publicly, was $356 million.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

We currently provide:

Census-Scale Data - Comscore's massive data footprint powers a robust cross-platform audience view across linear, digital, social, and OTT/CTV platforms. The stability requirements of a currency strongly favor a measurement solution based on large-scale transactional data, with recruited, non-probability panels adding context and other additional insights.

Future-Focused Technology - Modern media measurement must be built by a company grounded in technology and big data management. Comscore's best-in-class tech stack and integrated data infrastructure drive faster innovation and delivery of products, including easier collaboration and data sharing with clients and partners.

Marketplace Acceptance - Comscore has widely established industry adoption from both sides of the table. Today, more than 3,000 global customers partner with Comscore, including the world's 10 largest advertising and media agencies, more than 1,000 local stations, 157 national networks, 50 station groups, and every major movie studio. We also pioneered digital video measurement as the original online video solution, Video Metrix.

Experienced and Objective - To remain an impartial, third-party measurement currency, one cannot provide both the measurement and transact upon media dollars. Comscore is the proven currency of choice with over ten years of cross-platform expertise and without any conflict of interest of selling media.

Unified Datasets and Methodology - 21st century data science driven methodology interoperable with other industry frameworks such as ANA, WFA, VAB and OpenAP. By using tens of millions of tuning and exposure events from census-scale data footprint, Comscore's scientific methodologies provide critical improvements over a limited panel-centric approach.

Cross-platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services—linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

Comscore Campaign Ratings (CCR) is designed to provide in-flight measurement of cross-platform campaign delivery across TV, over-the-top (OTT), desktop, and mobile. Leveraging Comscore's expansive census network and return-path datasets, we calculate the overlap between devices at the person-level to provide deduplicated measurement for cross-platform solutions. These data points are stitched together across platforms via a unique third-party matching process, informing us of cross-device consumption. For example, to understand the duplication between TV and digital, Comscore uses a panel comprised of TV households with Comscore measurement on internet devices where exposure to both platforms is captured. The data from this single-source panel is used to estimate digital-TV overlaps. Comscore utilizes the datasets from several such single source panels to create training sets for deduplication algorithms to estimate audiences. Similarly, Comscore has developed and patented a methodology to use behavioral matching across data sets to identify STBs that are connected to Smart TVs, and therefore to deduplicate across the platforms.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

OOH consumption of linear advertising is not currently included in CCR.

In your view, what differentiates your TV measurement offering from other competing measurement services?

- Massive scale

- One single methodology for Local/National

- Stable and predictable

- Second-by-second precision

- Support of cross-platform measurement

- No response bias or respondent fatigue

- Passive collection and observational research

- Software instead of hardware solutions

- Expansive client-base covering buy and sell side both nationally and locally

What % of your annual revenue is measurement? (If less than 100% please provide brief description of other key revenue drivers.)

As a public company, the portion of our revenue that is explicitly measurement is not something that Comscore reports. Using the most complete calendar year for which we've reported revenue publicly, 2020, Comscore had revenue of $356m. That revenue falls into the following categories:

- Ratings and Planning = $253.6M

- Analytics and Optimization = $69M

- Movies Reporting and Analytics = $33.3M

Who are your measurement clients and what % of your measurement business do they represent?

Universe Assumptions

How many TV HHs do you collect data from?

Comscore collects data from 75M+ televisions and 40M HHs.

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

Comscore's current HH TV universe estimate is 95,364,670 HHs. Comscore creates its own TV household universe estimates at a local market level as well as nationally. This is based on a variety of information sources, including S&P Global, Comscore's internal linear television subscriber population data, and Comscore Local Market Television Surveys.

Do you use weighting or sample balancing?

Yes.

If yes, please briefly describe your methodology.

Comscore's projection methodology starts at the zip code level and builds to the market level. In this projection methodology, we account for several factors, including:

- The quantity and distribution of cable, satellite, IPTV, and OTA homes

- Demographic and geographic distribution

- Adjustments for non-reporting set-top-boxes

- Network coverage

Comscore's local-market estimates are built off this process, and Comscore's national estimates are straightforward sums of Comscore's local market estimates.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

Comscore's Census Network is one of the largest in the world, collecting information on over 50 billion internet events every day. Data from this network is collected through digital tagging of web sites, videos, mobile apps, advertisements, and distributed content. Our methodology uses a two-step process to generate detailed graphs based on this data:

- IP Co-Location. Identifies connections based entirely on census data.

- Learning Algorithm. Reduces connections by determining if, given the associated census data, the IDs are from the same physical device.

Which identity providers do you work with?

We work with a variety of providers including Experian, LiveRamp, and OpenID.

How do you model missing device IDs and IP addresses?

Comscore has over one hundred patents around data collection, processing, and projection methodologies. Comscore's methodologies to project to the total population are detailed in our description of methodology and are subject to independent review as a part of our engagement with the MRC.

Do you have the ability to bring in first-party data?

Yes, subject to the use-case, we have the capability and expertise to bring in first party data.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

Comscore TV products precisely measure and report TV viewership using second-by-second intelligence from approximately 75 million TVs in approximately 40 million households. Comscore reports Exact Commercial Ratings (ECR), which are ratings and impressions based on the commercial seconds of the telecast. In addition to second-by-second reporting, Comscore reports out on other aggregates of viewing, such as telecasts, quarter-hours, and dayparts.

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

TV: Final data is summarized on Day 11 post airdate. However, preliminary data is available typically a few days post air. At Day 3 data is estimated to be 96% complete and at Day 7, data is estimated to be 99% complete. Until reporting for an air date is final, Comscore TV uses a proven statistical method to estimate the final reporting.

For Comscore Campaign Ratings, reporting on cross-platform campaigns is updated daily with digital/CTVOTT reporting finalized within 72 hours, and TV finalized on the same schedule as Comscore TV.

How are your reporting details delivered?

Our TV data is delivered in a UI (Comscore TV), API, TPPs, Snowflake, S3, SFTP and other electronic transfer methods.

What is your definition of an impression or ad exposure?

Comscore reports on Average Audience. Average Audience is defined as the average number of TVs tuned into the network or program throughout the time frame. Calculated by dividing the Total Hours Viewed by the length of the time frame (in hours).

What is your definition of a view or viewing event?

A tune occurs when a STB remains tuned to a single telecast for one minute or longer. For such tunes, the entire tuning duration is included in Comscore's household measurements. Tunes of less than one minute are considered insignificant channel surfing and ignored during the summarization process.

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Yes, excluding OOH.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Yes, Comscore Campaign Ratings provides ad measurement across platforms, excluding OOH.

How do you identify an ad? If you use a third party, what is your source?

Comscore has partnered with Kinetiq as the new ad provider for ad occurrence information, effective with July 2021 broadcast data.

Do you provide household-level reporting?

Yes, Comscore's syndicated TV solution provides HH-level reporting.

Do you provide device-level reporting?

We provide aggregate device-level reporting by platform.

Do you provide person-level reporting?

Comscore's syndicated TV solution provides HH level reporting. Our syndicated digital and cross-platform solutions, including CCR, report at the person level. Comscore will have person-level reporting for Comscore TV in a beta phase by the end of 2022.

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

Comscore's personification solution, already present in CCR, takes full advantage of massive and passive set-top box (STB) audience information to extract reliable person-level audience estimates at granular levels in multiple contexts, including local market, cross-platform, and OTT. This is achieved through a statistical inference process by which HH-level media consumption data is assigned to, or allocated to, the persons within the HH. This starts with measurement of HH-level tuning, obtained through STB data capturing WHAT, WHEN, and HOW MUCH was watched; WHO watched is unknown, however. To solve for WHO watched we use a statistical "decoder" to extract signals present in the HH viewership information combined with known HH rosters and Bayesian statistics.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

Yes, the following age segments are measured in Comscore TV:
18-24, 18-34, 18-44, 18-49, 18-54, 18-64, 18+, 21-24, 21-49, 21-54, 21+, 25-34, 25-39, 25-54, 25-49, 25-64, 25+, 35-44, 35-54, 35-64, 35+, 45-54, 55-64, 50+, 55+, 65+

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned

Yes. Comscore's data provider for standard demographics is Experian. Comscore's MVPD partners share their subscriber files with Experian to facilitate the append of demographic information. The majority of Comscore demographics are created through a direct HH match process with Experian. This process is conducted without personally identifiable information of the MVPD subscribers being exposed to Comscore.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned

Yes, race/ethnicity on Comscore households is being assigned via the append of Experian demographics described above.

Do you report any other demographics beyond age, gender, race, and ethnicity and if so, which ones and how they are assigned?

Yes. Comscore provides thousands of advanced audience segments outside of standard age, gender, race, and ethnicity. These are appended in a blind-matching process of to MVPD subscriber files facilitated by Experian.

Do you measure advanced audiences (targeted audiences)?

Comscore advanced audiences pinpoint the valuable audiences you want to reach using Comscore's industry-leading insights on audience TV consumption habits, buying patterns, auto ownership and more. Comscore advanced audiences go beyond age/gender to find and reach audiences based on their behavior, interests and lifestyles.

If so, what is your methodology for identifying and measuring them (include data sources)?

Advanced audiences are matched to TV households via a blind-matching process of MVPD subscriber files facilitated by Experian.

Do you measure using advertisers' first-party data?

Yes, subject to the use-case, we have the capability and expertise to bring in first-party data.

If so, what is your methodology for onboarding?

Approved first-party audience appends are by linking the audience information to the TV households by working with an identity provider.

Other Noteworthy Items

Do you provide audience verification services?

Yes. Comscore's Validated Campaign Essentials (vCE) - Comscore Validated Campaign Essentials™ (VCE®) is a holistic advertising measurement solution that provides real-time insights to improve the performance of advertising campaigns.

Do you provide brand measurement services?

Comscore partners with AI technology leader Hive for our branded content offering and also recently acquired Shareablee that provides a wide spectrum of brand measurement (always-on as well as campaign-specific) across social media platforms such as Instagram, Facebook, TikTok, and more.

Do you provide incrementality measurement services?

Comscore Campaign Ratings measures reach by platform of an ad campaign. With this reporting, incremental reach of a platform, relative to another platform, can be identified.

Do you provide business outcome guarantee services?

Comscore has multiple solutions which measure business outcomes relative to ad exposure. This includes our Cross-Platform Brand Survey Lift offering, and our partnership with LiveRamp's Data + Math Platform. Whether these outcome-based measurements are utilized in media guarantees depends on the agreement between the media seller and buyer.

Do you provide multi-touch attribution or marketing mix modeling services?

Comscore itself does not provide an MTA or MMM offering. Comscore's does have relationships where its media data are used in MMM solutions.

What other media buying/selling solutions do you provide? Please describe.

Comscore Targeting Solutions enable real-time analysis of cross-platform content to increase relevant targeting and improve sales opportunities for both directly sold and programmatically sold inventory, including:

- Predictive Audiences: cookie-free, privacy-compliant audience targeting to enable programmatic and direct buying of inventory packages based on the following audience segments: TV Viewership, Demographics, CTV behaviors, Retail, Auto, Location, Financial, Political, Gaming, Health Conditions, and B2B

- Targeting Solutions cover the following formats: Livestreaming (patent-pending, industry-exclusive), CTV, VOD, Online/Mobile video, display, and audio (podcasting)

- Brand Safety & Brand Compliance: accurate, up-to-date, and scalable, powered by a team of analysts, engineers, and data operations specialists 24/7

- Custom and First-Party Segments: first-party cookie-free segments and custom definitions to meet advertiser needs for inventory packages

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)

Seeking Accreditation: Comscore TV. The scope of the audit includes both national and local quarter hour grid reports. The audit work has commenced and is expected to be completed by end of Q2 2022

Accredited: Comscore Media Metrix and Validated Campaign Essentials (vCE) are both MRC accredited.

iSpot.tv

iSpot.tv
Company Overview

iSpot measures linear and digital video in a unified manner to understand incremental reach over linear, and to measure digital video's impact on business outcomes compared to linear. With our Unified Measurement solution, you can measure and analyze your digital video campaigns with your linear TV buy in near real-time.

Founded in 2012, iSpot is a pure-play measurement (no media activation) provider with 400+ buy- and sell-side clients. We are privately held, in a strong financial position, and currently earn $100M in annually recurring revenue:

- We have higher annual revenue than any other TV measurement company aside from Nielsen or Comscore, having grown ~60% in 2021 across all of our subsidiaries

- US Market only, 95% of revenue from annual SaaS subscriptions (remainder is professional services)

- 300 employees across the country

- ~50% of advertisers spending over $100M annually on US TV advertising rely on iSpot measurement & analytics solutions.

- Revenue is derived from TV advertisers (~80%) and TV networks & media companies (~20%)

- Acquired AceMetrix (primary market research) and DRMetrix (Direct Response + Cover Up measurement) in 2021

Core iSpot Modules / Services:

- Media Measurement: Creative, airings, impressions and estimated spend

- Attention Analytics: Creative wear, Campaign analysis, Media analysis

- Conversion Analytics: Closed loop measurement against online and offline purchase data

- Creative Assessment: Offers brands rapid survey-based measurement to determine the emotional and brand impact of creatives, used for pre-market testing and in-market analysis of video ads.

- Integrated User Level Data (IULD) for Brands: Granular device level ad exposure data for any advertiser

- Universal IULD: Ad exposure data for all ads in all programs (advertisers name & ad title obfuscated)

- Unified Cross-platform Measurement: Impression, incremental reach and conversion measurement for digital and linear campaigns

- Segment-based Analytics: Measurement and planning tools against customer and consumer segments

- Integrations: Integration of iSpot data into Neustar and/or other third-party service providers

iSpot's Unified Measurement product allows for accurate and deterministic cross-platform analysis, including reach and frequency.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

We are currently offering the following (with lots of room to continue growing and improving our offering).

iSpot has been selling cross-platform measurement to the buy and sell side for 3+ years. We have nearly 100 customers, inclusive of networks, brands and digital publishers, currently utilizing the product at massive scale today.

iSpot has worked tirelessly, in close partnership with NBCU, over the last 7 months to test, scrutinize, improve and build a future roadmap for our cross-platform measurement solution known as Unified Measurement. We've already measured hundreds of campaigns together during the Summer Games in Tokyo and are about to measure hundreds more for the Winter Games in Beijing.

We believe iSpot's cross-platform premium video measurement solution, aka Unified Measurement, possesses several key advantages versus the competition:

- Speed – we are able to deliver unified reporting with less than a 24-hour lag, much faster than any comparable product on the market. We can do this because of the speed at which we capture ad information and viewing data on the linear side, along with our high scale data processing engine.

- Impressions are instantly captured when ads hit linear and CTV screens. Impressions are then mapped to the precise demographic makeup of the exposed audience and connected to subsequent conversions, such as web visits and sales. Results are displayed in real time via a comprehensive dashboard for networks and advertisers to take quick action and drive ROAS.

- The integration of household demographics along with panel-based, co-viewing measurement into iSpot's Unified Measurement platform marks the first time networks and brands can utilize person-level ad measurement to deeply analyze the impact of both linear and CTV campaigns in real-time.

- With the iSpot dashboard or custom data feed, networks and advertisers can track cross-screen TV ad activity—from reach and impressions to frequency and conversions—all in one, central place and compare incremental reach across individual streaming publishers as well as to linear TV.

- iSpot's ad tracking pixel is pre-approved to capture data from 300+ digital publishers

Cross-platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services—linear, streaming services, digital, VOD, OTA and OOH? If not, what is the gap?

Yes, we report unduplicated reach for both linear as well as streaming digital inventory. Within the Unified Measurement module, reach is available at both the person and HH level for both digital video and linear including incremental and overlap reach. This is provided in aggregate and at the publisher/platform, creative, and placement levels.

Upcoming Q1 2022 acquisitions will significantly advance OOH capabilities.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

iSpot's primary focus is on providing measurement for linear and digital video. While traditional digital measurement is possible using our impression pixel, this offering is not the core intention of our product. Outside of video, we have custom solutions and partnerships to facilitate holistic measurement across any channel.

In your view, what differentiates your TV measurement offering from other competing measurement services?

Our biggest differentiators are our proprietary ad catalog combined with the industry's largest Smart TV footprint to generate the fastest and most accurate unified measurement solution. We can say with confidence that any modern TV measurement approach must have both program level and ad level measurement capabilities built with on-the-glass ad delivery verification. It is the only way to precisely detect all formats of advertising in a deduplicated manner, which is critical traditional and advanced TV measurement. This on-glass ad delivery verification (our ad catalog natively combined with our smart TV measurement) is at the core of everything we do at iSpot. Our proprietary ad detection technology developed over 10 years combined with our depth of experience with smart TV data for the prior 6 years, places us uniquely ahead of other competitive solutions.

What % of your annual revenue is measurement? (If less than 100% please provide brief description of other key revenue drivers.)

100% measurement

Who are your measurement clients and what % of your measurement business do they represent?

Universe Assumptions

How many TV HHs do you collect data from?

We have access to data from 34M smart TV homes. 17.1M are currently being utilized within our products with an additional 17M HHs being added during H1 2022.

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

Our ranked panel is comprised of 3.5M homes. This will expand substantially in 2022 as we incorporate additional smart TV data.

iSpot data scientists transform our panel of smart TV households into one that represents the entire 122.8M U.S. TV homes.

Do you use weighting or sample balancing?

Yes, iSpot balances for demographics as well as viewership.

If yes, please briefly describe your methodology.

iSpot has transformed our panel of 19 million TVs into one that represents the entire US population. Though there are many areas to tackle, the initial place to start was accurately accounting for household viewership. This meant properly weighting each household based on their demographics and the amount of TV they consume relative to the national average.

In order to solve for the demographic biases inherent to the iSpot TV panel, we first partnered with another data provider, Epsilon, to obtain the demographic traits for each American household. Next, we use a well-known survey technique called "Iterative Proportional Fitting" or "Raking" to debias the panel. Raking effectively lowers the weight of overrepresented households and increases the weight of underrepresented households. Additionally, we designate TVs with heavy viewership as "primary" and TVs with all other TVs being considered "secondary." In this way we can properly weigh the TVs that are representative of household viewership.

In regard to demographics, iSpot built this panel using age & gender, education and household income demographics, though iSpot intends to add many more in the future. Across all these figures, the Census-Balanced Panel produced by the raking algorithm is significantly more representative of the Census (ACS) values for US demographics than the Raw Device Panel. The result is the updated panel unlocking accurate and reliable national ad measurement tracking for all iSpot clients.

iSpot's mission to have the most accurate extrapolated metrics means going beyond just demographic weights. The second innovation that our scientists developed was to correct for viewership biases (aka time spent consuming TV) in our panel. These viewership weights in combination with our demographic weights result in a significant increase in extrapolation accuracy.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

The iSpot device graph is rooted on 19-million internet-connected and opted-in smart TVs via an exclusive relationship with VIZIO. A combination of a persistent device ID (hashed MAC address) and its associated IP address form the foundation of the device graph. The TVs are connected to other digital devices such as tablets, PCs, laptops, and smartphones found within the same household and that share the same IP address at certain times of the day and at a persistent enough frequency. The opted-in smart TVs are the deterministic piece of our device graph.

To connect a smart TV to other devices in the household, iSpot leverages its pixel (the iSpot Pixel) which our customers integrate with their websites and apps. When the iSpot Pixel is displayed, or "fired," information from that device –including its IP address –is sent back to iSpot. iSpot further bolsters the accuracy of its device graph by leveraging integrations with other industry standard device graphs.

Additionally, we are partnered with all of the major identity providers to pull in first and third-party data.

Which identity providers do you work with?

Partners include: Neustar, Epsilon, LiveRamp, Experian, TransUnion, Oracle, and Adobe. Epsilon is the primary partner we are utilizing within our measurement platform today.

How do you model missing device IDs and IP addresses?

We reduce the universe down to the known amount, so if Experian can only map 65% of our TVs, that is the universe of TVs.

Do you have the ability to bring in first-party data?

Yes, for digital first-party data, the iSpot pixel integrates with clients' websites, apps, and other digital applications to directly collect and map data into our panel. For offline first-party data, iSpot works with many identity resolution partners to allow clients to bring in first-party data into our offerings. The primary use cases for first-party data include audience segmentation to power Segment Analytics and offline or CRM data within our TV Conversions module.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

For ads, we report at the most granular ad unit level. Each ad unit is measurement and verified independently from others on a second-by-second basis. For programs, we report at the aggregate for each program, providing average viewership figures by sampling the audiences immediately prior to each ad pod and averaging across the program.

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

All reporting and analytics in our dashboards and APIs have less than a 24-hour lag time.

Example data availability:

- Linear Airings - within one hour

- Est Spend - within one hour

- Attention - within 24 hours

- Impressions - within 24 hours

- Unified cross-screen measurement - 24 hours

- Conversions - within 24 hours

- Segment Analytics - 24 hours

How are your reporting details delivered?

Our clients prefer to use our dashboard, but we can also deliver via API, our embedded BI tool Analytics Studio, or through reports produced by our Custom Analytics team.

What is your definition of an impression or ad exposure?

iSpot's impressions are based on a verified play of an ad on a TV screen for six seconds. Once an ad play is verified, it is measured second-by-second all the way to completion or to interruption. These impressions are measured via ACR technology across our sample of 19 million opted-in smart TV devices.

What is your definition of a view or viewing event?

Same as above

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Yes. however, gaps include:

- Program rating are not syndicated (on the roadmap)

- Program ratings for streaming (on the roadmap)

- OTA is included in our on-the-glass measurement, but further calibrations are on the road map

- OOH is currently being built out, with an announcement scheduled for Q1 2022

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Yes; however, gaps include:

- Full person-level ratings not syndicated (on the roadmap, currently impression measurement is syndicated)

- OOH is currently being built out, with an announcement scheduled for Q1 2022

- OTA is included in our on-the-glass measurement, but further calibrations are on the roadmap

How do you identify an ad? If you use a third-party, what is your source?

Spots are detected passively over content operator feeds using proprietary technology. We utilize a combination of satellite TV, and local cable providers from the 27 local markets we index directly to build this feed and ad catalog.

Do you provide household-level reporting?

Yes

Do you provide device-level reporting?

Yes

Do you provide person-level reporting?

Yes

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

For person-level watching & co-viewing estimation we connect our extrapolated household-level demographics to data provided by TVision in order to take the measurement down to the person-level. TVision monitors opted-in households to identify which persons are actually watching the TV in the home. Their data captures co-viewing for true person-level measurement. The TVision data set is not matched deterministically to ours, but instead provides us with a distribution of TV watching patterns by age and gender for the given content. iSpot overlays these person-level distributions to our existing household-level data sets to report person-level demographics at scale.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

Yes, demographic data is provided at the household level or with age and gender standard breaks across 18+, 21, 25, 30, 35, 40, 45, 50, 55, 65+. These breaks are being expanded upon as a part of the NBCU iSpot alt currency engagement.

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned.

We connect our extrapolated household-level demographics, to data provided by TVision in order to take the measurement down to the person/gender-level. TVision monitors opted-in households to identify which persons are actually watching the TV in the home. Their data captures co-viewing for true person-level measurement. The TVision data set is not matched deterministically to ours, but instead provides us with a distribution of TV watching patterns by age and gender for the given content. iSpot overlays these person-level distributions to our existing household-level data sets to report person-level demographics at scale.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned.

Not within our platform as a filter but we can accept any advanced audience containing these details and provide viewership measurement.

Do you report any other demographics beyond age, gender, race and ethnicity and if so, which ones and how they are assigned?

There are no limitations to audience mapping. We can accept any first or third-party segments from our clients linked to our identity partners.

Do you measure advanced audiences (targeted audiences)?

There are no limitations to audience mapping. We can accept any first or third-party segments from our clients linked to our identity partners.

If so, what is your methodology for identifying and measuring them (include data sources)?

We can receive these directly from our clients linked to IDs from Neustar, Epsilon, LiveRamp, Experian, TransUnion, Oracle, and Adobe.

Do you measure using advertisers' first-party data?

We offer robust audience segmentation capabilities via our Segment Analytics solution. The solution enables first and third-party segments to be fed into the iSpot platform, enabling impression, reach and conversion measurement against specific audience segments.

iSpot has partnerships with all major DMPs where its data can be utilized for targeting/retargeting of households, but we do not directly enable targeting or retargeting as a core capability.

We can also ingest first-party business outcome data via the same methods to power our TV Conversions product.

If so, what is your methodology for onboarding?

We match into our panel via Neustar, Epsilon, LiveRamp, Experian, TransUnion, Oracle, and Adobe. IP/Timestamp matching serves as the basis for these ID relationships.

Other Noteworthy Items

Do you provide audience verification services?

Yes, for ads. iSpot's Media Measurement verifies audience delivery in a dedicated manner across all ads running on linear TV.

Do you provide brand measurement services?

iSpot's 19M smart TV devices are mapped to industry leading brand research panels. We currently have deep integrations with Dynata, Upwave and Lucid that enable your teams to easily track and contact exposed and unexposed TV populations that enable lift and more traditional brand health metrics.

Through Ace Metrix we have select in-house brand tracking capabilities including purchase consideration as well as a brand recognition question that are both asked on every ad test and come with comparative industry norms.

Additionally, we can ask custom questions that could be asked over the course of a campaign. On our product innovation roadmap, we are developing Ace In Market that will measure more traditional trended brand lift.

Do you provide incrementality measurement services?

Yes, iSpot calculates incrementality with controls for viewers who would likely have converted regardless of ad exposure. This shows the true causal impact of TV advertising. We create control groups to accomplish this based on viewing content as well as by publisher. Additionally, several other balances are applied to these groups to assess the balancing between these exposed and unexposed groups to ensure that the lift metric falls within a tolerable level of standard error. Our platform runs 10,000 control groups in an automated fashion daily to ensure this precision.

Do you provide business outcome guarantee services?

Yes, we work with multiple network partners (mostly cable networks) in this way, whereby they leverage iSpot's TV Conversion Analytics to guarantee brand-specific business outcomes across web/app and location-based KPIs. Brand participation thus far has been across multiple industries inclusive of retail, home & real estate, and electronics. Historical data and recurring campaign reporting are provided to the Network group in order to analyze and set a guarantee that works for all parties as well as monitor and optimize performance throughout active campaign.

Despite the somewhat nascent nature of these outcome-based guarantees in the marketplace, iSpot is a leader in this area, and we have learned a lot measuring this type of campaign over the last few years. For example, we know that guaranteeing conversation rate is risky because impression volumes fluctuate so wildly from year to year, and quarter to quarter. For this reason, lift is usually recommended.

From a process standpoint, iSpot works closely with network, brand, and agency partners in facilitating the planning, benchmark setting, and eventual campaign reporting that happens during and post campaign.

Do you provide multi-touch attribution or marketing mix modeling services?

iSpot is bringing digital-like metrics to TV and has made significant progress solving for MTA and MMM measurement. iSpot has internal solutions, a partnership with Neustar, and gives our clients the ability to take our viewership data in-house to solve MTA and MMM.

iSpot IULD can also be provided to any other MTA partner, and our impressions, airings, and spend data can be licensed to other MMM providers.

What other media buying/selling solutions do you provide? Please describe.

None. iSpot is a pure play measurement company with no media activation revenue or business ambitions.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

MRC accreditation for our foundational ad detection measurement is in process. Beyond MRC, our proudest certification is the wide adoption of our products, services, and analytics across the TV eco-system.

◄⋗ Nielsen

Nielsen
Company Overview

Nielsen serves the world's media and content ecosystem and is a global leader in audience measurement, data, and analytics. Through our understanding of people and their behaviors across all channels and platforms, we empower our clients with independent and actionable intelligence so they can connect and engage with their audiences—now and into the future.

An S&P 500 company, Nielsen operates around the world in more than 55 countries. Nielsen was founded in 1923 by Arthur C. Nielsen, Sr. For nearly a century, we have advanced the practice of media audience measurement to provide our clients a better understanding of their consumers.

Specific to U.S. audience measurement, Nielsen delivers audience measurement representative of the US population for both ads and content. We provide viewership and impact analytics primarily to media publishers and marketers and their advertising agencies for linear television, streaming, and digital video; we also are the leader in audio measurement. Nielsen delivers comprehensive coverage of national ads—nearly 100% of linear TV ads, over 90% of digital ads, and over 75% of CTV ads. Audience insights are available by household, age, gender, and many other characteristics. Reported characteristics include hundreds that are collected directly from Nielsen's panels and data integrations through third-party research firms or clients' first-party data. Today, Nielsen delivers deduplicated reach and frequency measurement for ads and content via Total Ad Ratings and Total Content Ratings.

Nielsen has also embarked on a transformation of its audience measurement suite of solutions to deliver Nielsen ONE—a cross-media first product suite that will launch at the end of 2022. With the involvement of several early companies participating, Nielsen ONE Alpha will be the industry's first ad measurement system that offers both comparability and audience deduplication across all screens (linear TV, connected TV, computer, and mobile). Through Nielsen's planning and outcomes solutions, clients can optimize marketing ROI throughout the customer journey. Together, Nielsen's audience measurement, planning, and outcomes solution provide end to end audience insights and measurement.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

Currently providing and evolving; by 2024, the Nielsen ONE product suite will replace legacy tools, offering cross-media first insights with the ability to identify how individual platforms perform in delivering desired audiences. This transformation aligns with clients' desire to lead business transactions with a cross-media, holistic view of audiences.

Cross-platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services— linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

Nielsen currently provides unduplicated reach and frequency across many platforms within linear (including OTA), streaming, digital and VOD. The Nielsen ONE product line that will launch at the end of 2022 and serve as a cross-media first suite of products for ads and content, will address the following coverage gaps: CTV growth beyond 75% coverage, OOH (including reach metric), and four screen deduplication.

Nielsen's approach to deduplication is centered on Nielsen's Identity graph, consisting of first-party information from Nielsen's quality panels and partner providers that result in a rich data set of over 1 billion unique devices, 300 million people, and 210 million emails associated with people. The Nielsen Identify graph is strictly used by Nielsen for measurement purposes allowing for interoperability with other identity solutions/graphs (e.g., Experian). This data set allows Nielsen to identify duplication of exposure to ads or content.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

As a currency, Nielsen endeavors to provide comprehensive, syndicated audience measurement that allows for transparent, frictionless, and efficient transactions whether for ads or content distribution deals. Nielsen's gap areas are in delivering more coverage and full deduplication. Nielsen's deduplication methodology has been released in alpha via Nielsen ONE Ads. Nielsen One Ads will officially launch at the end of 2022, followed by Nielsen ONE Content, Planning, and Analytics modules. To meet the coverage goal, we encourage valued clients like NBCU to enable audience measurement and encourage participation among their distribution partners.

In your view, what differentiates your TV measurement offering from other competing measurement services?

As a long-standing trusted source for TV audience insights, Nielsen's areas of distinction include the following:

- Representative - delivering audience estimates fully representative of the US population, including race, ethnicity, geography, education, cable status including broadband only and over the air homes

- Comprehensive - measuring all operable TV sets in the home, all devices connected to those TV sets, all people in the home including visitors, the vast majority of content owners with national ad inventory

- Transparent - continually audited by an independent third party and delivering detailed methodology reviews to the MRC committee for the accreditation process

What % of your annual revenue is measurement? (If less than 100% please provide a brief description of other key revenue drivers).

In 2020, 73% of Nielsen's global revenue was from audience measurement. The remaining 27% was from plan / optimize.

Who are your measurement clients and what % of your measurement business do they represent?

Nielsen has agreements with leading content owners across linear and digital platforms as well as buyers, including agencies and advertisers. Nielsen data underpins the media planning/buying process for national and local advertising within video content whether on TV, CTV, or digital platforms. Nielsen also measures audio.

Universe Assumptions

How many TV HHs do you collect data from?

National TV Panel - 41,600; Panel+Big Data - approximately 30 million

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

Nielsen starts with the US census and designs the National TV panel to closely align its composition on key factors including race, ethnicity, geography, household size, and presence of children. All data reported from the 41,600 panel are directly collected and reported. Nielsen has also integrated big data sets from RPD providers (Dish & DirectTV) as well as ACR providers (Vizio and Roku) that leads to a sample base of approximately 30 million households. This enhanced panel plus big data methodology will launch in September 2022. Nielsen completes a certification process with providers of any big data sets to calibrate the data for measurement purposes. Advanced modeling techniques are utilized to determine audience age, gender, and other characteristics, including race, ethnicity, and co-viewing. All models are tested against a subset of the National TV panel where behavior is directly measured, and procedures are independently audited to ensure the quality of the models.

Do you use weighting or sample balancing?

Yes

If yes, please briefly describe your methodology.

Weighting is used to project estimates to the total US population. Nielsen additionally oversamples to account for known differences in cooperation among varying types of households.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

The Nielsen Identity Graph uses a Community Detection Algorithm to identify strongly linked devices that belong to a person/household.

Which identity providers do you work with?

Nielsen furnishes a list of identity providers to subscribing clients on request.

How do you model missing device IDs and IP addresses?

We use a probabilistic model using metadata sourced from Nielsen tags and SDK.

Do you have the ability to bring in first-party data?

Yes, we can match first-party data to the PII spine of the identity engine to onboard first party data.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

Nielsen reports data at the time period, program, episode, and telecast levels for content, including detailed insights by minute. Current crediting rules for television are at the minute level; however, Nielsen is shifting to sub-minute granularity effective with Nielsen ONE which will launch at the end of 2022. Nielsen ONE will also provide commercial ratings for linear ads.

Today, campaigns on digital platforms, including CTV are credited based on second-by-second granularity. With Nielsen's recent announcement of Nielsen ONE Alpha, four screen campaign measurement is available based on sub-minute crediting rules and is being tested by select clients participating in the alpha.

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

Metrics delivery, including cross-platform, ranges from real-time to weekly depending on measurement product and specific campaign details.

How are your reporting details delivered?

Nielsen delivers audience data via analytic applications, data files, APIs, and cloud to cloud data access options.

What is your definition of an impression or ad exposure?

For linear TV, it is who is in the audience at the time the commercial airs as identified by Nielsen's National TV panel or via provider data that has been calibrated by Nielsen. Crediting rules today are based on the originator that won the minute; crediting rules in the future will provide a more refined understanding of the audience with exact commercial ratings.

For digital and CTV, Nielsen counts the impression when the tag fires and provides several options to apply qualifiers including MRC Viewability Standard, Base: 1% pixels 0s and Video Complete: 0%, 100% Video. An impression is defined as a tracked ad collected from the pixel or other identifier embedded within an ad during a given user session. Household devices such as CTV receive a co-viewing factor when audience counts are calculated relative to impressions.

What is your definition of a view or viewing event?

See above

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA, and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Yes, all listed platforms are currently measured.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA, and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Yes, all listed platforms are currently measured.

How do you identify an ad? If you use a third-party, what is your source?

Nielsen identifies national and local linear TV ads via Ad Intel using passive recognition technology. Nielsen has also expanded its relationship with Extreme Reach to Nielsen watermark all national ads running through their platform. Additionally, Nielsen receives national ad logs from measured TV networks and reconciles across all above-mentioned information streams to deliver comprehensive advertising insights. Digital and CTV campaigns are tagged and measured based on direct engagements with each client.

Do you provide household-level reporting?

Yes, Nielsen provides household and person-level audience metrics for linear and addressable TV. Campaign measurement for CTV and digital platforms is at the person level.

Do you provide device-level reporting?

Yes, Nielsen provides audience metrics for all operable TV sets within a home and any devices connected to those sets including internet-connected devices and video game consoles.

Do you provide person-level reporting?

Yes, Nielsen provides detailed person-level audience metrics by age/gender and many other characteristics.

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

Via the National TV panel, Nielsen has direct measurement of person-level viewing based on people meter devices installed in the homes. Where set meters or big data are used, Nielsen utilizes a viewer assignment model to determine the persons that were in front of the TV set at the time of viewing.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

For television, Nielsen reports on ages 2+ at the individual and building block level. For digital reporting, Nielsen reports on ages 13+ at the building block level.

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned.

Yes, Nielsen determines the gender and age of each person in the household among our panel, including any long-term visitors (e.g., caretaker). Nielsen also coaches homes to record the age/gender of any short-term visitors on the people meter devices. For big data sets that are getting integrated into the methodology, Nielsen has developed models to assign audiences at the gender/age and other advanced audience segments.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned.

Yes, the process is the same as it is for determining age/gender.

Do you report any other demographics beyond age, gender, race, and ethnicity, and if so, which ones and how they are assigned?

Nielsen reports many characteristics for homes and persons beyond race/ethnicity. They include but are not limited to education, household size, income, presence of children, language spoken, and cable status. The methodology for assessing these characteristics is the same method for assessing age, gender, race, and ethnicity.

Do you measure advanced audiences (targeted audiences)?

Yes

If so, what is your methodology for identifying and measuring them (include data sources)?

Nielsen delivers rich advanced audience information that is either directly collected or through data fusions (e.g., MRI), data matches (e.g, NCS, POLK), or direct data matches with clients' first-party data.

Do you measure using advertisers' first-party data?

Yes

If so, what is your methodology for onboarding?

Nielsen has security and privacy-approved data matching partners including but not limited to TransUnion, Experian, LiveRamp, Epsilon, and Neustar. We provide Nielsen's first-party data in an aggregated and salted file via secure transfer to the data matching partner chosen by the client. Matching is done at a respondent level, provided back, stripped of PII via secure transfer and desalted against Nielsen data to be used in a defined project/manner contracted in advance. First-party data is appended to Nielsen deterministically. Methodology for use can be provided by each data set in which is contracted.

Other Noteworthy Items

Do you provide audience verification services?

Yes, Nielsen provides comparable and deduplicated audience verification services across channels.

Do you provide brand measurement services?

Yes

Do you provide incrementality measurement services?

Yes

Do you provide business outcome guarantee services?

No

Do you provide multi-touch attribution or marketing mix modeling services?

Yes, we also provide sales lift.

What other media buying/selling solutions do you provide? Please describe.

Nielsen has a collection of survey-based solutions that are used to facilitate the media buying and selling process. For example, Nielsen's Total Media Resonance (TMR) offering leverages advanced modeling to enable media owners to understand the effect of a campaign on a brand's KPIs (such as awareness, favorability, and intent) across all channels, including TV, digital, out-of-home, print, audio, and more. We also have purely custom research solutions that help media sellers understand the consumer perspective on content and ads.

Nielsen has a cross-media planning and simulation tool in Nielsen Media Impact that predicts reach and frequency for a given media campaign across a variety of media vehicles. It leverages respondent level data sets across linear television, CTV, non-linear VOD, SVOD, desktop, mobile, and radio as well as partnerships for cinema, magazine, and out of home to do so. NMI also can overlay advanced audiences derived from third-party premium partners, client's first-party data stacks or collected via our panels.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

Accreditation currently suspended; actively working on re-accreditation.

Oracle
Company Overview

Oracle offers integrated suites of applications plus secure, autonomous infrastructure in the Oracle Cloud. Founded in 1977, Oracle now has 133,000 employees and serves 430,000 customers across 175 countries. The company reported $40B total GAAP revenue in FY2021.

Oracle Moat, part of Oracle Advertising and Customer Experience (CX), provides end-to-end campaign measurement from impression validation to sales lift with three key products: Oracle Moat Analytics, Oracle Moat Reach, and Oracle Moat Outcomes. Oracle Moat Analytics offers brand safety, viewability and invalid traffic verification solutions, and attention analytics. Oracle Moat Reach offers cross-channel audience measurement that delivers a deduplicated view of person and household reach and frequency across linear TV, connected TV, digital online video, and display. Finally, Oracle Moat Outcomes offers in-flight sales lift measurement.

The focus of this questionnaire is on cross-platform measurement with Oracle Moat Reach.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

Oracle Moat Reach is capable of providing currency-grade reach and frequency measurement, in addition to viewability and attention measurement with Oracle Moat Analytics, and best-in-class ROI measurement with Oracle Moat Outcomes. For Oracle Moat Reach specifically, we are building in compliance with MRC cross-channel certification guidelines and working toward official certification and are seeking the right publisher partner(s) in 2022 to explore using Oracle Moat Reach as an accepted currency within media buying and selling.

Cross-platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services—linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

Oracle Moat measures unduplicated reach and frequency across the US market for the following services: linear, OTA, and VOD. In addition, digital and CTV is captured directly via Oracle Moat's measurement tags, and the deduplication is done by mapping exposures to Oracle's proprietary Identity Graph, covering 115M U.S. households.

Oracle Moat Reach does not currently measure OOH.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

Oracle Moat is currently prioritizing the expansion of our linear and digital datasets before expanding into OOH measurement.

In your view, what differentiates your TV measurement offering from other competing measurement services?

Foundation in MRC-accredited valid and viewable impressions in digital, with panel partnerships in linear to provide viewability and co-viewing data

Tied to Oracle Identity Graph: Oracle's proprietary Identity Graph allows deduplicated reach and frequency measurement across-platforms at both the person and household-level across linear, CTV, and digital

Built on Oracle audiences: Report on audience composition and reach based on as many of a brand's targeted audiences as needed, using syndicated, custom-built, and first-party audiences

Granularity and speed of insight: Daily updates throughout a campaign and the ability to drill into data at any custom date range or combination of media partners allows for in-flight optimization and a level of granularity that makes it possible to tie actions taken to their campaign results

What % of your annual revenue is measurement? (If, less than 100% please provide brief description of other key revenue drivers.)

Oracle Advertising is comprised of Audience, Contextual Intelligence, and Measurement solutions, founded in 2014 following Oracle's acquisition of BlueKai, then expanded with five additional acquisitions–Datalogix (2015), AddThis (2016), Crosswise (2016), Moat (2017), and Grapeshot (2018). With this strategy, Oracle seeks to strengthen its product offerings in market, accelerate innovation, meet customer demand more rapidly, and expand partnership opportunities. An integral part to our business philosophy is to grow while never compromising our unwavering commitment to customer service and product support.

Oracle does not disclose revenue breakdowns for Oracle Advertising or Oracle Moat specifically, but demand for Oracle's measurement solutions has continued to grow YOY across global brands, agencies, platforms, and publishers.

Who are your measurement clients and what % of your measurement business do they represent?

Oracle Moat's core client base is made up hundreds of the top brands, agencies, and publishers.

Universe Assumptions

How many TV HHs do you collect data from?

Oracle receives data from roughly 15M TVs as of January 2022.

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

Oracle receives data from roughly 15M TVs as of January 2022 and are able to match a subset of those to US households via the Oracle Identity Graph. Oracle refers to the US Census for universe estimates.

Do you use weighting or sample balancing?

Yes, Oracle uses weighting.

If yes, please briefly describe your methodology.

Oracle uses weighting to make unbiased inferences about commercial viewing in the US based on the TV footprint matched to the Oracle Identity Graph. Within this footprint, we are able to assess HH demographics. These attributes include education, income, presence of children, household size, age (head of HH), race, urban/rural status, and local market, and are then adjusted to match national values. Except for the last two attributes, information from the US Census is used as the benchmark. TVs matched to HH with full demographic information are also not randomly distributed. To avoid adding another bias, daily activity data (hours of viewing per day) from both matched and unmatched TVs are used to create an activity weight to ensure that with respect to viewing both groups are equivalent. Nightly, the number of active TVs is estimated for use in calculating weights. Identity maps and demographic information are updated at different cadences. We rely on a second data provider for individual level demographics. A similar methodology is used to help ensure that these individuals and households are representative of US TV viewers. These steps have allowed us to significantly decrease our bias with a minimal increase in our variance.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

Oracle's proprietary Identity Graph is built on a PII foundation of real people buying real things. With a data co-op of more than 1,500+ retailers with both mail order and e-commerce businesses, as well as CPG transaction data, our transaction data records more than $1B transactions per week and represents 99% of U.S. households.

Which identity providers do you work with?

Oracle owns and maintains our Identity Graph that includes proprietary inputs, as well as linkage data from over two dozen industry-leading linkage providers.

How do you model missing device IDs and IP addresses?

For TV impression data, Oracle is provided a unique TV identifier and IP address for each record. Not all IPs are matched to households and consequently not all impressions can be weighted using demographics. As mentioned in the question on weighting and sample balancing, we do not assume that matched and unmatched TVs are the same; rather, we balance the activity data for matched and unmatched TVs so they are similar. We also recognize that we do not see all TVs within a household. To address this issue, we apply a distribution of TVs per HH based on third-party research to estimate exposure on all TVs in the household. We also adjust weighted reach estimates and impression counts so that a bias is not introduced based on changes in the proportion of TVs matched over time.

Do you have the ability to bring in first-party data?

Yes, Oracle can onboard any first-party audiences into the Oracle Identity Graph via our OnRamp product for clients to track exposure delivery against using Oracle Moat Reach.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

Oracle Moat Reach allows users to see metrics aggregated across any combination of campaigns and sites. Users can select to view all the impressions they served, or filter to impressions that met one of three viewability standards. Users can view campaign data for any date range or use quick filters for last-7, last-30, last quarter, etc. Data is available at the impression, device, person, or household-level. Some of the data points include:

- Total reach and frequency

- Viewable reach and frequency

- Age and gender demographic breakdowns of reached people.

- Reach into relevant Oracle audiences

- Breakdowns of exposure data by platform (e.g., desktop vs. mobile)

- Overlaps in reach between platforms, campaigns, media partners, or date ranges

- Show-level reach and frequency for Linear TV

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

Digital and CTV data are available next day; linear TV data in 2-3 days.

How are your reporting details delivered?

Online dashboard with real-time filtering and view configuration capabilities.

What is your definition of an impression or ad exposure?

For digital and CTV, Oracle uses the MRC definitions of an ad impression, including filtration for IVT. For linear TV, any ad that plays through the glass for the ACR capture is considered an impression/exposure.

What is your definition of a view or viewing event?

Oracle Moat Reach allows you to filter down to the subset of impressions that met a particular viewability standard (e.g., on-screen, MRC-viewable, audible, and viewable on completion (AVOC), and GroupM viewability).

Viewability for linear TV ad exposures are measured through our panel partnership, which powers the below viewability metrics:

- Valid: An ad was on screen for 2 seconds

- In-Room: A person was in the room while the ad was on for at least two seconds

- Seen: A person watched the ad for at least two seconds

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA, and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Oracle Moat Reach does not currently cover programming content.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA, and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Oracle Moat Reach captures linear (and VOD) ad content via our ACR partnerships. Digital and CTV ad content is measured via Oracle Moat Analytics JS and pixel-based tags, respectively. The deduplication is done by mapping these exposures to Oracle's proprietary Identity Graph covering 99% of US households. Oracle Moat Reach does not currently capture OTA or OOH advertising.

How do you identify an ad? If you use a third party, what is your source?

For linear, ads are captured and cataloged by our ACR partners. Metadata for digital ads are captured via ad server macros placed within the Oracle Moat tag.

Do you provide household-level reporting?

Yes, all channels.

Do you provide device-level reporting?

Yes, all channels except CTV.

Do you provide person-level reporting?

Yes, all channels except CTV.

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

We have a panel partnership that provides person-level co-viewing data.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

Yes, Oracle Moat Reach reports age and gender demo-level metric which can be customized for any age bracket increments (starting 18+).

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned.

Yes, Oracle Moat Reach maps to the gender of the individuals in the Oracle Identity Graph as provided by various industry identity providers.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned.

No, Oracle doesn't report on any ethnic audiences.

Do you report any other demographics beyond age, gender, race, and ethnicity and if so, which ones and how they are assigned?

Any Oracle audience can be loaded to Oracle Moat Reach. Oracle audiences include purchase history, age of head of household, interest, and more.

Do you measure advanced audiences (targeted audiences)?

Yes, any audience mapped to Oracle's Identity Graph can be tracked in Oracle Moat Reach. This includes over 2,000 syndicated audiences (purchase-based, lifestyle, etc.) as well as the ability to on ramp any client first-party audiences.

If so, what is your methodology for identifying and measuring them (include data sources)?

Oracle Moat Reach maps deduplicated reach to the households and people within the Oracle Identity Graph, and audience membership maps to these same people and households. Oracle Moat Reach is displaying the respective overlays.

Do you measure using advertisers' first-party data?

Yes, we can onboard advertisers' first-party data.

If so, what is your methodology for onboarding?

We securely ingest data to map the first-party audience to the people and households within the Oracle Identity Graph to create custom first-party audience(s).

Other Noteworthy Items

Do you provide audience verification services?

Yes, the audience measurement metrics reported in Oracle Moat Reach can be used for Audience Verification.

Do you provide brand measurement services?

No, we do not provide brand measurement (brand lift/recognition) metrics

Do you provide incrementality measurement services?

Oracle Moat Reach can report the incremental reach provided by various channels, campaigns, or media partners.

Do you provide business outcome guarantee services?

No, Oracle Moat Outcomes provides sales lift measurement, but coverage is not directly tied to the same cross-channel landscape as Oracle Moat Reach.

Do you provide multi-touch attribution or marketing mix modeling services?

No

What other media buying/selling solutions do you provide? Please describe.

In addition to Oracle Moat Reach and the above-mentioned Oracle Moat Outcomes sales lift measurement, we also provide ad verification, brand safety and attention measurement with Oracle Moat Analytics.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

Oracle Moat Reach has not submitted any metrics to the MRC for accreditation, though we are building in compliance with MRC-cross channel certification guidelines. The in-view and IVT impression metrics used in Oracle Moat Reach and powered by Oracle Moat Analytics are MRC accredited. Oracle's full list of MRC accredited services is available and up to date on the MRC website.

SAMBA TV

Samba
Company Overview

Samba TV is a global leader in first-party data for TV & omniscreen audiences, advertising, and analytics. Our ACR software is integrated into the hardware of leading smart TV brands (24 globally, 10 US), and we provide insight into content and advertising viewership across broadcast, cable, OTT, and digital media.

A leader in cross-platform measurement today, Samba provides campaign measurement for top marketing, publishing, and agency clients of (HH-based) audience delivery, deduplicated reach and frequency, and business outcomes. We offer real-time (updated every 24 hours) dashboards that clients tap into for in-flight campaign optimization, including a view of (HH-based) audience aggregate and deduplicated impression and R/F delivery, by channel and by individual TV, CTV, and digital publisher. Additionally, we offer exposure-level reporting for all these metrics.

Our measurement products and services are built on TV viewership data from our US research panel of 3M ACR households, normalized to be almost perfectly representative of US population geographically, demographically, and ethnically (e.g., 0.0003%-0.01% average absolute difference vs. US Census). Samba's TV data footprint is the most diverse in the industry, drawn from 10 smart TV manufacturers in the US. Our US panel, our proprietary identity graph covering 106M US HHs, and a variety of log-level and pixel integrations across the publisher/platform landscape enable our multi-channel, partner, screen, creative, and tactic-based measurement product.

Founded in 2008, Samba has 294 employees (Jan 2022), with data/media/measurement operations in the US, CA, UK, Germany, Italy, Australia, and Japan, and offices in SF, NYC, LA, CHI, Austin, London, Warsaw, and Taipei. Samba's estimated annual revenue for the 12 months ended Sept. 30, 2021, is $123M.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

Seeking to provide in 2022, with trials kicking off in H2 2022.

Cross-Platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services—linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

Yes. Samba's measurement products are anchored in first-party, deterministic TV viewership and ad exposure data, which Samba captures via ACR across linear TV, VOD, OTA, and [select] streaming TV; additional CTV and digital exposure are captured via log integrations and pixels. The combination of Samba's [deterministic] multi-OEM TV ACR and [deterministic & probabilistic] multi-identifier identity graph make us particularly strong at measuring interaction between TV/CTV/digital channels, deduplicating at a very granular level, and projecting viewership and ad exposure nationally with high accuracy. Currently Samba TV measurement panel excludes OTA HHs that do not own a smart TV and OOH behavior.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

OTA: Samba does capture TV viewing behavior for OTA-only HHs provided they have an internet-enabled Samba TV device and have opted-in. However, for OTA households that do not have internet access, we would not capture their OTA TV viewing behaviors. We may detect digital exposures from these HHs, but Samba has no immediate plans to integrate any data sets that would incorporate TV viewing behavior from these HHs, as there is no data available since they are effectively "off the grid" viewing behaviors.

OOH: Samba currently captures some OOH signal from opted-in TVs in public spaces (restaurants, airports, etc.), which we currently identify and remove from our panel to eliminate non-HH signals. We have no immediate plans to expand our panel to include these or additional OOH exposures but could explore alternate solutions with NBCU to identify and improve coverage through surveys and commercial set-top box viewership signals.

In your view, what differentiates your TV measurement offering from other competing measurement services?

Samba's first-party US TV data footprint is diverse and representative, drawn from 10 smart TV manufacturers. While we do normalize our data to match US Census, very little "normalizing" is necessary as our raw footprint is already extremely representative, enabling more accurate measurement of ad and content viewing behavior vs. 1-2 OEM solutions.

Also unique to Samba is our owned and operated 106M HH US identity graph, which underpins our cross-channel measurement and deduplication product. We have a very robust device-to-HH mapping incorporating 70 days of historic data for the highest accuracy mapping, and our identifiers are updated daily. This typically results in higher match/coverage rates for our clients compared to third-party driven solutions.

What % of your annual revenue is measurement? (If less than 100% please provide brief description of other key revenue drivers.)

We generate revenue through our two product categories: audience, which comprised 85% of our 2020 revenue, and data, which comprised 15% of our 2020 revenue.

Who are your measurement clients and what % of your measurement business do they represent?

Due to current activities surrounding our S-1 filing, all client information and revenue breakdowns can be found here:
https://www.sec.gov/Archives/edgar/data/1542022/000119312522011136/d179999ds1a.htm#toc179999_9

Universe Assumptions

How many TV HHs do you collect data from?

6.1M TV HH's in the US from 8.1M TV viewing devices. Manufacturers include Sony, Phillips, Sharp, Toshiba, Sanyo, Element, Magnavox, Seiki, Westinghouse, and TCL.

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

121M in the US.

Do you use weighting or sample balancing?

Yes - We weight to the US Census at the market level on Ethnicity, Income, Age, Gender. Experian, US Census American Community Survey (ACS).

If yes, please briefly describe your methodology:

Samba US panel households must be part of our ecosystem for at least 28 days before they are included. We geographically balance our panel at the market level, map demographic and ethnicity data from Experian using our proprietary identity graph, then balance vs. US Census.

The result is that the Samba panel nearly perfectly matches the annual US Census American Community Survey (ACS) data on a geographic, demographic, and ethnic basis, with average absolute difference between our weighted panel and US Census data ranging between 0.00003% to 0.01% based on age, gender, HH income, ethnicity, and market.

Our method assigns a weight to each Samba HH so that they effectively represent "similar" households (note that "similar" is based on viewership, geography, demographics, etc.). This HH weight number is associated to each Samba device and then used to project results to a national level. The goal is to weight all the HHs in a panel such that their total weight represents the Census data accurately.

Samba is highly confident in the national projectability of our results, whether they be content viewing or advertising exposure. All of Samba's viewing data is refreshed DAILY.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

Samba TV has an in-house identity platform that processes digital signals and resolves them to households, persons, and devices. We use a variety data points including IP, timestamp, user agent, and multiple identifiers to help link signals to devices and to link devices to persons.

Which identity providers do you work with?

Samba TV works with multiple matching partners and identifiers: MAIDs, HEMs (coming Q1 2022), IPs, Experian LUIDs, LiveRamp RampIDs, Neustar OneID, and have worked with TransUnion on specific campaigns.

How do you model missing device IDs and IP addresses?

Within the Samba identity graph, we do not synthetically create missing identifiers.

However, within measurement campaigns we can rebalance our panel within a matched universe to make the new sample nationally representative. For example, within our In-Store Visitation//Footfall Attribution measurement product, we have calibrated a panel using the overlap with geo-location data providers to make the campaign representative and reduce noise introduce from missing identifiers due to multiple match partners.

Do you have the ability to bring in first-party data?

Yes, Samba can bring on first-party data using site tags, matches against MAID or IP data or via a third-party company (Experian, Neustar, LiveRamp). Coming soon in Q2 2022, Samba will be able to work with first-party data by also using HEMs as a match key.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

TV data is captured and provided at event level, by TV device and HH, second-by-second.

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

Samba's TV viewership data is updated daily with a 3-5-day lag to ensure completeness of brands, airings, and tagging/assignment of new ads. Digital data via the Samba Pixel is current up until the previous day.

How are your reporting details delivered?

Reporting is most commonly delivered by dashboard but can be in the form of post-campaign study (most common for outcome studies).

What is your definition of an impression or ad exposure?

Samba considers TV ads viewed with 5 seconds of continuous viewing an impression/exposure.

What is your definition of a view or viewing event?

Our minimum threshold is 3 seconds of continuous viewing to create a viewing event.

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA, and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Samba captures content viewing and ad exposure across linear TV, VOD, OTA and [select] streaming TV; additional CTV and digital exposure are captured via log integrations and pixels.

Samba captures live and time-shifted viewing up to L+14 (i.e., 15 days of data). For streaming programs, this is an evergreen catalog that always tracks. All needed data is provided for our clients to build their own unique groupings (L, L+SD, L+3, L+7, etc.) as required. We do not currently break out viewed content that is DVR'd vs viewed via VOD platforms. Currently Samba measurement excludes OTA HHs that do not own a smart TV and OOH behavior.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA, and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

See above.

How do you identify an ad? If you use a third-party, what is your source?

Samba's primary method for identifying an ad is our proprietary Harvester technology, an automated process which identifies and extract ads from the full TV broadcast content:

1. System records the channel video stream

2. Commercial extractor software detects and cuts ads out from the recorded video

3. Ads which have been identified as duplicates are being removed

4. Operator adds metadata to newly identified ads and saves them for monitoring purposes

Additionally, we also support direct uploads of creative assets and utilize Kantar to enrich local market coverage. For digital ads, Samba utilizes a pixel and logs from DSP/SSP partners

Do you provide household-level reporting?

Yes

Do you provide device level-reporting?

Yes

Do you provide person level-reporting?

No, Samba audience measurement is based on HH composition; we do offer measurement against Experian-defined audiences, and/or client-provided first- and third-party defined.

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

At the moment, Samba does not offer this, but we do regularly evaluate person-based panel solutions for eventual integration.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

We offer measurement against (HH-based) Experian age segments (0-9yr, 10-19yr, 20-24yr, 25-34yr, 35-44yr, 45-54yr, 55-64yr, 65-74yr, 75-100yr)

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned.

We offer measurement against (HH-based) Experian gender segments (Male, Female).

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned.

We offer measurement against (HH-based) Experian race/ethnic segments (White, Black, Hispanic, Asian, Other).

Do you report any other demographics beyond age, gender, race, and ethnicity, and if so, which ones and how they are assigned?

We offer measurement against (HH-based) Experian income segments.

Do you measure advanced audiences (targeted audiences)?

We can ingest and measure audiences that fall into first- and third-party defined segments that can be uploaded via our identity graph.

Additionally, as a first-party TV data collector and provider, Samba creates custom audiences for virtually all of our media clients, including but not limited to: TV screen-driven behaviors (e.g., cord cutters, light/modern viewers, gamers), ad viewership cohorts (e.g., under/un-exposed to your linear TV schedule), and programming viewing cohorts (e.g., sports viewers, pet program fans, viewers to specific groups of programs). Note that all of these audiences are available within our measurement products.

If so, what is your methodology for identifying and measuring them (include data sources)?

Our methodology for identifying and measuring advanced audiences depends on the source but all relies on matching via our Identity platform.

- **First-Party Audiences**: Clients that have defined a custom first-party audience can syndicate that audience to Samba through a variety of match keys including hashed emails, MAIDs, IP/timestamps, or leading third-party matching solutions (Experian, Neustar, LiveRamp, etc.).

- **Third-Party Audiences**: Clients can work with Samba to define a custom third-party audience target using the Experian consumer database of attributes. Alternately, if a client is working with alternate third-party consumer attributes (e.g., Acxiom, Transunion, or Adstra), Samba can work with the client and partner to onboard that advanced audience similar to a first-party audience detailed above.

- **Samba Audiences**: Samba works with the client to define audience definition within our TV viewership and ad exposure data to build the advanced audience while offering popular advanced audiences (such as cord-cutters, light/medium/heavy viewers, or sports fans) available for inclusion in all our measurement products.

Do you measure using advertisers' first-party data?

Yes, we can ingest and measure audiences that fall into first- and third-party defined segments, which can be uploaded via our identity graph.

If so, what is your methodology for onboarding?

Samba can accept audiences from partners defined by a brand's first-party data, cookies, MAIDs, IPs, and a variety of other digital match keys, directly to our identity graph. For other IDs, such as hashed emails, we can accept audiences via LiveRamp (hashed emails are on Samba's Q1 2022 Roadmap).

Other Noteworthy Items

Do you provide audience verification services?

Yes, Samba can measure targeting accuracy in post campaign reports, as well as verify audience profiles (both TV viewership and demographics) against a third-party audience

Do you provide brand measurement services?

Yes, Samba partners with third-party providers to enable brand lift / survey-based measurement. Lucid is our most common partner for this.

Do you provide incrementality measurement services?

Yes, Samba offers Causal TV Measurement which is powered by a proprietary synthetic control group methodology that was specifically designed to measure TV activation as well as digital. We are a market leader in Tune-in Measurement and offer outcomes in Online Conversions and Foot Traffic. Box Office data and other offline conversion sources are on our roadmap.

Do you provide business outcome guarantee services?

Samba has recently begun testing an incremental reach guarantee product (iCPM) that allows advertisers to pay only for impressions served to HHs who have not yet been served a linear ad. This offering is enabled by Samba unexposed audience segments and offered via Samba managed audience/media campaigns.

Do you provide multi-touch attribution or marketing mix modeling services?

Yes, Samba's standard methodology enables cross-vendor / cross-platform measurement, and we have built several MTA approaches including data-driven fractional attribution. Samba does not offer MMM currently.

What other media buying/selling solutions do you provide? Please describe.

Samba TV Audiences

- Samba's syndicated segments are first-party, curated audience targeting options based on various TV viewership behaviors. These syndicated segments are available for immediate activation on most DSPs via the LiveRamp Data Marketplace.

- Custom-defined segments (such as ad exposed/unexposed or content exposed) segments are available via LiveRamp and are portable to any distribution platform.

Samba Programmatic

- Samba data + media, pre-filtered PMPs for CTV, and cross-screen activation are available against any custom or syndicated segment.

Samba Managed Services

- Samba campaign managers are available as needed for brands and agencies that require service.

- Managed services campaigns also have access to incremental reach guaranteed audiences.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

Samba is not accredited, nor actively seeking accreditation with the MRC at this time. We recognize the importance of the MRC in the measurement ecosystem, and plan in the future to seek accreditation for key measurement/currency metrics, on which we have aligned with our brand, agency, and publisher partners.

tvsquared

TVSquared
Company Overview

TVSquared is the largest independent global measurement and attribution platform for converged TV. Its infinitely scalable ADvantage platform measures every form of TV advertising, including linear and all forms of time-shifted, cross-platform premium video viewing delivered via OTT. It powers always-on insights—from reach and frequency to incremental (deduplicated) reach, outcomes, and audience—for more than 6,000 advertisers in 75+ countries.

With clients across both the buy- and sell-sides, TVSquared has the breadth and scale to deliver always-on, identity-enabled, converged TV measurement and outcomes for advertisers of all sizes and categories—from local/regional brands and high-growth DTCs, to nationally and globally recognized companies. TVSquared was founded in 2012 and has 150+ employees with locations across North America, Europe, and APAC.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

Currently providing. TVSquared believes media buyers and sellers will determine the currency, or currencies, over time, and that multiple currencies will exist. With the industry moving toward impression-based transactions, TVSquared is in a strong position to be one of the currencies used across the horizontal ecosystem. Therefore, it has built an agnostic platform to support all types of exposure and outcomes data, as well as all IDs. This flexibility, coupled with a focus on currency-grade, impression-based data delivers highly granular and accurate analysis at scale, which can be leveraged across both the buy- and sell-sides as a transactable currency.

Cross-platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services— linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

TVSquared measures the reach and frequency of premium video content anywhere, anytime and on any device.

Measuring incremental (unduplicated) reach across delivery platforms is a major component of our offering. For example, when linear and streaming campaigns are running concurrently, it uses IP address matching to map the impression datasets and detect any overlap in exposure along with the unique reach of each. This allows TVSquared to identify a percentage of households that have been served with streaming and linear impressions across any platform, and those that have been exposed to both.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

TVSquared's current approach focuses on measuring reach and frequency, plus incremental (de-duplicated) reach across all screens and devices served within the home. TVSquared is in the process of extending its methodology to comprehensively cover OOH measurement.

In your view, what differentiates your TV measurement offering from other competing measurement services?

TV measurement and attribution are in TVSquared's DNA, and have been a primary focus from the start, offering fully independent, always-on proof of performance and transparency across the ecosystem. Built as a software platform, TVSquared's technology is fully automated, designed to handle massive scale, while delivering real-time insights that meet the current and future state of TV – covering all forms of premium video content and designed with the flexibility to process any first- and third-party datasets. With complete workflow automation, TVSquared's platform has rapidly processed data and on boarded more than 1,000 new advertisers in a single day. Today, TVSquared offers the only global cross-platform solution that measures TV effectiveness in more than 75 countries and growing.

What % of your annual revenue is measurement? (If less than 100% please provide brief description of other key revenue drivers.)

100%

Who are your measurement clients and what % of your measurement business do they represent?

As a private company, we are not able to divulge specific revenue breakdowns.

Universe Assumptions

How many TV HHs do you collect data from?

60M US and 150M globally

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

TVSquared's approach differs across linear and streaming. For linear, it depends on the impression dataset being used. For example, TVSquared's preferred data partner in the US is Inscape, which offers the largest single source of privacy compliant, opt-in smart TV data in the market, currently sitting at 18M+ HHs. TVSquared uses third-party reported census demographics in the region being measured (either national or regional/local) as the universe. In other markets, and depending on clients, it may bring in other types of household-level data from smart TV and set-top-box providers.

For OTT, it captures 100% of the universe through our integrations with direct publishers and relevant ad server(s).

Do you use weighting or sample balancing?

Yes

If yes, please briefly describe your methodology.

TVSquared's methodology takes account of the expected number of TVs in any household and applies a logarithmic formula to adjust for the fact that not all households will have a relevant TV (i.e., one that captures viewership). Demographic and segmentation data from Experian is appended to viewing households. TVSquared calculates and appends a "demographic weight" to each household for the combined impression dataset in each market. This indicates how over- or under-represented the demographic (age, gender, HHI, etc.) is in the populated household set vs. the census for that market.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

Thanks to the inherent flexibility of the ADvantage XP platform, and its continually expanding data partner ecosystem, TVSquared is able to work with a number of identity resolution partners including Experian, Blockgraph, and others.

TVSquared has traditionally employed a variety of approaches to refine household and device identification. For example, working with Blockgraph for its secure peer-to-peer identity sharing platform supports the industry's push for a common identity standard across TV. TVSquared leverages Blockgraph's Identity Operating System, which is purpose-built for the converged TV industry, with fully deterministic, cross-platform identity data.

In environments where subscriber IDs, IDFAs, or other PII identity resolution exist, TVSquared has utilized Experian and Adobe. Where no identity solution is available, such as cookie-less/non-authenticated CTV, TVSquared supports privacy-compliant, hashed IP addresses for pseudo-identity.

Which identity providers do you work with?

Current partners include Experian, Blockgraph, and Adobe; TVSquared will continue to test and work with others including UID 2.0, OpenID, plus more.

How do you model missing device IDs and IP addresses?

TVSquared runs a range of deduplication and filtering processes on the impression dataset, including filtering out missing IP addresses. This ensures a clean dataset for modeling and extrapolation.

Do you have the ability to bring in first-party data?

As part of our flexible "BYOD" (Bring Your Own Data) ETL framework, TVSquared can ingest a wide range of both first- and third-party data—from first-party data, to response data from advertiser websites/apps, to proprietary audience segments.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

TVSquared provides impression-based metrics for ad exposure.

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics.

TVSquared's platform offers always-on insight that can be accessed by users at any time. Metric reporting depends on the specific metric and datasets being used, but insight is typically refreshed in the platform daily. TVSquared also has a range of export capabilities.

How are your reporting details delivered?

The ADvantage platform is highly flexible, and all views and reporting can be configured to suit specific requirements.

What is your definition of an impression or ad exposure?

TVSquared's measurement approach counts all impressions where a household has been exposed to an ad for at least one second.

What is your definition of a view or viewing event?

N/A

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA, and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

Content measurement is on the roadmap for 2022.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA, and OOH (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

TVSquared provides total impression delivery, reach, frequency, and unduplicated reach for all streaming and linear TV advertising.

How do you identify an ad? If you use a third-party, what is your source?

For linear, TVSquared typically uses a combination of post logs, its proprietary ACR, and third-party impression data (from STBs/smart TVs). For streaming, it uses a direct integration with the ad server(s).

Do you provide household-level reporting?

Yes

Do you provide device-level reporting?

On roadmap

Do you provide person-level reporting?

On roadmap

If you provide or estimate person-level viewing (i.e. who is watching on the TV), please describe the main data sources or methodology you use.

N/A

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

TVSquared ties audience demographics (including age and gender plus advanced audience segments) to measurement and outcomes, delivering a wide range of insights, including reach and frequency, unduplicated audience reach and performance. Granular insights provide intel on the audiences most likely to convert, creative performance tied to audience segments and look-alike capabilities.

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned.

Yes, via Experian. TVSquared also has the ability to ingest first-party audience segments for measurement.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned

TVSquared has access to audience breakdowns by race/ethnicity, which is broken down by White, Black, Hispanic, and Asian-American.

Do you report any other demographics beyond age, gender, race, and ethnicity and if so, which ones and how they are assigned?

Yes, via Experian MOSAIC and advanced audience segments.

Do you measure advanced audiences (targeted audiences)?

TVSquared measures advanced audiences through third parties (i.e., Experian) and also has the ability to ingest first-party audience segments (i.e., specific targeted segments, lookalikes, etc.).

If so, what is your methodology for identifying and measuring them (include data sources)?

TVSquared's modeling can be configured to apply third-party household-level demographic segment data from one of its audience data partners. This enriches campaign delivery and outcomes insight with details on which audiences (P2+) ads are served to and which audiences are responding.

TVSquared does this by configuring its measurement approach to use an identity-resolution solution from an identity data partner. This is then used to map the impression and response data to the demographic segment data.

Do you measure using advertisers' first-party data?

Yes, TVSquared has this capability.

If so, what is your methodology for onboarding?

ADvantage XP is designed to rapidly ingest a wide range of both first- and third-party data using TVSquared's highly mature ETL framework. In environments where subscriber IDs, IDFAs, or other PII identity resolution exist, TVSquared has utilized data partners such as Experian and Adobe. Where no identity solution is available, such as cookie-less/non-authenticated CTV, TVSquared supports privacy-compliant, hashed IP addresses for pseudo-identity.

Other Noteworthy Items

Do you provide audience verification services?

No

Do you provide brand measurement services?

Yes, TVSquared's platform calculates brand lift metrics.

Do you provide incrementality measurement services?

Yes, TVSquared offers incremental measurement for streaming beyond linear and across individual streaming platforms and publishers.

Do you provide business outcome guarantee services?

Yes, TVSquared's platform capabilities can be leveraged for business outcome guarantees.

Do you provide multi-touch attribution or marketing mix modeling services?

Yes, for its own internal MTA, TVSquared employs a time-decay attribution model, which evaluates the impact of every touchpoint leading up to an outcome, with more credit given to exposures closest to a response. In addition, TVSquared's data are also regularly fed into brands' own MTA and MMM solutions.

What other media buying/selling solutions do you provide? Please describe.

Through TVSquared's ADvantage platform, partners can identify which audiences and households are responding to advertisers' campaigns, and analyze media performance across creative, day of week, daypart, and programming. Segments and households for targeting can then be used to inform activation, while performance insights across media dimensions can inform future campaign optimizations and schedule changes.

TVSquared's Predict module, which is built into the ADvantage XP platform, is an advanced scenario-modeling capability that considers both performance and costs to generate a baseline, such as the average CPR for a specific network or program. It uses this to generate optimization recommendations and can also be used to quickly and easily scenario model the impact of any planned changes to the buy. Predict recommendations can be easily exported.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

TVSquared is seeking accreditation.

VideoAmp
Company Overview

VideoAmp is a media measurement and optimization software company creating a more valuable and data-driven ecosystem that redefines how media is valued, bought, and sold.

VideoAmp works with hundreds of brands, agency media holding companies and the leading TV companies, creating a more data-driven ecosystem. Their platform includes planning, measurement, optimization, workflow automation, and currency capabilities. VideoAmp's cross-platform audience measurement includes deduplicated reach and frequency measurement on age/gender audience demographics or on any advanced first- or third-party audience. VideoAmp also provides multi-touch attribution and lift measurement across traditional TV, streaming video, and digital media against clients' desired business outcomes.

VideoAmp integrates into dozens of the advertising systems of disconnected media platforms to create a privacy-safe and unified view of audiences. Unlike legacy measurement methodologies which are primarily reliant on small surveys, VideoAmp leverages large scale impression-level data directly from these systems. VideoAmp uses this data and sophisticated data science methodologies to create a source of truth that is a more accurate view of media consumption and engagement. This creates new use cases and unlocks additional value for the advertising industry, such as more accurate media ratings, cross-platform deduplicated audience views and the ability to connect ad exposures to an advertiser's sales. Additionally, consumers benefit from the platform's increased rigor around privacy standards and ability to minimize overly repetitive advertising to consumers across different media platforms.

About Us

VideoAmp is a media measurement and optimization software company creating a more valuable and data-driven ecosystem that redefines how media is valued, bought, and sold.

Our platform automates advertising workflows, deduplicates audiences across traditional TV, streaming video, digital media, and walled gardens, and connects media exposures to an advertiser's sales. By unlocking new value for the entire ecosystem, our platform allows the world's largest advertisers, agencies, and publishers to align on VideoAmp's independent measurement as a new media currency to transact against.

We are transforming a 100-year-old industry by powering a more effective three-way value exchange that results in increasing the return on media investment for advertisers, increasing revenue for publishers, and providing a better viewing experience for consumers.

Fast Facts

- Founded: 2014

- Employees: 350+

- Offices: LA, NYC, Chicago, Boston, Denver & Boulder

- Markets: US

- Total Revenue: VideoAmp does not disclose financial statements or revenues as we are a privately held firm.

Measurement Offerings Description

Currency Focus: How do you see your company providing a "currency-grade" cross-platform premium video measurement solution?

By providing software that makes large-scale datasets interoperable and representative while enabling automation for planning, workflow, and optimization, we can unlock more value for buyers and sellers than legacy systems.

VideoAmp is currently providing a currency-grade cross-platform premium video measurement solution to networks, agencies, and brands in the market. This solution is currently under evaluation or in use by six of the top six agency holding companies as well as ten of ten leading TV companies within the United States in a currency context. One of our core objectives in 2022 and beyond is to ensure all of our data and products support an increased share of currency use cases for both buyers and sellers, including meeting data needs and making sure all the infrastructure/pipes needs are addressed. We have extensive data to support that by transacting using the VideoAmp currency solution instead of the legacy TV measurement providers, buyers and sellers can unlock significantly more value by increasing return on ad spend for advertisers and increasing yield and revenue for networks.

Cross-Platform Capabilities/Gaps: Are you currently able to measure unduplicated reach and frequency across the US market, covering all services—linear, streaming services, digital, VOD, OTA, and OOH? If not, what is the gap?

Yes, VideoAmp can measure unduplicated reach and frequency across the US market for the following services: linear, streaming services, digital and OTA.

If there is a gap, when do you envision being able to provide this kind of measurement and what could NBCU do to help?

We currently do not account for out-of-home viewing being different from "in the home viewing," defined as place-based viewing (e.g., restaurants and bars). This is on our roadmap to include these types of behavioral differences in 2023.

In your view, what differentiates your TV measurement offering from other competing measurement services?

We differentiate by our mission and culture.

Our mission focuses on redefining how media is valued, bought, and sold to unlock new value for the entire ecosystem. We do not believe standalone data or measurement systems will create higher return on ad spend for advertisers and revenues for media sellers. Having systems that just tell stories about past performance without clear decisions on what to do next creates no value for the ecosystem. We have developed software systems that are focused on increasing return on ad spend for advertisers while simultaneously increasing the revenue for media sellers with automated workflows and independent/neutral optimization capabilities, in addition to baseline measurement and currency capabilities. We believe the industry needs higher standards and deserves better. Accurate measurement and a smarter currency are table stakes, and a feature of a broader industry solution. Creating a healthier, more valuable, and data-driven ecosystem where everyone wins is the goal.

We believe culture is the x-factor and most important influence on a company's ability to execute. We believe a company is actually just a group of people—not its product, software, or data. People build our products, sell our products, and service our clients. We believe if we focus on the most fundamental atomic unit of a company—its people—we will gain the greatest operational leverage to achieve our mission.

Our people have a collected mindset that it is our job to add as much value as possible to our clients. We work together to create an environment that has the highest probability to influence our behavior to add as much value as possible to our clients; this is our definition of success for our culture. We have found over the years that our playbook to do this is by narrowing focus, elevating intensity, moving faster, and raising standards.

Narrowing focus means we are here to only do one thing—add value to our clients on our mission; there is nothing else we will ever do. We move faster by removing our limiting beliefs and challenge ourselves to do more with less every day. If we think something will take four weeks to get done for a client, we tell ourselves "let's try to do it in one week." Sometimes this works, sometimes it doesn't, but we actually surprise ourselves half the time and are able to overpromise and overdeliver for our clients. We believe elevating intensity creates more pressure and urgency. This forces us to think differently and more creatively, allowing us to leave with a better outcome. We raise standards in everything we do every day. We eliminate the middle ground and force everything into either "insanely great" or "total shit." We hold each other accountable every day to the courage to operate this way because this is how we can create more value for our clients. This forces us to exponentially grow and live outside of our comfort zones.

We are thankful that our focus on culture since VideoAmp was founded in 2014 has been evergreen. Most recently, companies like AdAge have validated our approach by ranking us the #1 place to work in our industry in 2022 (see here).

For more details on our mission and culture, see our manifesto here: https://manifesto.videoamp.com/

What % of your annual revenue is measurement? (If, less than 100% please provide brief description of other key revenue drivers.)

VideoAmp does not disclose financial statements or otherwise provide indicators on our revenue as we are a privately held organization.

Who are your measurement clients and what % of your measurement business do they represent?

VideoAmp does not disclose financial statements or otherwise provide indicators on our revenue as we are a privately held organization.

Universe Assumptions

How many TV HHs do you collect data from?

We collect data from all TV households in the US (roughly 120 million households) on digital and streaming platforms. For linear TV, we use a footprint of 39 million households from a combination of Smart TV data from the manufactures and Set-Top-Box data from MVPDs to project to the remainder of the US census.

How many TV HHs do you model to estimate viewing in and what is the source of the universe estimates in your modeling?

Yes, we project linear viewership to the entire US universe (roughly 120 million households), from a footprint currently encompassing about 39 million households. We measure digital and streaming data from our programmer and platform providers directly and measure 100% of the TV households in these environments.

Do you use weighting or sample balancing?

Weighting

If yes, please briefly describe your methodology.

Naturally this is an over-simplification, but here is a summary:

1. Estimate stream-only HHs.

2. Designate VideoAmp HH IDs (some from the smart TV footprint; but most out-of-footprint) to serve as stream-only HHs in our projections; layer in the number of VideoAmp HH IDs equivalent to the number of stream-only HHs, and effectively give each a weight of 1. (This assures that, e.g., we accurately represent the incremental reach accruing from adding digital to a linear schedule.)

3. Estimate OTA HHs.

4. Use smart TV data to understand the difference in consumption of broadcast sources between OTA and STB HHs.

5. Weight the STB footprint by demography (within geo) to create a set of viewership censuses for STB HHs (i.e., network levels for STB HHs).

6. Adjust the targets for OTA HHs by applying the results from step 4 above to the STB levels (generated in step 5) for broadcast sources, for the OTA portion of the reporting sample. (Essentially, the smart TV footprint provides an empirical source for understanding how much more broadcast TV the OTA universe consumes than the STB universe.)

7. Reweight the entire footprint by demographics, using these STB network levels as universe targets; this works as-is for STB HHs (note again that stream-only HHs are left aside, and each carry a weight of 1, with no linear tuning. They effectively reduce the universe of HHs we project linear tuning to.)

8. Weight the smart TV OTA pool of HHs to represent the OTA universe, using the adjusted network targets. This assures that (a) OTA HHs get the right weight; and (b) the increased use of broadcast TV in OTA HHs is represented in the projections.

Identity Solution

What is your solution for identity resolution (i.e., how do you link devices, persons, and households)?

VideoAmp has its own proprietary identity graph that is created from multi-sourcing a variety of industry leading identity providers. We improve the accuracy of our identity graph through data science techniques that learn from signals across multiple sources to create a currency-grade identity backbone truth set. Our identity solution is interoperable with all major identity providers such as Experian, TransUnion, LiveRamp, OpenID, and more.

Which identity providers do you work with?

VideoAmp works with Experian, TransUnion, LiveRamp, OpenID, and others as identity providers. We also have integrations with a variety of DMPs.

How do you model missing device IDs and IP addresses?

We use our full footprint of deterministic data to measure all matched impressions and use this data to create probabilistic models to cover any gaps of missing data in the logs such as device IDs or IP addresses.

Do you have the ability to bring in first-party data?

Yes, across all major DMPs, CDPs, identity providers, and direct connections.

Reporting Details

Granularity: At what granularity are you able to report metrics (i.e., second-by-second, minute-by-minute, for a single show)? Please note exceptions, if any.

VideoAmp is able to provide second-by-second metrics for any given program.

Speed: How rapidly are you able to report metrics (i.e., real time, next day, next week)? Please specify your delivery for cross-platform metrics

We can provide metrics for linear, digital, streaming, and cross-platform the next day.

How are your reporting details delivered?

Our reporting can be delivered by self-service software, APIs, clean rooms, exportable .CSVs from software, custom data visualization dashboards, and managed service reporting.

What is your definition of an impression or ad exposure?

We support any custom definition of an impression or ad exposure for our clients to choose their own standards.

What is your definition of a view or viewing event?

We support any custom definition of a view or viewing event for our clients to choose their own standards.

Do you currently measure and report viewing of programming content for linear, streaming services, digital, VOD, OTA, and OOH (i.e., program ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

We provide program ratings for linear, digital, streaming, and OTA. We do not include program ratings for OOH. This is on the roadmap for 2H 2022 or 2023.

Do you currently measure and report viewing of ad content for linear, streaming services, digital VOD, OTA, and OOH? (i.e., ad ratings)? Please indicate if gaps exist. If not currently but planned, please indicate timing.

We currently measure ad ratings for linear, streaming, VOD, digital, and OTA/linear. We will include OOH in 2H 2022 or 2023.

How do you identify an ad? If you use a third-party, what is your source?

We have a variety of options to identify an ad. For linear, linear VOD, linear addressable, and linear OTA, we ingest the ad schedules directly from the programmers and platforms. We also support any arbitrary custom ad schedule from third-parties such as Kantar, Gracenote, etc. We also can use Automatic Content Recognition technologies from the smart TV OEMs directly to create a linear schedule. For digital, we integrate into census level log data directly from the publishers and platforms on an impression-level basis. These integrations can be done via secure computing, clean rooms, direct server-to-server, or pixel integrations.

Do you provide household-level reporting?

Yes, with technological and privacy-safe secure computing and clean room infrastructures that ensure all legal, business and privacy concerns are guaranteed (i.e., aggregation, anonymization, etc.)

Do you provide device-level reporting?

Yes.

Do you provide person-level reporting?

Yes.

If you provide or estimate person-level viewing (i.e., who is watching on the TV), please describe the main data sources or methodology you use.

VideoAmp's personification involves deployment and integration of the following assets:

- Observed tuning across sets for all households in the VideoAmp footprint

- Rosters providing household members and demographic composition of each household

- A subset of footprint households which are comprised of only one person, wherein the person's demographics and tuning are thus known

- Data science

- A panel of households with persons-level viewing to serve as a training set

A model is trained to predict the probability of individual viewership of an event given HH-level viewing and the composition of that household.

Do you measure and report on the age of the viewing audience? If so, please describe range and granularity.

Yes, we do measure and report on the age of the viewing audience.

Range: Persons 2+

Granularity: standard building block slices: 18-24; 25-34; 35-44; 45-49; 50-54; 55-64; 65-74; 75-84; 85+

Do you measure and report on the gender of the viewing audience? If so, please describe how gender is assigned

Yes. We license a variety of demographic enrichment services to multi-source and identify the most accurate demographic information possible across all the leading providers for currency grade accuracy.

Do you measure and report on the race/ethnicity of the viewing audience? If so, please describe how race/ethnicity is assigned.

Yes, we measure and report on the following race/ethnicity buckets: Black, Hispanic, American Indian, Asian, and White. We license a variety of demographic enrichment services to multi-source and identify the most accurate demographic information possible across all the leading providers for currency-grade accuracy.

Do you report any other demographics beyond age, gender, race, and ethnicity and if so, which ones and how they are assigned?

Yes, additional demographics attributes we report on include: Education, Ethnicity, Income, Homeowner Type (i.e., Renter or Owner), Length of Residence, Marital Status, Occupation, and Presence of Children.

We license a variety of demographic enrichment services to multi-source and identify the most accurate demographic information possible across all the leading providers for currency grade accuracy.

Do you measure advanced audiences (targeted audiences)?

Yes.

If so, what is your methodology for identifying and measuring them (include data sources)?

An advanced audience is any arbitrary set of IDs defined by a client. Since we have integrations into all major identity, DMP, and CDP providers, we do a direct match into the VideoAmp identity spine. From here, it moves into the measurement methodology flow.

Do you measure using advertisers' first-party data?

Yes.

If so, what is your methodology for on-boarding?

An advanced audience is any arbitrary set of IDs defined by a client. Since we have integrations into all major identity, DMP, and CDP providers, we do a direct match into the VideoAmp identity spine. From here, it moves into the measurement methodology flow.

Other Noteworthy Items

Do you provide audience verification services?

VideoAmp partners with third-party audience verification providers for services like viewability, fraud, attention, etc., to provide maximum flexibility to leverage the metrics that matter most.

Do you provide brand measurement services?

VideoAmp partners with third-party brand measurement providers to provide maximum flexibility to leverage the metrics that matter most.

Do you provide incrementality measurement services?

Yes, VideoAmp's incrementality (lift) measurement methodology is designed to identify what number of conversions happened due to an advertisement versus conversions that would have happened without an advertisement.

Do you provide business outcome guarantee services?

This is currently in beta.

Do you provide multi-touch attribution or marketing mix modeling services?

Yes, we provide both multi-touch attribution and marketing mix modeling since our acquisition of Conversion Logic.

What other media buying/selling solutions do you provide? Please describe.

We provide software for media planning, investment optimization, workflow automation, and sell-side inventory optimization.

MRC Accreditation Status

What is your MRC accreditation status (i.e., specific accreditation status, seeking accreditation, no plans for accreditation)?

Not commenced