

TV DECONSTRUCTED: The Latest from the DASH Study

Spring Wave 2023

The ARF DASH TV Universe Study is a nationally projectable enumeration study of consumer behavior in TV and digital media. Conducted annually in two waves, DASH records in detail how US households connect to and consume TV, use digital devices, and interact with and share streaming media and ecommerce accounts. To produce a reliable and cost-efficient standard for the industry, the ARF partners with NORC at the University of Chicago to conduct DASH and makes data licenses available to everyone in the industry for a fraction of the cost of the study itself.

The ARF recently released the data from the first wave of the 2023 study. The Spring wave captured responses from 6,219 adults

in the period April-June. The survey included the “infrastructural” questions that are core to DASH, but also broadened coverage of OOH and FAST viewing; expanded the menu of streaming offers to include new AVOD tiers from Netflix and Disney+; and added a battery on in-home viewing designed to generate stronger modeling signals.

While usage of DASH has expanded to include advertising and content strategy, data calibration remains the dominant use case. This report will use the Spring wave 2023 data to highlight and illustrate some of the many ways DASH can be used to minimize bias in big data sets.

Data Calibration and Modeling

Big data streams from set-top boxes and smart TVs allow deep and often daily examination of viewership, but introduce new limitations and biases into what is already a massively complex situation. Major measurement, media and identity companies use DASH data to calibrate their big data sets and to model household demographics and persons’ viewing.

A granular survey study, DASH measures many of the signals that measurement companies collect electronically, allowing users to model data not contained in those big data sets.

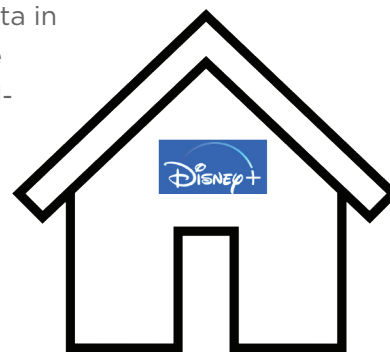
Household Characteristics

Demographic Assignment

Most companies assign demographic profiles to what CIMM calls Machine Level (ML) households, meaning those providing ACR or return path data. The demographic assignments are based on third-party data matched to IP or offline addresses. The trouble is that demographic data varies in accuracy, especially for young and more transient persons. DASH can help.

Biases in the third-party assignments can be modeled by matching the third-party data to DASH and modeling the limitations of the third-party data.

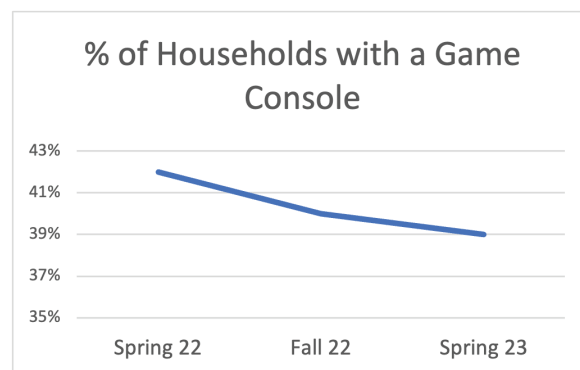
Another probabilistic approach is to extract viewing data in DASH by household demographic composition and use that data to assign reliability scores to each of the third-party data points associated with ML households. For example, the DASH 2023 Spring wave shows that 28% of US households have a child under the age of 18, but the conditional probability of a household with a Disney+ subscription having a child is 43%. (The corresponding figure from DASH 2022 was 45%, which may reflect changes in the Disney+ subscription base over the period.) The entire portfolio of subscription services, each with its own skews, could be used to refine these conditional probabilities further, either as a check against available third-party data or to fill in gaps where none exists.



**Probability of a Household with Child
P (Child HH | Disney+) = 43%**

Household Device Graph

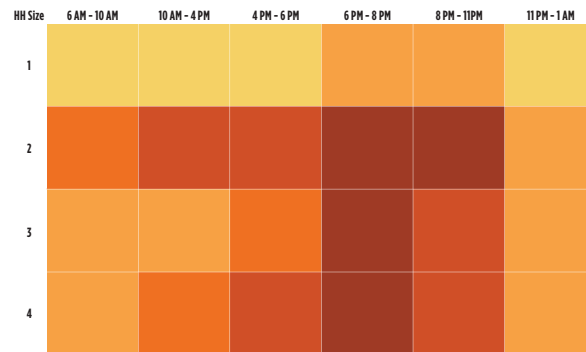
As a substantial number of younger adults stream and watch linear TV on devices, householding the devices becomes essential. DASH can be used to model devices in the household and project the likelihood they are used to watch video. For example, consider game consoles, many of which are used to access live TV. DASH data not only shows the household penetration of game consoles, which has fallen from 42% in the Spring of 2022 to 39% in the Spring of 2023, but who in each household owns and uses those devices to watch TV. DASH data is released in two waves a year, enabling more accurate modeling and tracking of fast-moving media indicators.



Viewing

Viewer Assignment

Among the most frequent uses of DASH is assigning household viewers, which have been projected through third-party data or modeled, as discussed earlier, to specific programming, or “ML tuning events.” Assigning the number of persons watching together (co-viewing) is a common application in this area. This heat map, which shows co-viewing levels by daypart, illustrates the seemingly paradoxical fact that more Prime co-viewing goes on in two-person households than in larger ones – a dynamic that has not changed in the three years we have conducted DASH. Kids in those larger households tend to head off to their own rooms and their own devices after dinner.

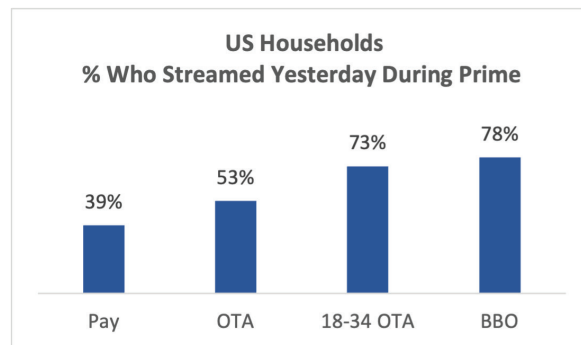


Co-viewing By Daypart and Household Size

Unmeasured Segments

DASH provides data to estimate viewing in segments unmeasured and undermeasured by ML data.

For one, viewing on TV sets receiving signals by antenna (OTA) is not well represented by ML data, though some TV manufacturers (OEMs) can report OTA viewing. Local and network broadcast viewing is much more likely on OTA sets than on TVs connected to other sources. That said, though, the latest DASH data shows that OTA households were more likely than Pay households to stream during Prime. The DASH data also shows that young OTA households stream almost as much as households connected to TV signals by broadband internet only (BBO).



Further, viewing through virtual MVPDs, like YouTube Live and and Hulu + Live, also eludes ML detection to some extent. Among the platforms, Roku provides vMVPD viewership data to measurement companies, but many others do not.

Similarly, viewership on walled MVPDs and walled OEMs (providers that do not share their data outside their networks) leads to gaps in ML data that need to be filled. For example, viewership on walled MVPDs favors cable news and sports, and the geographic footprint of the service also impacts viewing.

Even the location of TV sets creates biases and gaps in ACR data. The table below shows the distribution of room location for two brands of TV sets, one of which, Brand A, makes ACR data available. Brand A sets tend to be concentrated in rooms in which coviewing is high. In contrast, Brand B, which does not make its data available, is more heavily represented in other rooms, such as kitchens and kids' bedrooms, where program selection may be much different than in the main viewing rooms.

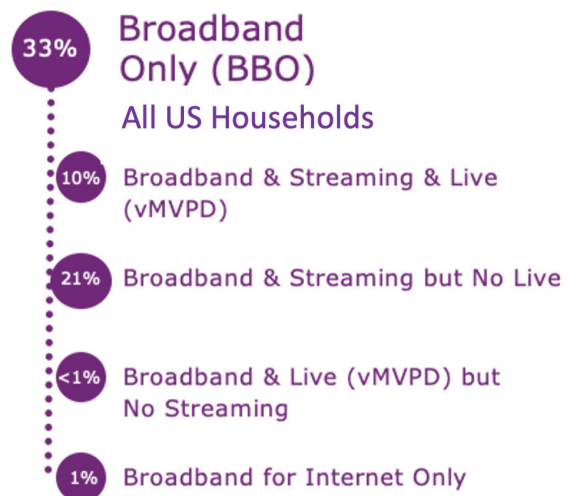
Location Across All Sets of this Brand	Living, Den & Media Rooms	Master or Primary Bedroom	Other Bedrooms	Other Rooms
Brand A (ACR Available)	49%	24%	12%	15%
Brand B (ACR Not Available)	30%	20%	22%	28%

These dynamics, and many others, complicate accurate modeling of viewership, making a granular universe study like DASH an essential tool of modern measurement.

Media Universe Estimates

Modes of Reception

The industry classifies households broadly into three modes of reception - OTA, Pay and BBO - but the reality is more complex for those needing to measure viewership accurately. Four distinct subgroups comprise the 33% of all US households classified as BBO in the Spring wave of DASH 2023. More importantly, a third of BBO households receive linear TV, through vMVPDs. DASH provides the universe estimates needed to weight households with TV sets and without TV sets (device only) to live TV viewing and other critical variables.

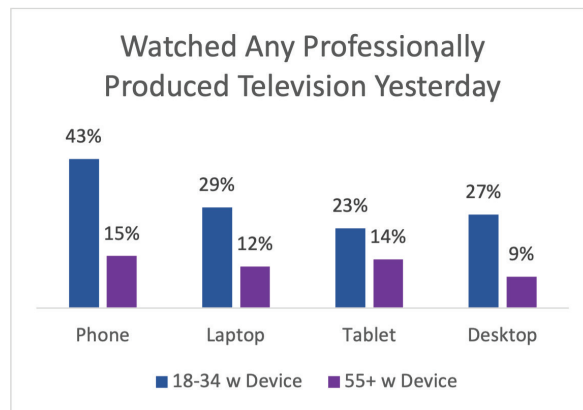


For perspective, DASH 2022 estimated that 30% of all US households were BBO, with about a third also receiving linear through a vMVPD.

Device Usage

Viewers increasingly watch TV, both streaming and live, on devices.

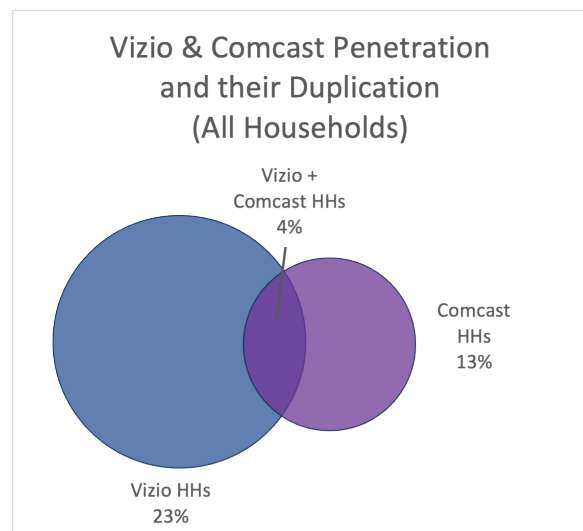
In general, young adults are much more likely to watch on their devices, but the penetration levels vary by device, mode and user demographics, and viewing on devices is by no means confined to the young. DASH can be used to estimate differences in viewing across devices and adjust data as needed.



Duplication

Measurement companies may have tuning data from an MVPD and ACR data from an OEM for the same household. DASH can provide an estimate of the duplication.

For example, Vizio Inscape (ACR) makes a large portion of its ML data available, as does Comcast (RPD). DASH measures whether every TV set in a household is a Vizio, has Comcast access, or both, producing a very accurate picture at the household level. The latest wave of DASH data shows that roughly 30% of Comcast households had a Vizio television, and about 17% of Vizio households had Comcast.



In Conclusion

The ANA design for Cross-Media Measurement (CMM) calls for the use of a panel to “calibrate” big data sets. The MOC/JIC and the MRC have published standards for panels to be used for calibrating ML data. The DASH team is happy to help support any of its clients or interested parties in understanding how the granularity of DASH can be used to minimize bias.

To discuss DASH, its contents, use cases and licensing opportunities, contact [Paul Donato](#), Chief Research Officer of the ARF, or [Jim Meyer](#), General Manager of DASH, at DASH@thearf.org. You will find other DASH publications and study details on the [DASH website](#).