



DV AUTHENTIC ATTENTION[®]



**POWERING MEDIA QUALITY
& EFFECTIVENESS**

DoubleVerify Is a Leading Software Platform for Digital Media Measurement, Data and Analytics.

DV's mission is to serve as the definitive source of transparency and data-driven insights into the quality and effectiveness of digital advertising for the world's largest brands, publishers and digital ad platforms. Since 2008, DV has helped hundreds of Fortune 500 companies gain the most from their media spend by delivering best-in-class solutions across the digital advertising ecosystem, helping to build a better industry.

Challenges of Existing Performance Measurement Solutions

DV Authentic Attention® addresses a brand's dilemma in performance measurement and actionability. Current tools are either fast but simplistic — with metrics like viewability and click-through-rate (CTR), or sophisticated but slow — with data reported post-campaign. **These shortcomings hamper an advertiser's ability to take meaningful action to impact campaign performance.** DV Authentic Attention® is designed to provide actionable, near real-time data correlated with digital advertising effectiveness, giving global brands clarity and confidence in their digital investment while relying upon privacy-friendly tools.

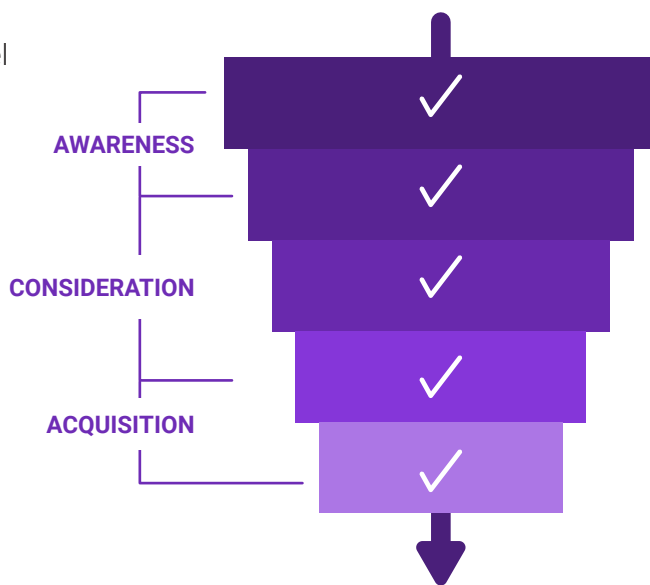
DV Authentic Attention® provides advertisers with industry leading digital media measurement that is immediate, predictive and actionable — contributing to superior campaign performance.

DV Authentic Attention® provides deep impression-level insights and actionable data across marketing goals — from building brand awareness to driving acquisition. For a global FMCG company, DV Authentic Attention® delivered:

- +9 percentage point in Brand Favorability
- +8 percentage point lift in Brand Consideration
- +5* percentage point lift in Purchase Intention among primary target audience

For a global software company, DV Authentic Attention® delivered:

- 32% increase in conversion rate



DoubleVerify's Authentic Attention®

The rich DV Authentic Attention® dataset provides the basis for dynamic campaign optimization, unlocking deep insights and enabling more effective media and creative optimizations.

DV Authentic Attention® — 3 Key Indices

DV Authentic Attention® evaluates over 50 data points on the exposure of a digital ad and consumer's engagement with a digital ad and device — in near real-time.

For Exposure, DV Authentic Attention® evaluates an ad's entire presentation, quantifying its intensity and prominence through metrics that include viewable time, share of screen, video presentation, audibility and more.

For Engagement, DV Authentic Attention® analyzes key user-initiated events that occur at the device or ad level, including user touches, screen orientation, video playback and audio control interactions.

Three key indices convey actionable insights into Exposure, Engagement and overall performance — and benchmark performance relative to DV's internal 28-day rolling average across all advertisers (see appendix for details).

This granular analysis of media performance provides advertisers with actionable insights intended to drive campaign optimization strategies and maximize effectiveness.



The Attention Index is a holistic measure of the 50+ data points making up the Engagement and Exposure indices

EXPOSURE INDEX

Measurement of **Ad Presentation**

The Exposure Index measures the ad presentation on the device, such as time in view, ad share of screen, video quartile performance and more.



Viewable
Time



Video
Presentation



Ad Share
of Screen

ENGAGEMENT INDEX

Measurement of **User Interaction**

The Engagement Index measures user interactions on the device and ad level, such as ad, device, and browser touch events, scroll events, video playback and much more.



User
Presence



Ad
Interaction

DV Authentic Attention® - Driving Brand Lift Case Study

Highlights

This case study highlights the impact that DoubleVerify's Authentic Attention® Exposure and Engagement measures had on campaign effectiveness. Working with Mondelez and Kantar, we found that DV Authentic Attention® provided actionable data correlated with campaign outcomes.

High-Exposure impressions:

- Drove 9pp lift in brand favorability, 8pp lift in brand consideration - key campaign KPIs
- Increased unaided brand awareness by 6 percentage points, brand favorability by 14 percentage points, and purchase intent by 5* pp with the household's primary grocery shopper - a key target audience segment
- Boosted brand consideration by 10 percentage points with non-purchasers, a segment to convert to purchasers

These findings validate that DV Authentic Attention® can be effectively employed by brands and agencies to maximize media performance.

Research Hypothesis

DoubleVerify believed that DV Authentic Attention® would provide actionable data correlated with campaign performance.

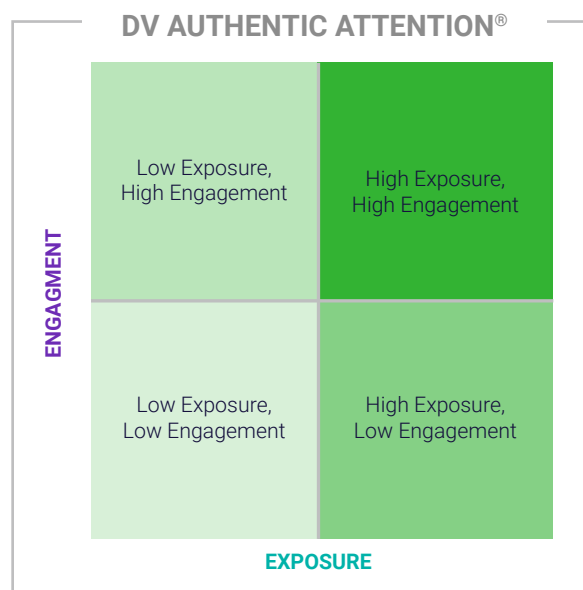
Background and Methodology

Mondelez International launched a cross platform display advertising campaign (see appendix for details) to increase brand awareness and brand consideration of a snack brand within its product portfolio.

DoubleVerify proposed adding a Kantar Brand Lift Insights study (see appendix for details) to the campaign to measure its impact on branding KPIs. DV requested that the study results be reported by DV Authentic Attention® quadrants — plotting DV Authentic Attention® Exposure and Engagement dimensions. This reporting schema would:

- **Reveal the impact Exposure and Engagement** had on the key branding metrics Mondelez was looking to influence
- **Validate that DV Authentic Attention® data** are correlated with lift on key branding KPIs

The Kantar study, a survey-based control/exposed research design, was added to the campaign and results were reported by DV Authentic Attention® quadrants.



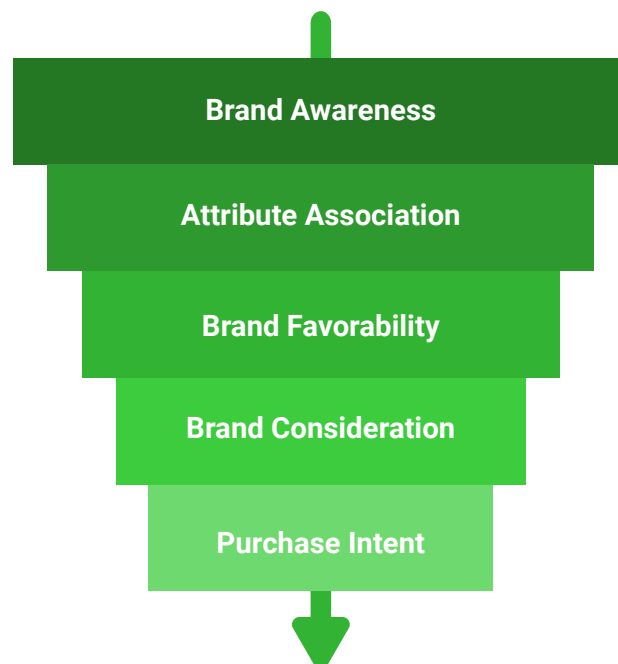
DV Authentic Ad™ Analysis — Overall Impact

Impact of DoubleVerify's Authentic Ad™

Mondelez's media planning agency employed DV's Authentic Ad™ to validate each ad impression and to optimize the campaign to the highest quality, viewable placements. These efforts yielded great success, with the campaign significantly outperforming DoubleVerify's CPG benchmarks for Authentic rate and average time-in-view.

Compared with the control group, Authentic Ads™ provided a positive lift for mid-funnel Brand Attribute Association measures, as expected: "Is convenient" (+8 points), "Tastes great" (+6 points) and "brand claim" (+5 points).

There was also a positive lift for Brand Favorability (+7 points) and Brand Consideration — "Is a brand for me" (+6 points). Amongst the highly important primary household grocery shopper segment, DV Authentic Ads™ provided even greater lift across the purchase funnel.



DV Authentic Ads™ had a positive impact on the performance of Mondelez's campaign, as measured by incremental lift on key branding KPIs.

In addition, audiences exposed to DV Authentic Ads™ exceeded the Kantar MarketNorms® (for the CPG food category) in twice as many brand metrics measured, as did the campaign overall.

While the DV Authentic Ad™ qualifies impressions in terms of media quality and potential to perform, DoubleVerify believes that some DV Authentic Ads™ may be predictive of outcomes more than others. DV Authentic Attention® overlays key performance measures onto DV Authentic Ad™ delivery to help advertisers distinguish top performers correlated with measurable media outcomes.

A Note on Statistical Significance

All increases referenced throughout this paper are significant to the 90% confidence level unless otherwise noted with an asterisk (*), which indicates significance to the 80% level.

DV Authentic Attention® Analysis – Overall Impact

A deeper analysis of DV Authentic Ads™ (82% of campaign impressions) by DV Authentic Attention® quadrants revealed the varying degrees to which Exposure and Engagement impacted performance throughout the entire purchase funnel. In this quadrant analysis of the Kantar data, high-Exposure impressions were found to drive the greatest lift on branding measures.

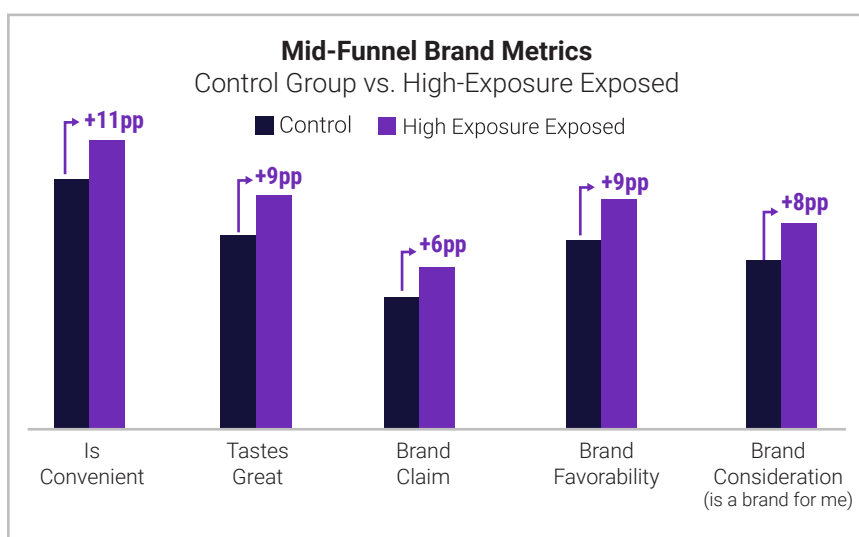
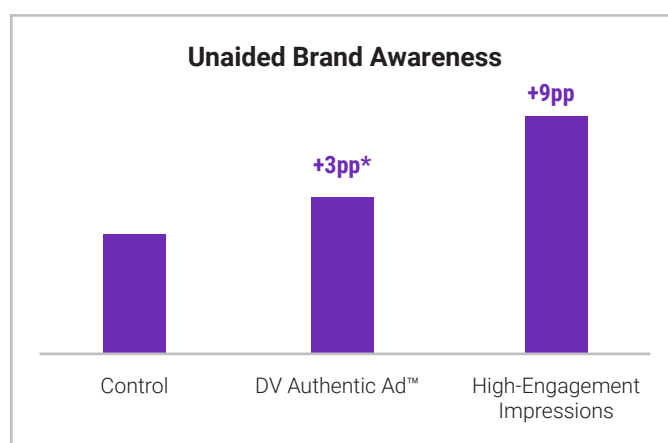
High-Exposure impressions drove lift on key branding measures – brand awareness and consideration.

Upper-Funnel

On upper funnel measures, audiences served high-indexing impressions (versus those exposed to any DV Authentic Ad™) showed better performance against the control group:

- **High-Exposure impressions** drove a +5 percentage point lift in unaided brand awareness vs. +3* point lift – a 66% increase in media-attributable lift
- **High-Engagement impressions** drove a +9pp lift in unaided brand awareness vs. +3* point lift – a 3x increase in media-attributable lift

Across both exposure and engagement measures, higher performing impressions elevated the brand in consumers' minds, when considering options within the category.



Mid-Funnel

High-Exposure impressions drove lift in consumer attitudes on mid-funnel measures. This finding is noteworthy, as mid-funnel is where a brand enters the consumer's consideration set. For the Mondelez campaign, high-Exposure impressions prompted higher brand attribute association, brand favorability and brand consideration.

It is also noteworthy that high-Exposure impressions drove greater lift on every single one of these important metrics compared with exposure to any DV Authentic Ad™.

DV Authentic Attention® Analysis and Key Audience Segments

Impact on Primary Grocery Shoppers

An analysis of the household's primary grocery shopper segment (a key target for CPG brands) by DV Authentic Attention® data amplified the importance of high-Exposure impressions. This analysis revealed that high-Exposure impressions provided positive lift (exposed group vs. control group) on upper-, mid- and lower-funnel measures.

- +6 percentage point lift in unaided brand awareness and +7 point lift in aided brand awareness
- Lift in snack brand attribute association: +14 percentage points "Is convenient," +14 points "Tastes great," and +10 points "brand claim"
- +14 percentage point lift in brand favorability, and +9 point lift in brand consideration "Is a brand for me"
- +5* percentage point lift for purchase intent

It is noteworthy that high-Exposure impressions outperformed low-Exposure impressions in all the above metrics. In fact, low-Exposure impressions did not meet significance for lift for several of these metrics, indicating the higher performance of DV Authentic Ads™ overall was driven by the high-Exposure subset.

Among key audience targets — primary household shopper and non-purchasers of brand — high-Exposure impressions had positive impact on brand favorability and consideration.

Impact on Non-Purchasers of Snack Brand

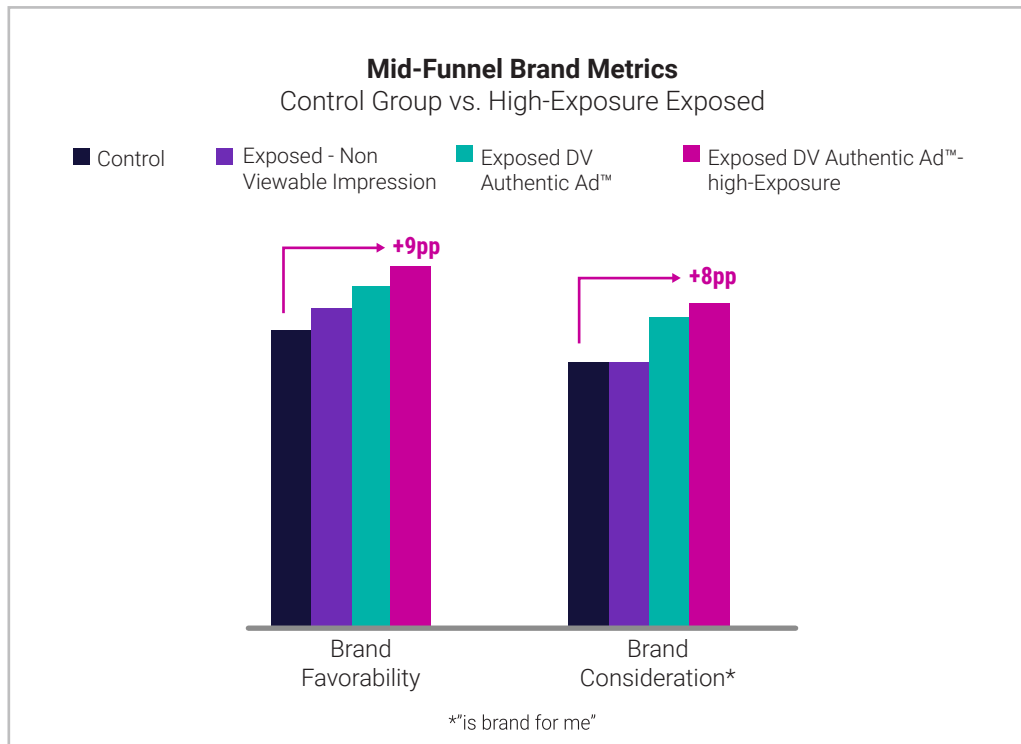
Another key sub-group for analysis included respondents who had not purchased the Mondelez snack brand in the past three months. This sub-group is important to influence, since past purchasers of the snack brand — whether exposed to the campaign or not — demonstrated an already-strong baseline brand affinity and purchase intent.

Analysis (exposed group vs. control group) of the non-purchaser sentiment clearly showed the positive impact that high-Exposure impressions had on mid-funnel attributes.

- Lift in snack brand attribute association: +13 points "Is convenient" and +13 points "Tastes great"
- +12 points lift in brand favorability and +10 points lift in brand consideration "Is a brand for me"

DV Authentic Attention® Boosts Existing Optimization Capabilities

The results from the Kantar Brand Lift Insights study clearly showed how DV Authentic Attention® built on the strong performance lift delivered by DV Authentic Ads™ — emphasizing (particular for this campaign) the value of high-Exposure impressions.



Impact on Media Acquisition and Campaign Optimization

DV Authentic Attention® provided Mondelez and its agency partner with:

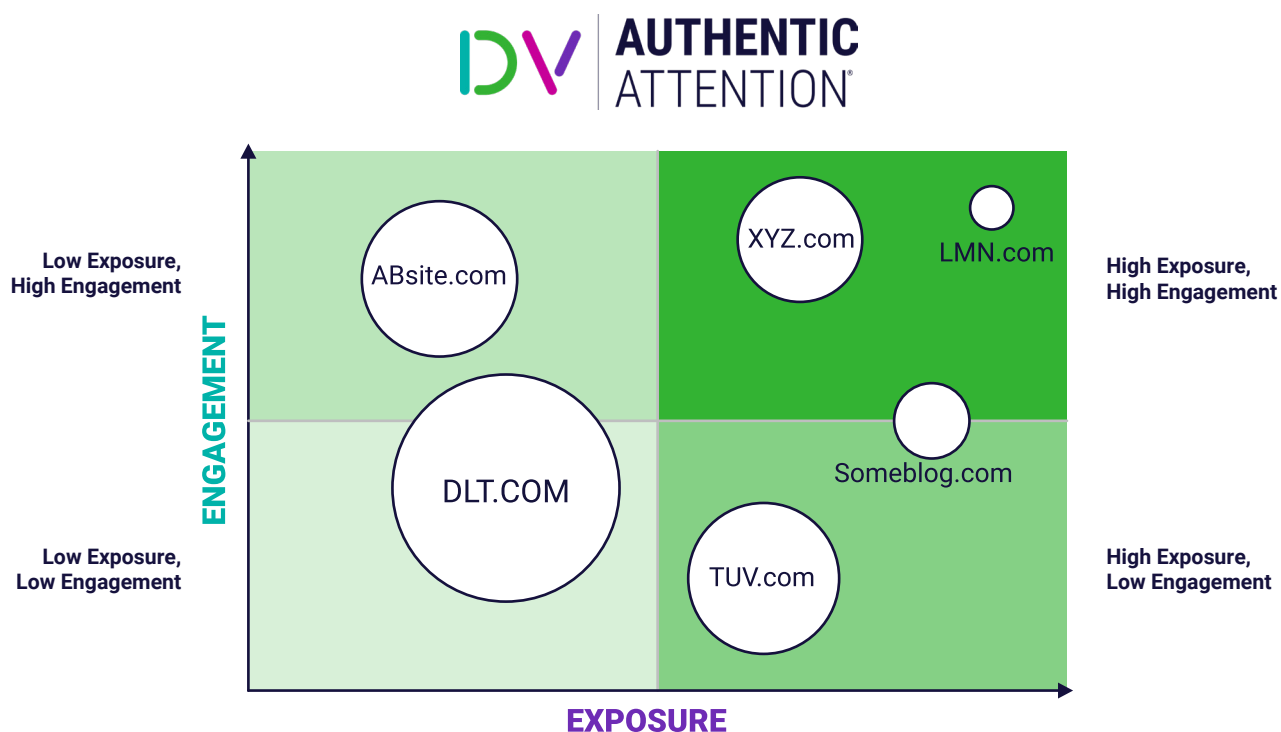
- A more granular, sophisticated and holistic view of campaign performance
- Insights into the value of high-Exposure impressions
- Actionable data to amplify an already successful optimization strategy
- Access to a single performance dashboard with ranking of top/bottom sites, apps, placements, creatives and more

The Interaction Between Exposure and Engagement

DV Authentic Attention® and its individual Exposure and Engagement components, provide advertisers with actionable insights into campaign effectiveness. However, the power of DV Authentic Attention® is fully revealed by analyzing the combined impact of Exposure and Engagement.

DV Authentic Attention® Quadrant Analysis

When plotted against one another, combinations of Exposure and Engagement provide four distinct quadrants for analysis. This DV Authentic Attention® quadrant analysis is available in DV Pinnacle® — DV's unified service and analytics platform.



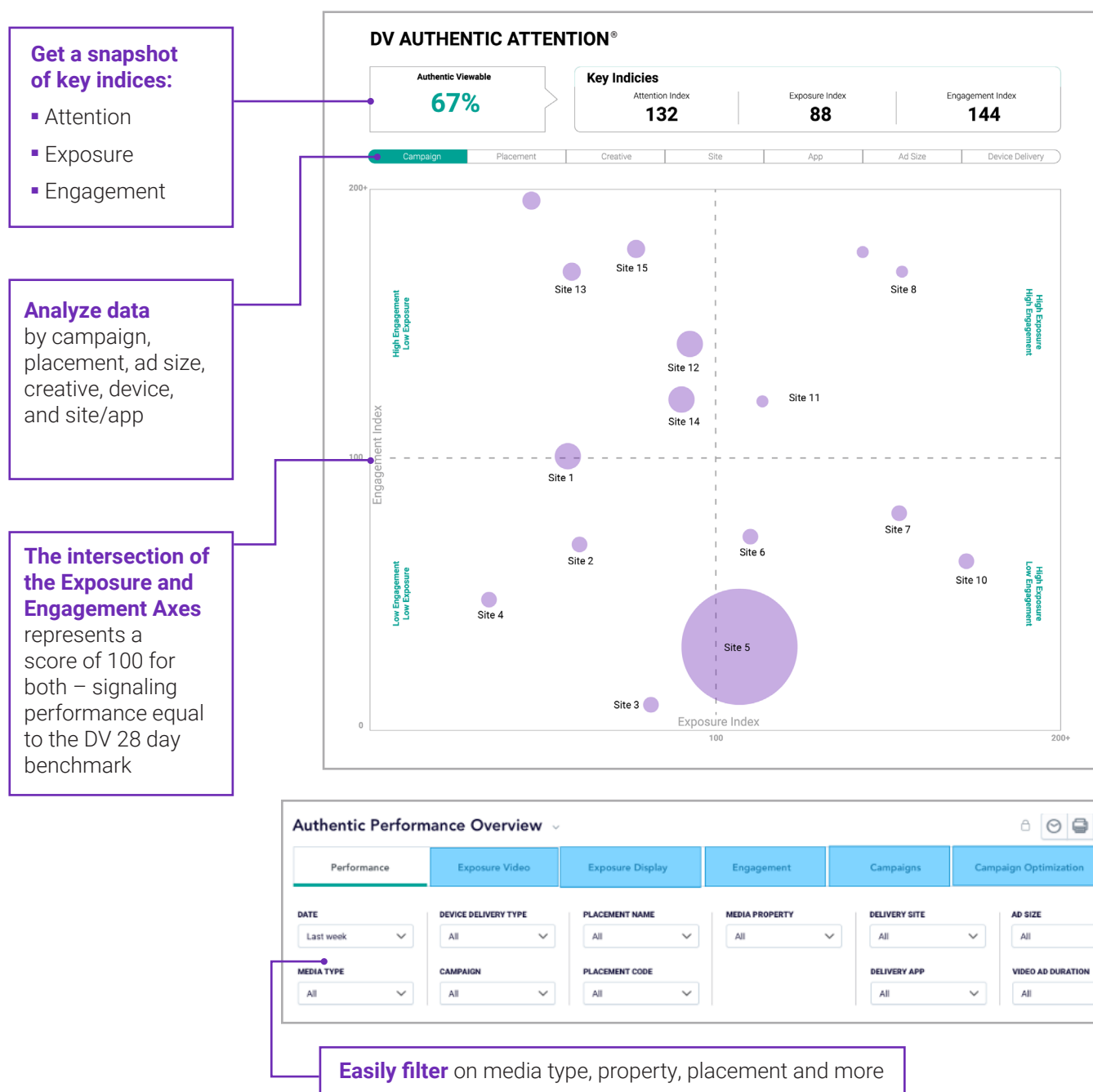
DV Authentic Attention® quadrant analysis gives advertisers a powerful view of their data that shows the interaction between Exposure and Engagement. DV Authentic Attention® quadrant analysis provides:

- Granular insights that align with campaign KPIs — whether conversion or branding
- Actionable data that can be used for campaign optimization
- Comparison of campaign performance to DoubleVerify's benchmarks

DV Authentic Attention® Dashboard

DV Authentic Attention® data is immediately available in the DV Pinnacle® platform. DV Pinnacle® provides in-depth analysis and visualization of DV Authentic Attention® data – delivering actionable insights to drive optimization decisions. Additionally, DV Pinnacle® allows for drill-down into both Exposure and Engagement measures (see appendix for details).

The DV Pinnacle® platform's easy-to-use interface simplifies optimization decisions by pinpointing underperforming areas at the source. DV Authentic Attention® data is also available via downloadable reports and data feeds.



DV Authentic Attention® — Helping to Build a Better Industry®

DV Authentic Attention® builds on DV's Authentic Ad™, a proprietary, MRC-accredited metric that provides advertisers with a definitive measure of digital media quality. As a natural evolution, DV Authentic Attention® overlays key performance measures onto DV Authentic Ad™ delivery, enabling brands to optimize their digital strategies in near real-time. The DV Pinnacle® platform provides in-depth analysis and visualization of DV Authentic Attention® data.

Putting DV Authentic Attention® to Work

Holistic Measure	Correlated Data	Campaign Optimization
Media metrics data is often incomplete and/or reported in silos. Advertisers are not always given clarity into whether an impression is driving performance on their key campaign KPIs. DV Authentic Attention® is the ideal solution for advertisers looking for a single measure to predict campaign effectiveness based on a 50+ data point analysis.	Advertisers are often hampered in their analytics efforts by an inability to leverage in-flight and post-campaign data for optimization purposes. DV Authentic Attention® offers advertisers the opportunity to see the interaction between Exposure and Engagement. This powerful analysis gives advertisers a clear view into exactly which impressions are driving performance — a view that extends to all campaigns, from brand-building efforts to acquisition-focused programs.	Advertisers often find themselves seeking new optimization tactics to garner better campaign performance. DV Authentic Attention® provides actionable data to advertisers that empowers new optimization tactics that drive campaign effectiveness. Data is easily accessible in the DV Pinnacle® platform, and allows for drill-down into performance by campaign, placement, ad size, creative, device, app and site.

Learn More

Contact Sales@DoubleVerify.com today to learn how DV Authentic Attention® can power campaign effectiveness and real business outcomes for your brand.

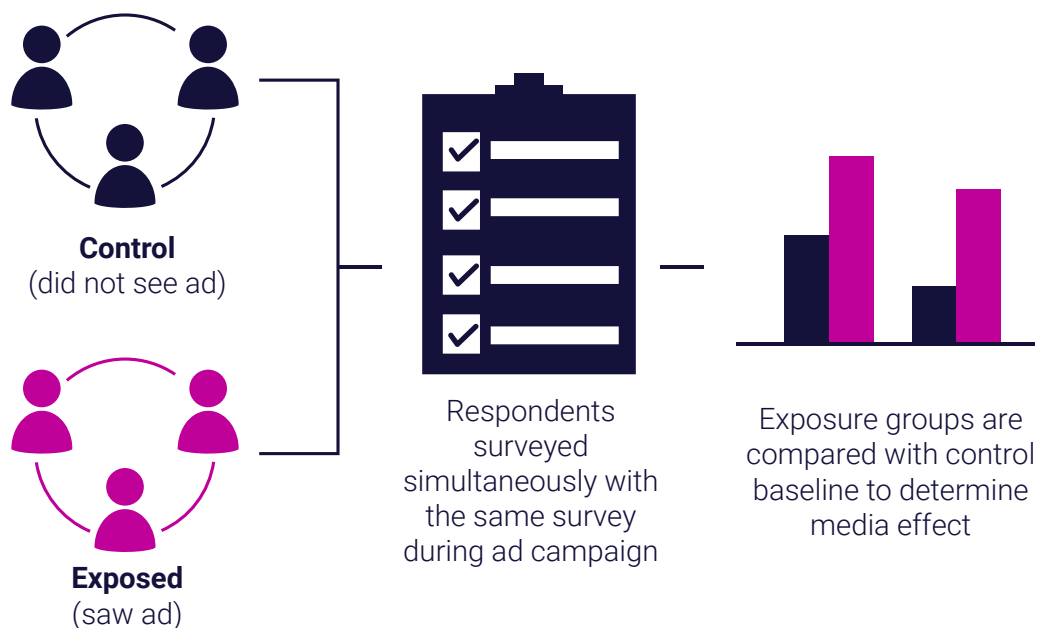
Appendix - Campaign Detail and Study Design

Campaign Details

- Client - CPG company
- Category - Breakfast foods
- Primary KPIs - Brand awareness, driving offline sales
- Targeting - US only, category buyers
- Creative: Static, no video
- Impressions: 35% mobile web, 50% mobile app, 15% desktop

Study Design

The Kantar Brand Lift Insights study uses a survey-based approach and control/exposed research design to measure the difference in attitudes between the two groups of consumers to determine the attitudinal effects of advertising exposure. The study measures consumers' attitudes throughout the purchase funnel — from upper-funnel awareness, to mid-funnel favorability and consideration and, finally, to lower-funnel purchase intent.



Appendix - DV Authentic Attention® Measures

DV Authentic Attention® is an innovation in DV measurement services. Using DV Authentic Ads™ as the basis of measurement, DV evaluates two key areas of digital advertising — Exposure and Engagement.

Indices

Indices are used throughout the DV Authentic Attention® solution, as the normalized number that compares each measure with that of DV's benchmark (based on historical, 28-day rolling data). All indices are base 100, which represents the average score. Therefore, a score of 125 means performance of that index is 25% better than the benchmark score of all DV impressions for the 28-day evaluation window.

Exposure Index

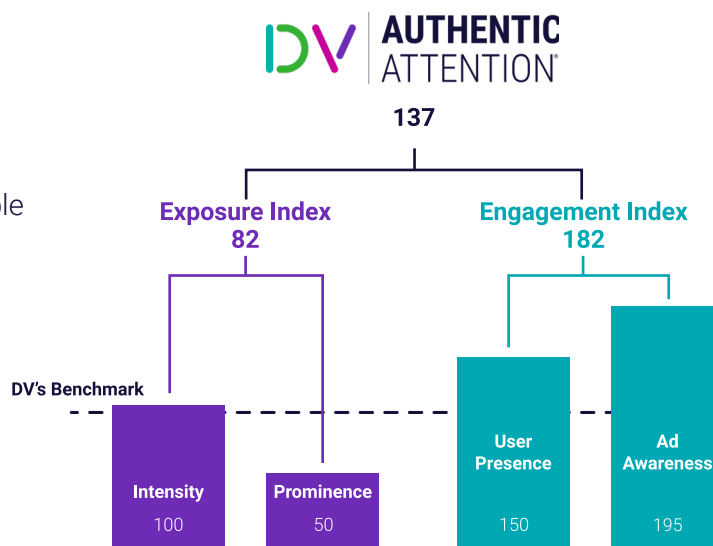
Exposure is the evaluation of the entire ad presentation on the device, with considerations for each media type. The Exposure Index provides an in-depth analysis of ad presentation by combining the following underlying indices:

- **Intensity Index** — for display, measures the viewable time of the ad on-screen; for video, it considers viewability, audibility, whether the player is fully on-screen, and rate of completion through the four quartiles of the video creative
- **Prominence Index** — measures the viewable pixels of the creative relative to the entire screen real estate of the device

Engagement Index

Engagement captures user-initiated events at the device or ad level. The Engagement Index combines User Presence and Ad Awareness indices:

- **Ad Awareness Index** — measures the level at which a user has directly interacted with the ad
- **User Presence Index** — evaluates if the user was present at the device when the ad was viewable



Appendix - DV Pinnacle® Platform

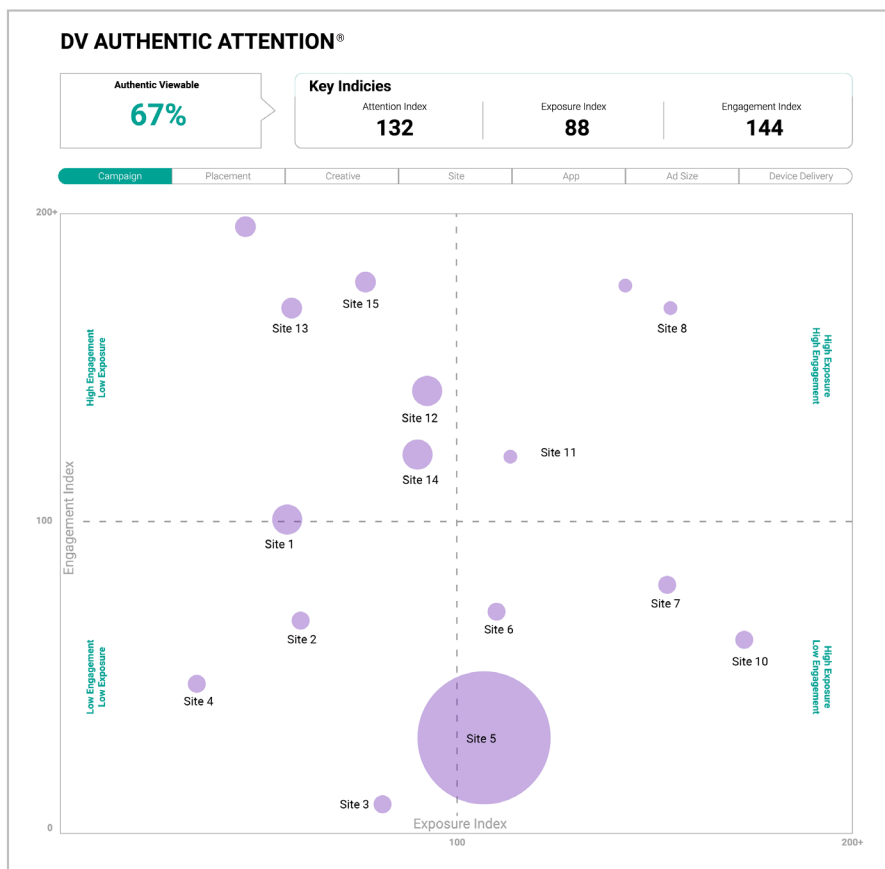
DV Pinnacle® provides in-depth analysis and visualization of DV Authentic Attention® data via a new, dedicated dashboard. This new dashboard provides four overview tabs — Performance, Exposure Video, Exposure Display and Engagement, in addition to Campaign and Campaign Optimization tabs.

Performance

The Performance tab provides an overview of the data relationship between Exposure and Engagement per campaign, placement, creative, ad size, device delivery, site and app. This is presented in a scatter plot, where the X Axis represents the Exposure Index and the Y Axis represents the Engagement Index.

The size of the bubble represents the volume of impressions. Hovering over a bubble provides the following data values:

- Metric Name
- Monitored Impression Count
- Attention Index
- Exposure Index
- Engagement Index



Appendix - DV Pinnacle® Platform

Exposure Video

The Exposure Video tab provides an overview of key Exposure indices through the four quartiles of a video creative. The Video Ad Exposure analysis offers a timeline that charts ad presentation during playback, providing quartile attrition, viewability and audibility data.

Exposure Display

The Exposure Display tab provides an overview of key display performance indicators. The Display Ad Exposure tab includes a plot of display viewable time (the average time duration, in seconds) for which an IAB viewable impression satisfied the pixel threshold requirement.

Engagement

The Engagement tab provides an analysis of user-initiated engagement events that occurred at the device or ad level, creating actionable KPIs to measure advertiser marketing goals.

Campaigns & Campaign Optimization

The Campaigns tab provides a ranking of campaigns by their Attention index. The tab features a Top Performing and Bottom Performing breakdown that contains campaign performance scores, filterable by several indices and rate calculations — providing users with deeper insight into campaign effectiveness in order to optimize media spend.

The Campaign Optimization tab provides more granular campaign performance data on the placement level, which helps inform specific campaign actions.

Appendix - Glossary

Measure	Definition
DV Authentic Ad™	Deduplicated count of impressions that were brand safe, free from Fraud/SIVT, in the targeted geographic region, and met the IAB standard for display or video viewability.
Authentic Rate	The percent of measured impressions that were Authentic. It is calculated with the following formula: DV Authentic Ad™/Measured Impressions. Measured Impressions are impressions for which DV was able to obtain the information needed to make decisions about viewability.
Attention Index	The comparison of the combination of Exposure Index and Engagement Index over the DV benchmark across all impressions.
Exposure Index	Comparison of the combination of Prominence Index and Intensity Index for the selected impressions over the DV benchmark across all impressions.
Intensity Index	Comparison of Display Viewable Time/Video Intensity Score for the selected impressions over the DV benchmark across all impressions. The average, where it equals the benchmark, will result in an index score of 100.
Prominence Index	Comparison of Viewable Share of Screen over the DV benchmark across all impressions.
Video Intensity Index	A deep analysis of the viewable, audible and completed progress through the four quartiles of the video creative.

Appendix - Glossary

Measure	Definition
Engaged Impression	Any impression where an ad awareness or user presence engagement event occurred. These impressions are non-exclusively classified as: User Ad Aware – User has directly interacted with the ad User Presence – User has interacted with the device or ad
Engagement Index	Engagement captures user-initiated engagement events that occur at the device or ad level. The Engagement Index is an average of the combined User Presence and Ad Awareness indices as they relate to a base average value of 100.
Ad Awareness Impressions	Percent of impressions where Ad Engagement occurred, which includes the following engagement metrics: Ad Hover, Ad Touch, Ad Click, Ad Volume Up, Ad Volume Down, Ad Muted, Ad Unmuted, Ad Pause, Ad Resume, Ad Skip, Ad Abandon, Ad Size Increased or Ad Size Decreased.
Ad Awareness Index	A measurement of an advertiser's unique Ad Engagement Rate compared with the DV benchmark Ad Engagement Rate.
User Presence Impressions	Count of impressions where ad- or device-level Engagement occurred, which includes the following engagement metrics: Device Tab into Foreground, Device Tab into Background, Keypress, Mouse Movement, Scrolling, Device Switched to Portrait, and Device Switched to Landscape.
User Presence Index	A measurement of an advertiser's unique Ad Engagement Rate or device level engagement compared with the DV benchmark User Presence Engagement Rate.