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Anatomy of a Video Impression

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Introduction

As the industry advances toward unified cross-platform measurement, the ability to gauge the overall impact of a video campaign has become increasingly important. To address this, marketers expect measurement partners to adhere to industry guidelines that standardize video impressions and assume they are treating them equally across various platforms, devices, content types, or settings. Impressions are a critical metric in video advertising, serving as the foundation for measuring audience across platforms. IAB & IAB Tech Lab understands the importance of such signaling and has worked with the industry to build and maintain software to standardize impression measurement across channels, such as the Development Kit (OM SDK). Each time an ad is displayed, it contributes to understanding how often viewers encounter brand messaging. According to the [IAB 2024 Digital Video Ad Spend & Strategy Report](#), global digital video ad spending will surpass \$62.9 billion in 2024, reflecting the importance of effectively measuring impressions to allocate budgets.

However, different media channels and platforms - whether on connected TV (CTV), social video, linear TV, or web video - may count impressions differently, **making comparability a challenge**.

As video consumption diversifies, accurate impression tracking helps advertisers optimize investment and assess campaign impact. Understanding these variations is key to ensuring fair measurement and optimization/allocation success. This report explores the anatomy of a video ad impression in channels such as web video, CTV, social video, and linear, the complexities of measurement across these channels, and the challenges in achieving unified cross-channel measurement.





Executive Summary

The Anatomy of a Video Impression report addresses the growing complexity of measuring video ad impressions across multiple channels, including web, social, CTV, and linear TV. As digital video consumption surges, standardizing impression measurement across platforms has become critical. However, differences in counting impressions, including approaches that need to be more compliant with industry definitions, may be present, complicating advertisers' efforts to assess campaign effectiveness consistently. Disparities in how impressions are defined and measured create significant barriers to comparing performance across platforms.

This document highlights the difficulty in establishing cross-channel measurement due to inconsistent methods of counting impressions and other technical challenges. Additionally, technical challenges exist for publishers, particularly in achieving Media Rating Council (MRC) accreditation and re-engineering legacy systems to align with industry standards, further slowing progress toward standardization. Despite these hurdles, there is a continued need for transparency and uniformity in how impressions are tracked and reported.

The report urges collaboration among advertisers, platforms, and technology providers to adopt transparent practices for impression counting, such as leveraging industry software like Open Measurement. Transparency in methodology, adherence to MRC guidelines, and investment in advanced tracking technologies are critical to improving consistency and accountability. By unifying measurement practices, the industry can provide more reliable comparisons across platforms and enable better decision-making for video ad campaigns.



1. Definition of an Impression

An ad impression, across both digital and traditional environments, refers to a person's exposure to the content of an advertisement. The ad must be loaded and, at minimum, begin to render (including ensuring the video has begun to play) to be counted as a valid impression. In linear TV, ad impressions may be estimated based on content or ad audience measurement techniques using panels or return-path data like set-top boxes (STB) or automatic content recognition (ACR). In digital channels, the Interactive Advertising Bureau (IAB) and the Media Rating Council (MRC) released a [guideline](#) in 2006. They updated it in 2018, defining a **digital video impression** as the measurement of responses from a video ad delivery system to an ad request from the digital video content host (facilitated through the user's browser), which is filtered for invalid traffic and is recorded at a point as late as possible in the process of delivery of the creative advertising material to the user's browser. A valid digital video ad impression may only be counted when an ad counter (logging server) receives and responds to a client's HTTP (or other protocol) request for a tracking asset. The count must happen after the post-buffering ad stream instead of a request for the digital video content. While the specific methods for counting impressions may vary across channels, the core principle remains: an impression represents a measurable ad exposure, filtered for invalid traffic and accounting for viewability when possible.

MRC defines a [Viewable Video Ad Impression](#) as a video ad for which 50% of the ad's pixels are on-screen/in-focus browser tab in the viewable space of the browser page for a minimum of 2 continuous seconds. This required time is not necessarily the first 2 seconds of the video ad; any unduplicated ad content comprising two continuous seconds qualifies. Viewability, though often associated with digital, also plays a role in traditional formats, ensuring that advertisers are only charged for ads with a fair chance of being seen. The [MRC's Digital Audience-Based Measurement Standards](#) require confirmations of a few things: (1) the presence of a user, (2) sophisticated invalid traffic (SIVT) filtration, (3) consideration of audio, (4) 100% pixels at 2 continuous seconds and (5) duration weighting for both digital and linear (the last two according to the [MRC's Cross-Media Measurement Standards](#) requirements).

To better understand audience measurement, it's important to distinguish between **impressions** and **reach**, and to define the different metrics that play a role in this process. Below, key metrics and definitions are provided based on IAB and MRC guidelines and standards, including how they are counted and the challenges involved:

- **Impressions:** The count of the number of times an ad is served to users, regardless of whether the ad was seen or interacted with. Each time an ad is displayed (or served) on a user's screen, these get counted as impressions and can be counted multiple times. They contribute to frequency, while average frequency times deduplicated reach is equal to impressions. Each ad exposure is counted as one impression, even if the same user sees the ad multiple times or across different devices. This metric is not deduplicated and includes every exposure. In some cases, quality checks, like those for viewability and fraud, are applied to ensure valid impressions are counted; at most, one viewable impression can correspond to one impression.



- **Co-Viewing Impressions:** Impressions that occur when multiple people are viewing an ad together on a shared device, such as a CTV in a household setting.
- **Ad Reach:** The total number of unique individuals (or households) exposed to an ad at least once across all channels and platforms. Reach focuses purely on unique individuals—counting each person only once, no matter how many times or on how many devices they’ve seen the ad. For web video and social, reach is usually applied at the campaign level, covering multiple touchpoints, channels, or ads, and is often aggregated over the duration of the entire campaign or a defined time period.
- **Unique Digital User or Unique Digital Audience:** The number of distinct individuals who viewed a specific piece of content or ad within a particular channel or platform during a given time frame. This metric identifies the count of unique users or viewers who have been served an impression. It is typically used for a specific ad, content piece, or platform interaction to show how many unique individuals engaged with that instance. Unique Users can be measured at various granular levels, such as daily, session-based, or interaction-based.

This report focuses on impressions. IAB will subsequently provide similar analyses, such as the anatomy of reach and frequency. So, let’s detail the impression definition by channel:

1 DIGITAL VIDEO

Digital video impressions are counted when an ad is loaded on a webpage or video player and can be counted when an ad begins to render, allowing publishers to count ads as delivered. Tracking digital video impressions relies on data signals collected through JavaScript tags, pixels or software development kits (SDKs) to monitor ad delivery. However, privacy measures may limit the effectiveness of client-side tracking methods. With increasing restrictions on client-side tracking, server-side tracking (note: IAB/MRC guidelines require impression counting based on client-side telemetry for server-side tracking or server-server integrations) has emerged as an alternative, particularly for overcoming limitations associated with Server-Side Ad Insertion (SSAI) environments.

Viewability plays a central role in measuring ad delivery of impressions and the opportunity for ads to be seen. A video ad is considered viewable when at least half its pixels are in view for at least 2 continuous seconds. This ensures that advertisers can distinguish ads with a better chance of being seen from impressions quickly scrolled past, loaded in an inactive browser tab or below the fold.

However, the digital video is not immune to invalid traffic (IVT) issues. Invalid traffic happens through bots and fake traffic, inflating impression counts and costing advertisers. To address this, the MRC has developed [IVT detection standards](#), including IVT filters to sift out invalid impressions from reporting, resulting in the identification of more valid ad impressions by more measurement companies.



2 SOCIAL VIDEO

Social media platforms may have differing methodologies to define and count impressions for certain ad formats, screen types, etc. To explore those differences, we highlighted below the video impression definition from the social platforms with more than 100M users in the U.S. and annual revenue greater than 5 billion dollars.

- **Meta (Facebook & Instagram):** An impression is counted as an instance of an ad appearing on screen for the first time. For example, if an ad is on screen and someone scrolls down and then scrolls back up to the same ad, that counts as one impression. If an ad is on screen for someone two different times in a day, that counts as two impressions. This method of counting video impressions differs from industry standards for video ads. Except for ads on Meta Audience Network, impressions are counted the same way for ads containing images or videos. This means a video on Meta is not required to start playing for the impression to be counted.
- **TikTok:** An ad impression is the number of times ads were shown. Scrolling away from an ad and backing up will not count as an additional impression. A video is not required to start playing for the impression to be counted.
- **Youtube:** An impression is counted when users are exposed to the in-feed thumbnail, the initial in-stream portion of the video, or the playback of a YouTube Shorts ad.
 - In-stream ad impressions: This metric counts when the video starts playing on the watch page before, during, or after the viewer's organic video starts playing.
 - In-feed impressions: This metric counts when the viewer views the video's thumbnail.
 - YouTube Shorts ad impressions: This metric is counted when the video starts playing in the Shorts feed between playbacks of organic Shorts videos.

The differences are clear. Meta and TikTok count impressions based on on-screen visibility, regardless of video playback. YouTube differentiates between in-stream and in-feed impressions using separate counting methods. These differing definitions reflect each platform's characteristics and goals, highlighting the importance of understanding these nuances when planning and evaluating social media advertising campaigns.

Further, each platform should adhere to the IAB/MRC Guidelines for measuring video impressions, report compliant metrics in a standardized manner, and clearly distinguish other metrics not qualifying as impressions (such as video that has not begun playing).

On social platforms, IVT presents different challenges compared to the open web. Even though social platforms have publicly shared their commitment to removing IVT and invalid accounts, tactics such as bots may artificially inflate engagement numbers, distorting how impressions are counted.



3 CONNECTED TV (CTV)

In CTV environments, ad impressions and ad viewability measurement requirements are the same as in general digital video environments. Still, they may be measured using different approaches or signals compared to other digital platforms, mainly due to the nature of CTV environments, which often involve large screens, independently powered devices, and limited tracking tags. Measurement issues in CTV may be driven by the lack of JavaScript, limitations related to pixel tracking, and the need for player or SDK integration. These can be exacerbated by “TV Off” or “Continuous play” issues. In 2022, DoubleVerify found [1 in 4 top CTV](#) environments and apps continued to play ads even after the television was turned off. Also, although CTV is generally a logged-in environment, it’s hard to determine how many users are watching at any given time (i.e.; co-viewing). This becomes especially problematic when multiple viewers are present, such as during family viewing or group settings. Advertisers and platforms can only infer audience composition at the household level as individual user identification is lacking, leading to less precise targeting and measurement.

IVT issues in CTV can occur, especially in programmatic, when fraudsters may exploit the chain of bidding and delivery in CTV to create falsely counted impressions through tactics like device spoofing, where non-existent or fraudulent devices generate ad requests, and app spoofing, where illegitimate apps mimic popular streaming services to attract ad spend. This may inflate impression counts.

In summary, while CTV measurement is possible through SDKs and player integrations (aligned with IAB and MRC’s established digital video and CTV measurement guidelines), measurement challenges exist and viewability may be inferred due to the full-screen nature of ads, with progress events as a proxy for delivery and viewability (note: MRC requires quality control and testing to support this including direct knowledge of TV power/input state). IAB and MRC Guidelines have addressed certain complexities, such as ensuring that ads are not counted when the TV is off, or during continuous play scenarios. A recent update to the open measurement (OM) SDK, which now includes a CTV-specific SDK, further enhances the ability to account for these issues. Despite these advancements, the nuances of CTV measurement continue to cause confusion among publishers, measurement partners, and advertisers. There remains a need for broader adoption and consistent application of industry guidelines to reduce ambiguity.

4 LINEAR TV

Impression counting in linear TV is based on long-established audience measurement techniques. Audience measurement companies may use a combination of household or person samples or panel or return-path data such as set-top box (STB) or automatic content recognition (ACR) data. The methodology behind this data is intended to provide a representative view of TV audiences to estimate how many people are watching a particular ad or other unit of content. Linear TV is effective for reaching broad audiences, but its measurement techniques may lack the



precision of digital environments. Impressions in linear TV are often inferred based on content or time-part audiences or tuning during an ad break (such as commercial minute). Using device-level information like STB data or ACR provides greater coverage of tuning data and enhances samples, but the identity of individual viewers is less deterministic as data may be device-level. Linear measurement relies on extrapolating from this data to estimate the total audience, which can lead to less precision compared to the more deterministic methods. On the other hand, linear TV measurement may better account for TV power state and presence of the user(s) during tuning (including co-viewing through the use of people meters or statistics) and is less susceptible to invalid traffic than digital video.

Unlike web video, linear TV doesn't provide individual person signals. Instead, the data is gathered on a TV level, or device level (e.g., via ACR data), making it hard to determine how many people are watching at any given time (i.e., co-viewing). Most measurement companies solve for this by using or including person-level panels, people meters, or via big-data statistical inference (or AI). TV ratings offer advertisers an estimate of the number of impressions their ads generate, but they don't account for variables like multitasking or viewer distraction—which is not an issue limited to linear TV—all types of video are subject to multitasking and viewer distraction.

Linear impressions and unique viewer measurement have a long history of complicating factors. These include:

- Equivalized impressions (e.g., a 15-sec impression is credited 50% of a 30-sec impression). Also, impressions as a count of exposures vs time-based calculation (e.g., viewing seconds/ad length)
- Impressions as a count of exposures vs time-based calculation (e.g., viewing seconds/ad length)

Like CTV, linear TV also faces viewability challenges, particularly with the “TV-Off” issue when measured using set-top box (STB) data. While invalid traffic (IVT) can still occur in linear TV, the risks are generally lower compared to other channels. This is due to factors such as established measurement practices, controlled distribution, and limited access to ad inventory.

THE VARYING IMPRESSION CHALLENGES ACROSS DIGITAL VIDEO CHANNELS

Comparing impression measurement challenges across different platforms and devices is like trying to solve a puzzle with missing pieces, mismatched shapes, and hidden complexities. It's a challenging task that requires innovative approaches and ongoing efforts to overcome these hurdles. Each channel may have unique challenges or approaches for counting impressions and viewable impressions. It is critical that each channel and platform measure video impressions and viewability against the industry definition in a compliant and standardized manner.

In general, we also recognize as technology and measurement become more sophisticated that companies can measure beyond what is listed:



MEDIA TYPE	AD IMPRESSION	VIEWABILITY
Digital Video	Counted when the ad is loaded and begins playing on a user's device, verified through tracking pixels or ad server signals, regardless of whether the ad is in view. Requires the ad to begin playing.	Measured by tracking whether at least 50% of the ad's pixels are in view for at least 2 continuous seconds.
Social Media	It may be inconsistent, platform-specific, and not include consideration of playback.	Generally consistent where present, but standard viewability may not be available in all cases or at all.
CTV	Counted consistently but subject to tracking limitations and technical challenges such as inactivity and continuous play. Co-viewing may lead to undercounted impressions.	Full-screen is generally assumed, but tracking limitations and TV Off considerations may inhibit measurement.
Linear TV	Counted based on scheduled airings, measured through panel data, ACR data, and/or set-top box tracking. Encoding and people meters are leading to more granular and direct impression measurement.	It may be inferred when the ad is aired, based on estimates of the audience present. Full-screen is generally assumed. Metering methods and ACR data can account for when a set-top box or streaming device is on, and the TV is off, but STB data cannot.

These differences highlight the importance of understanding the nuances of each media channel's and platform's impression-counting methods or challenges when planning and evaluating advertising campaigns. While accreditation is voluntary, many platforms are not accredited, making it challenging to assess, verify, and compare how impressions are measured across them. This lack of transparency and formal auditing can lead to discrepancies, which is why it is crucial to encourage ad tech and measurement platforms to disclose their counting methodologies and seek accreditation. Advertisers should carefully align their choice of partners and metrics with the specific goals and objectives of their campaigns.



2. The Complicated Case of Counting Video Impressions

In the [2024 Video Ad Spend & Strategy Report](#), IAB released data that digital video is projected to surpass linear TV in ad spend in 2024 (since 2020, ad spend share has shifted nearly 20 percentage points from linear TV to digital video). As video consumption grows across various platforms and devices, accurately measuring video impressions has become increasingly complex. With users switching between multiple devices and platforms, shared viewing environments, and the decline of universal tracking tools like cookies, counting impressions accurately is not straightforward.

The challenges of measuring video impressions are numerous, particularly when reporting across web video, CTV, social video, and linear TV. It's crucial to understand where impressions are counted in the ad-serving process, as this can vary significantly between platforms. Additionally, knowing which specific methodology the publisher or platform uses to measure and report impressions is essential, as it directly impacts how metrics are interpreted and compared across different channels.

Below are the various stages and events, presented in the general order in which they occur in the ad-serving process for web video, with definitions based on IAB and MRC standards (note: ad requests and responses are not compliant impressions):

1 Ad Request

The initial stage when an ad is requested from the server. The ad content has not yet started loading on the user's device; it is simply a call to retrieve the ad. This is not a valid event that counts as an impression per IAB/MRC Guidelines.

2 Ad Response/Transmission

At this stage, the ad is being transmitted from the server but has not yet been downloaded on the client side or begun to render on the user's device. The ad creative is in the delivery process but may not be in a viewable state yet. This is not a valid event that counts as an impression per the IAB/MRC Guidelines.

3 Ad Begins to Render

The ad has fully loaded on the user's device and has begun to render. This includes beginning playback for video. It has successfully reached the device or application, meaning it has been delivered at the client side. However, rendering only indicates that the ad is present in the environment, which is not necessarily visible or viewable. This event can be considered an impression per IAB/MRC Guidelines. However, it may not have gone through quality checks like IVT and may not be viewable.



4 Valid Ad Impression

A valid ad impression is measured and passes the necessary quality checks, such as IVT filtering for general invalid traffic (GIVT) and/or SIVT. This indicates that the impression is legitimate and has begun to render.

5 Viewable Impression

After an impression is confirmed valid (at least filtered for GIVT), it can be further classified as a viewable impression if it meets established viewability criteria. According to industry guidelines (e.g., MRC), this typically means that at least 50% of the ad's pixels are visible on the screen for a minimum duration (e.g., one second for display ads or two seconds for video ads).

6 Verified Ad Impression

A verified ad impression has undergone full validation beyond validity and viewability. It confirms that the ad meets all required criteria, including proper placement and other specific requirements set by the advertiser or platform. This ensures that the ad was delivered in the correct context and environment.

Note: Gross Impressions, Net Impressions and Total Net Impressions are terms defined by MRC's IVT Standards. Gross Impressions represent the total number of impressions served before any filtering. In contrast, Net Impressions refer to impressions after GIVT has been applied and Total Net Impressions refer to impressions after all filtering (GIVT and SIVT). These terms are used to categorize impressions at different levels of quality filtering.

Understanding which stage is being reported is crucial for accurately interpreting impression data and comparing reach across different video platforms (note: MRC Audience Standards require full SIVT or Total Net for contribution to audience/reach). Given the complexity and the many stages involved in counting impressions, many marketers assume reported impressions refer to Total Net Impressions—those that have been rendered and filtered for all invalid traffic but have not necessarily been evaluated for viewability or fully verified against all quality standards or requirements.

Differences in how impressions are counted can lead to discrepancies between the counts reported by publishers versus those seen by agency or advertiser ad servers. Publishers, ad servers, or platforms may sometimes count impressions earlier in the ad delivery process, such as when the ad request is sent, which does not necessarily indicate that the ad has begun to render or has been fully delivered and is not compliant with IAB/MRC Guidelines. In contrast, agency or advertiser ad servers may apply additional filters for viewability or invalid traffic. These discrepancies can vary significantly by publisher, platform, or device, making it essential for all stakeholders to align on the methodology and criteria used for counting impressions to avoid confusion. [Open Measurement SDK](#) largely solves for these discrepancies by providing standard methods for collecting necessary signals for impression counting and viewability from the client devices and make it available to all interested parties.



Methods for measuring impressions may also differ significantly between digital and linear environments. In linear TV, impressions may be estimated using audience averages and panel data, offering a broad but consistent view. In contrast, digital platforms allow for precise tracking, but this precision introduces challenges like device fragmentation and inconsistent counting methods, which are also impacted by privacy regulation. Understanding these differences is crucial for accurate interpretation, especially as digital continues to outpace linear TV in ad spend and complexity.

Understanding how impressions are counted and whether the measurement provider is accredited or certified by recognized bodies like MRC is also important. This is why agreeing on which measurement will serve as the “source of truth” or “controlled measurement” is crucial. Establishing which measurement platform is the controlled measurement between all parties for impression metrics and stipulating that the measurement is compliant ensures consistency and helps minimize disagreements in evaluating campaign delivery and performance.

THE SINGLE-USER ASSUMPTION

Video impressions are often counted assuming that each interaction with an ad is seen by one person. This assumption may not hold when considering how devices are used in the real world, especially when there are shared devices across the household. An ad shown on a shared device may be seen by multiple people but counted as a single impression.

While scalable and precise co-viewing measurement methodologies are available via statistical methods to estimate co-viewing situations, the precision is lower than for household or non-TV device use.

QUALITATIVE DIFFERENCES

Not all impressions may have the same value to advertisers. The environment in which an ad is viewed plays a significant role in how an ad may be valued. There are many qualitative reasons why impressions are valued differently, such as creative, screen size, ad size, content quality, ad placements, viewability, dwell time, talent, equivalized impressions, etc. For example, format and placement. Pre-roll ads, for example, may capture more attention than a mid-roll ad in longer content that viewers may skip. These variables mean that even if an impression is counted as a single exposure, the quality and value of that impression can vary. These differences in quality can contribute to the reason CPMs differ between publishers and within publisher offerings.



3. Challenges in Cross-Channel Measurement and How Open Measurement Can Help

Cross-channel measurement is difficult partially due to the inconsistency in how each platform and channel counts impressions and the challenge of getting respondent-level data. Efforts to compare and deliver are complicated without any validation that all platforms are counting and reporting impressions based on standards and guidelines. Advertisers face an uphill battle trying to compare different platforms and channels due to the need for more transparency and the adoption of standards for counting impressions. This problem becomes even more complex when considering whether the ad was viewable, how long it was in view, or the specific device type being used. MRC's [Cross-Media Measurement \(CMM\) Standards](#) require equal and consistent measurement across media to address these discrepancies. Many measurement providers are now developing CMM systems designed to comply with these standards, aiming to bring greater consistency and comparability to cross-channel measurement.

One of the tools helping to address this complexity is the Open Measurement Software Development Kit (OM SDK), designed to facilitate third-party viewability and verification of impression measurement for ads served to web video, mobile, and connected TV app environments. Through a single software integration, OM SDK streamlines the collection of measurement signals and simplifies publisher maintenance. Its open nature allows advertisers and publishers to choose their preferred measurement partners, all of whom work from the same set of standardized events, contributing to more consistent cross-channel metrics. Developed in partnership with MRC, OM SDK's focus on viewable impressions aligns with broader industry definitions, capturing essential signal types like Begin to Render, One Pixel, Loaded, and Audible impressions. This adaptability provides a baseline measurement while offering flexibility for advertisers with more specific requirements.

Data privacy regulations may also pose a significant challenge in cross-channel measurement. As data protection laws like the Video Privacy Protection Act (VPPA), GDPR, and CCPA/CPRA become more stringent, tracking and attributing impressions to specific users becomes limited. These regulations restrict and/or limit how much data can be collected or shared, particularly across different platforms, requiring user consent or anonymizing data entirely. While such measures are vital for protecting consumer privacy, they hinder the ability to gain a full picture of a campaign's performance. With the reduction of cross-device tracking tools like third-party cookies and mobile advertising IDs (MAIDS), advertisers are forced to rely on fragmented data sets that may not account for user behavior across multiple devices or channels, making it harder to measure the true impact of their ads. There are already new methods to bring interoperability (like clean rooms and unified identifiers). However, there is still a lot of work to do across the industry to make these things scale economically and viably across more solutions.



The complexity of cross-channel measurement underscores the need to adopt and enforce measurement standards. Current methods for counting impressions may differ across platforms, complicating performance comparisons. As users switch between devices, advertisers require tools that integrate data from multiple sources for a comprehensive view of audience behavior. OM SDK exemplifies such a tool, enhancing cross-platform measurement through its standardized event signals. These signals, representing on-screen geometry, time on screen, quartile measurement, pause, and resume events, along with CTV-specific metrics like determining if the screen is off or if a viewer is present, reflect the depth of measurement needed to unify metrics across platforms. With over 150+ certified integrations globally and expanded CTV coverage now reaching approximately 40% of inventory on AndroidTV, tvOS, Samsung, and LG, OM SDK is paving the way toward standardized video impression measurement worldwide.

Ultimately, addressing the challenges of cross-channel measurement will require the entire industry to come together and advocate for adopting standardized measurement practices and definitions. By working towards a unified measurement approach, advertisers can make better decisions, allocate budgets more effectively, and ultimately improve the performance of their video campaigns across all channels. Tools like OM SDK represent significant progress in this direction, helping the industry align on shared standards and improve transparency, consistency, and reliability in video measurement across all digital and connected TV platforms.

Conclusion

Measuring video ad impressions across digital and linear platforms remains a complicated and fragmented process. Each platform—whether web, social, CTV, or linear TV—handles impressions in its own way, applying different methods and standards for counting, viewability, and validation. These inconsistencies present challenges for marketers trying to accurately assess the performance of their campaigns, especially when comparing data across channels. With video ad spend continuing to surge, there's a growing urgency to bring more clarity and consistency to how impressions are defined and reported.

As we've outlined, discrepancies in impression definitions make it difficult to establish a comparable baseline for cross-platform measurement. Different points in the ad-serving process, varying privacy practices, and the unique technical environments of each platform all contribute to the complexity of tracking impressions. This lack of standardization introduces confusion when evaluating how well a campaign reaches its intended audience.

However, addressing these challenges takes time and effort, especially for publishers and platforms. Achieving MRC accreditation, which offers the highest level of transparency and trust, requires a high investment and can take months to achieve. This would ensure that measurement practices align with established standards, and many of the issues in cross-platform and cross-channel measurement could be mitigated if platforms adhered to industry standards and guidelines. The complexity of re-engineering legacy systems to meet these standards can further complicate the process, as platforms face significant technical dependencies that make it difficult to change how impressions are logged and tracked. While these barriers are real, avoiding such rigorous standards contributes to the ongoing lack of consistency, ultimately harming the ecosystem.



Addressing this issue starts with transparency. Any platform or company that is not accredited should explicitly state how they define and measure impressions. Being upfront about whether impressions are counted at the delivery, rendering, or validation stage is crucial to improving reporting accuracy. Non-accredited MRC vendors must be scrutinized, adopt industry standards and guidelines for counting impressions, and be encouraged to be accredited.

Beyond individual platform transparency, the industry must push towards using the same common definitions and measurement standards for impressions that exist universally. Many platforms still need to follow established guidelines from organizations like IAB and MRC. Measurement companies, in particular, need to be clear about their methodologies—whether they use device signals, cookies, panel-based, statistical data, ACR, etc. These distinctions are important to understand and should be disclosed more openly. By pushing for greater transparency in how impressions are defined and reported, the industry can make more meaningful progress in achieving accurate measurement across platforms.

Please refer to the Appendix for a detailed checklist for video ad buyers with key questions to ask partners in the ecosystem to understand better how impressions are defined and reported.

Establishing transparency is a good start, but the larger goal - and deeply complex to execute - is adopting current standards. A shared set of principles for counting impressions benefits everyone in the advertising ecosystem. It allows for more reliable comparisons between platforms, improves confidence in campaign metrics, and enables advertisers to make more informed decisions about where and how to allocate their budgets.

While this paper has focused on measuring impressions, it's important to recognize that other key metrics, such as Reach and Frequency, are equally or more complex. Measuring Reach, which attempts to identify the unique individuals exposed to an ad, and Frequency, which tracks how often the same user encounters the ad, are particularly challenging in today's multi-device environments. With users switching between different devices and platforms and shared environments like households, achieving accurate counts for these metrics is far from straightforward. On top of that, there is a complex layer of identity solutions in the ever-changing privacy landscape.

Given the distinct challenges associated with each of these metrics, we believe they deserve focused attention in their own right. That's why IAB will release forthcoming white papers that dive into Reach and Frequency, exploring the unique difficulties and solutions for each. By addressing these metrics individually, we aim to clarify how advertisers can navigate the complexities of cross-channel video measurement.

Ultimately, transparency and industry-wide adoption of measurement standards and compliance are essential steps toward resolving the issues in impression measurement. As platforms, advertisers, and measurement companies work together to define and report metrics consistently, we can move toward a more reliable and accurate understanding of video campaign performance across all channels.



Appendix

UNDERSTANDING HOW AD IMPRESSIONS ARE MEASURED ACROSS DEVICES AND PLATFORMS

The table below breaks down the methods used for determining an individual's impressions or user impressions, the common metrics reported, and specific challenges associated with each environment.

ENVIRONMENT	METHOD FOR DETERMINING AN INDIVIDUAL'S IMPRESSION	METRIC(S) REPORTED	REPORTING CHALLENGES
Desktop	Data signals collected through JavaScript tags, pixels or SDKs	Ad Impressions, Reach (deduplicated)	Privacy measures may limit the effectiveness of client-side tracking methods. Also, cookies are browser-specific, so one individual could be counted multiple times using different browsers (e.g., Safari and Chrome on the same device). Cookies can also be deleted or expire.
Mobile Web (browser-based)	Data signals collected through JavaScript tags, pixels or SDKs	Ad Impressions, Reach (deduplicated when possible)	Mobile browsers handle cookies differently (e.g., Safari's cookie limitations). Users could be counted multiple times across different browsers on the same device.



ENVIRONMENT	METHOD FOR DETERMINING AN INDIVIDUAL'S IMPRESSION	METRIC(S) REPORTED	REPORTING CHALLENGES
Mobile App	Primarily device IDs (e.g., IDFA, AAID); First-party data identifiers, when available	Ad Impressions, App-Specific Reach (deduplicated when possible)	Privacy settings (e.g., Apple's App Tracking Transparency) limit cross-app measurement. Opt-out reduces access to consistent identifiers. Users could be counted multiple times across different apps on the same device.
CTV/OTT	Device IDs or user logins (e.g., Roku, Amazon Fire TV)	Ad Impressions, Reach (deduplicated when possible)	Shared devices in households complicate determining individual impressions. Users could be counted on multiple devices with different IDs. Co-viewing is also a challenge.
Linear Television	Panel-based measurement, set-top box data, and ACR	Estimated Reach (mainly based on panel extrapolation)	Panel data offers estimates, not precise user-level tracking. Difficult to track individual viewers within households.



DETAILED CHECKLIST FOR VIDEO AD BUYERS: KEY QUESTIONS TO UNDERSTAND HOW IMPRESSIONS ARE DEFINED AND REPORTED

This checklist is designed to help video ad buyers ask the right questions to ad-serving platforms, ad tech providers, publishers, and measurement companies. It ensures clarity and transparency in how impressions are defined, measured, and reported across different video channels, including web, social, CTV, and linear TV. By addressing the following questions, buyers can make informed decisions about where to allocate budgets and how to measure the success of their campaigns.

1 Impression Definition and Counting Methodology

1. How do you measure and report a video impression?
 - Does your definition align with [IAB/MRC](#) guidelines for valid impressions?
 - Do you use signals from the Open Measurement SDK?
2. At what specific stage is an impression counted?
 - Is it counted when the ad is requested, transmitted, rendered, or after being viewed for a specific duration (e.g., 2 seconds for video)? As a reminder, ad requests and responses are not compliant impressions.
3. Do you distinguish between different types of impressions?
 - Ad rendered impressions, valid impressions (after invalid traffic filtering), and viewable impressions (after meeting viewability criteria)?
 - Do you report Gross Impressions (before filtering for invalid traffic) or Net/Total Net Impressions (after filtering)?

2 Ad Viewability

1. If the publisher is not accredited, how do you measure ad viewability?
 - What criteria do you use to determine if an ad is viewable (e.g., percentage of pixels in view, duration in view)?
 - Does your definition of viewable impressions follow IAB/MRC standards (e.g., 50% of pixels in view for 2 seconds for video)?
 - Do you support Open Measurement SDK and is your integration certified by IAB Tech Lab?
2. Do you distinguish between served impressions and viewable impressions?
 - Are viewable impressions reported separately from Net impressions?
 - Do you provide a viewability rate (percentage of impressions that meet viewability standards)?



3 Invalid Traffic (IVT) Filtering

1. What measures do you take to filter out invalid traffic (IVT)?
 - Are you filtering for both General Invalid Traffic (GIVT) and Sophisticated Invalid Traffic (SIVT)?
 - How do you detect and prevent invalid impressions (e.g., bots, fraudulent traffic)?
 - How are IVT impressions accounted for and excluded from reporting?
2. Do you follow MRC's IVT Standards for traffic filtering?
 - Is your platform certified or accredited by the MRC for invalid traffic detection and filtering?

4 Cross-Device and Cross-Platform Measurement

1. How do you handle cross-device measurement?
 - How do you account for users switching between devices (e.g., mobile, desktop, CTV)?
 - Are you using deterministic (login-based) or probabilistic (device-matching) methods to identify users across devices?
2. Are co-viewing scenarios accounted for in your impression counting?
 - How do you handle shared devices, such as CTV, where multiple people may be watching?
 - Are co-viewing impressions included in your reports, and if so, how are they calculated?

5 Transparency and Reporting

1. How transparent is your impression reporting?
 - Do you provide detailed reports on the methodology used to count impressions, including any filters or adjustments made?
 - Are the reports you provide accredited by an independent third party (e.g., MRC)?
2. Do you disclose all stages of the ad delivery lifecycle in your reports?
 - Ad request, ad delivery, ad rendering, valid ad impression, viewable ad impression, etc.?



6 Viewability and Completion Rates (Specific to CTV and Video Platforms)

1. How do you measure viewability in CTV environments?
 - Is completion rate or progress event used as a proxy for viewability?
2. How do you account for “TV Off” or “continuous play” issues in CTV?
 - Do you have mechanisms to ensure ads are not counted as impressions when the TV is off but the streaming device continues to play?
3. How do you measure completion rates for video ads?
 - Is the completion rate used in conjunction with viewability, and how does it affect impression counting?

7 Accreditation and Certification

1. Does MRC accredit your platform for impression measurement?
 - If not, do you adhere to industry standards, and has this been independently verified?
2. Are your methodologies for invalid traffic detection and viewability measurement independently verified?
 - Have you undergone third-party audits to validate your measurement methodologies?

8 Data Sources and Methodology

1. What data signals and methods does your platform use to measure impressions?
 - What types of data signals (e.g. JavaScript tags, SDKs, server-side logs)?
 - Are there specific device or platform considerations that impact your method for counting impressions? *Do you use any panel-based data to estimate impressions?*
 - If so, how is panel data extrapolated to estimate impressions for the wider population?
2. Are there any hybrid models (combining deterministic, probabilistic, or panel data) involved in your measurement methodology?



9 Cross-Channel Reporting and Consistency

1. How do you ensure consistency in impression counting across different channels (web video, social video, CTV, linear)?
 - Do you apply the same definitions and methodologies for counting impressions across platforms, or do they vary by channel?
 - How do you handle discrepancies between impression counts reported by the platform and those seen by third-party ad servers (e.g., agency or advertiser ad servers)?

10 Time-Shifted Viewing (Specific to Linear TV and CTV)

1. How do you account for time-shifted viewing in linear and CTV environments?
 - Do you measure impressions from viewers who watch recorded or on-demand content?
 - How are impressions counted when viewers skip through ads using DVRs or other time-shifting technologies?

11 Fraud Detection and Prevention

1. What specific measures are in place to prevent and detect fraudulent impressions?
 - Do you work with any fraud detection partners or technology providers?
 - How often are fraud detection measures updated and audited?

CLOSING CHECKLIST NOTES:

- ✓ Request access to detailed methodology documentation from platforms and measurement providers.
- ✓ Ensure that reports are independently audited or certified where possible.
- ✓ Verify that platforms adhere to IAB/MRC guidelines or have an internal methodology that matches industry best practices.
- ✓ Ask for clarity on all elements of impression measurement, from data collection to reporting, to avoid discrepancies and misinterpretations.



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About IAB

The Interactive Advertising Bureau empowers the media and marketing industries to thrive in the digital economy. Its membership comprises more than 700 leading media companies, brands, agencies, and the technology firms responsible for selling, delivering, and optimizing digital ad marketing campaigns. The trade group fields critical research on interactive advertising, while also educating brands, agencies, and the wider business community on the importance of digital marketing. In affiliation with the IAB Tech Lab, IAB develops technical standards and solutions.

IAB is committed to professional development and elevating the knowledge, skills, expertise, and diversity of the workforce across the industry. Through the work of its public policy office in Washington, D.C., the trade association advocates for its members and promotes the value of the interactive advertising industry to legislators and policymakers. Founded in 1996, IAB is headquartered in New York City.

