WHITE PAPER

# OTT Metrics that Matter

CONVIVA

Whether you're a brand, agency, advertiser, streaming platform, or publisher, in today's digital world, you need to understand streaming. We put together a guide to all things streaming metrics to help you not only understand the landscape, but also gain a competitive advantage.

In this white paper, we'll explore the metrics that matter most to:

- Marketers and social media managers —>
- Technical operations and engineering teams —>
- Business teams —>

# Metrics that Matter to Marketers and Social Media Managers

Marketers must increasingly rely on data to create better content, learn more about their target audiences, and optimize campaigns. But, because data often lives in silos on disparate platforms with no single source of truth, it can be time consuming and tedious to aggregate this data. It's even harder to analyze it, and harder still if you're also publishing streaming video. When you can combine all your social media and streaming data into one place, you can spend less time aggregating data and more time actually using it for insights and decisions. So, when you can focus on utilizing your data, what metrics matter most?

## Social Metrics

Organic and paid social media are massive parts of any marketing strategy, so it's important to track some critical metrics to ensure you're reaching the right people at the right time with the right content.

## Engagements / engagements per post or video

Engagements are likely something you already track, but we can bring together all your engagement metrics into one dashboard.

Engagements are defined as:

- Facebook: Comments + Shares + Reactions, including Likes
- Facebook Ads: Comments + Shares + Reactions, including Likes
- Instagram: Comments + Likes
- Instagram Ads: Comments + Likes
- Twitter: Replies + Retweets + Likes
- YouTube: Comments + Shares + Likes
- Snapchat: Unique Opens + Screenshots
- TikTok: Comments + Shares + Likes

You can track engagements separately by platform or cumulatively across all your channels. Engagements are important because they are the best indicator of how your audience is reacting to your content.

## Audience by platform

The same way that we combine engagement data into one dashboard, we enable tracking of your cross-platform audience growth as well

Audience is defined as:

- Facebook: The number of users who like the Page.
- Instagram: The number of followers for the account.
- TikTok: The number of followers for the account.
- Twitter: The number of followers for the account.
- YouTube: The number of subscribers to the channel.

Audience is important because you can see the growth of your accounts, while also monitoring any decreases, so you can adjust your strategy accordingly.

## Views by platform

Because what counts as a "view" can vary across platforms, it's especially critical for this metric that we combine all your views into one convenient place so that you can count views across all your video content, including ads on Facebook and Instagram. A view is defined as:

- Facebook: 3 seconds
- Facebook Ads: 3 seconds
- Instagram: 3 seconds
- Instagram Ads: 3 seconds
- Twitter: 2 seconds
- YouTube: 30 seconds
- Snapchat: 1 second

Views are another indication of engagement and content success, so it's important to keep tabs on how your videos perform on each of your channels.

## Impressions

Impressions are the number of times your content was displayed, no matter if the viewer engaged with it in any way. Impressions indicate how many people saw your content, which in itself is helpful, but can also be used in conjunction with engagements to understand the impact of your content and how well your campaigns are connecting with your target audiences.

## Competitive benchmarking and leaderboards

Another set of metrics that matter is those that indicate how you compare to your competitors. Our preconfigured and custom leaderboards allow you to see what's winning across all your brands and rivals or benchmark any public accounts you want.

## Streaming Engagement Metrics

Streaming video is another vital part of any modern marketing strategy. Here are some metrics that matter most to marketers looking to make sure content is resonating and audiences are engaging.

## Plays

Plays is the number of sessions that started playing successfully during a selected interval. It's a key metric for marketers to measure the success and engagement with a piece of content or the service overall.

## Concurrent plays

Concurrent plays is the maximum number of simultaneously active sessions during a given interval. Monitoring concurrent plays is important to help you define your audience, determine video quality, and track which customers are actively engaged with a video.

## Total minutes

Total minutes is the combined total viewing time across all devices and for all sessions that ended during the selected time range. Total minutes is a key performance indicator of the overall reach and growth of your streaming content.

## Unique devices

The unique devices metric counts the total number of unique devices that viewed at least one frame of video during a selected interval. For marketers, looking at this metric will help identify the devices viewers use most frequently so you can optimize your content for the most used devices.

## Minutes/unique device

The minutes per unique device metric is calculated by dividing the total played minutes in a selected time range by number of unique devices in that time range. Knowing which device a viewer is using and how engaged they are with your service on that device can prove invaluable when it comes to content production and strategy.

## Average percent completion

Average percent completion shows the duration viewed, as compared with the total length of the content. A high percentage indicates a high level of viewer engagement with the asset, channel, and service. This metric is one of the most valuable for marketing and content teams to understand with depth and granularity the way in which viewers engage with their content. It helps answer the big question of, “Is this content interesting and relevant for my viewers?” and can play a major role in the decisions which drive content production.

## Ended plays

An ended play is a play that ended during a specific period. There could be three reasons why a session ends; gracefully ended with or without content completion, ended due to failure, or ended to due timeout. While this metric could signal technical issues with the stream, it could also give marketers insight into what content is working—and what isn't.

## Ended plays/unique device

This metric is calculated by dividing total number of ended plays in a selected time range by number of unique devices in that time range. An increasing or higher number indicates that viewers watched more videos on the same device and your content likely experienced higher engagement. Understand the correlation between viewer engagement and devices to better optimize player performance, identify viewers' device preferences, and know the screens your customers are most likely to use to engage with your content.

## Authenticated and Non-authenticated Data

Another set of metrics that are important to marketing and social teams have to do with authenticated versus non-authenticated data.

Non-authenticated data, which can also be known as public data, is the data that can be gleaned from the public profile of any social account. This includes likes, comments, views, shares, followers, post count, and any other metric that can be found by looking at what is available on any post. This information differs among social networks and can be helpful to understanding your content, but it does not tell the full story.

Authenticated data is all the information that isn't public information. This includes but is not limited to; impressions, watch time, average view percentage, URL clicks, follows from specific content, completion rate, video-share rate, and many more. Authenticated data can only be accessed by companies or that have permission to do so, both from the user and the social network. Certain companies like Conviva have agreements with these social platforms that allow us to access this type data. For example, Conviva is one of only seven, Facebook Media Measurement Partners. But even if a company has the ability to access these metrics, they cannot do so until the owner of the account authenticates their account into their analytics platform. This process is usually as easy as a few button clicks but can make all the difference when you really want to understand the true performance of your content.

# Authenticated vs. Non-authenticated Metrics

The following are data metrics that are available in Conviva Social Insights Analytics for Facebook, Instagram, Twitter, and YouTube. Specific metrics do not require authentication as they are available publicly, while others do in order to be pulled into Conviva Social Insights.

**Facebook**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Likes | ● | |
| Reaction (Non Likes) | ● | |
| Comments | ● | |
| Shares | ● | |
| Engagements | ● | |
| Engagement Rate | ● | |
| Engagements / Post | ● | |
| Activity | | ● |
| Activity Unique | | ● |
| Audience | | ● |
| Auto Play % | | ● |
| Average Minute Audience (AMA) | | ● |
| Average Views/Video | | ● |
| Average Watch Time | | ● |
| Click to Play % | | ● |
| Completion % | | ● |
| Engagements / Sec | | ● |
| Engagements (including Post Clicks) | | ● |
| Impressions (Total) | | ● |
| Impressions (Organic) | | ● |
| Impressions (Paid) | | ● |
| Link Clicks | | ● |
| Post Clicks | | ● |
| Live Views | | ● |
| Minutes Viewed | | ● |
| Minutes Published | | ● |
| Minutes Consumed Male | | ● |
| Minutes Consumed Female | | ● |
| Consumed Age Range | | ● |

**Facebook**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Minutes Consumed by Location | | ● |
| Organic Video Views (total) | | ● |
| Paid Video Views (total) | | ● |
| Peak Concurrent Viewers | | ● |
| Posts Made | | ● |
| Reach (Total) | | ● |
| Reactions by Type Total Likes | | ● |
| Reactions by Type Total Love | | ● |
| Reactions by Type Total Wow | | ● |
| Reactions by Type Total Haha | | ● |
| Reactions by Type Total Sad | | ● |
| Reactions by Type Total Anger | | ● |
| Total Link Clicks | | ● |
| Total Reactions | | ● |
| Total Comments | | ● |
| Total Shares | | ● |
| Total Minutes Streamed | | ● |
| Total Minutes Consumed | | ● |
| Shares | | ● |
| Sound Off % | | ● |
| Sound On % | | ● |
| Video Length | | ● |
| Video Viewers by Location | | ● |
| Viewer Conversion Rate (VCR) | | ● |
| Views (3s) | | ● |
| Views (10s) | | ● |
| Views (30s) | | ● |
| Views (Complete) | | ● |
| Views (Repeat) | | ● |
| Views (Unique) | | ● |

**Facebook Total Video Metrics**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Video Views | | ● |
| Unique Viewers | | ● |
| Average Watch Time | | ● |
| New Fans Added | | ● |
| Average Video Views / Day | | ● |
| Daily Active Unique Viewers | | ● |
| Total Minutes Consumed | | ● |
| Total Engagements | | ● |
| Date Posted | | ● |
| Video ID | | ● |
| Video Title | | ● |
| Post Message | | ● |
| Lifetime Video Total Impressions | | ● |
| Lifetime Total 3 Second Video Views | | ● |
| Lifetime Total 10-Second Views | | ● |
| Lifetime Total Video Watches at 95% | | ● |
| Lifetime Organic Video Views | | ● |
| Lifetime Paid Video Views | | ● |
| Lifetime Unique Video Views | | ● |
| Lifetime Repeat Video Views | | ● |
| Lifetime Reach (Unique Video impressions) | | ● |
| Lifetime Total Video Average Watch Time | | ● |
| Lifetime Total Video View Time (minutes) | | ● |
| Page Owned Views | | ● |
| Shared Views | | ● |
| Crossposted Views | | ● |
| Page Owned Viewtime (in MS) | | ● |
| Shared Viewtime (in MS) | | ● |
| Top Gender by Seconds Viewed | | ● |
| Top Age Range by Seconds Viewed | | ● |
| Top City by Seconds Viewed | | ● |
| Completion Rate | | ● |
| View-Conversion (Video Views / Video Impressions) | | ● |
| Total Engagements | | ● |
| Likes | | ● |

**Facebook Total Video Metrics**
Continued

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Comments | | ● |
| Reactions | | ● |
| Shares | | ● |
| Engagement Rate | | ● |
| Video-Share Rate | | ● |
| Post IDs that Reused the Video URL | | ● |

**Instagram**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Engagements | ● | |
| Engagements (Organic) | ● | |
| Engagements / Post | ● | |
| Likes | ● | |
| Comments | ● | |
| Engagement Rate | ● | |
| Engagements | ● | |
| Engagements (Organic) | ● | |
| Engagements / Post | ● | |
| Video Views | | ● |
| Video Views (Paid) | | ● |
| Video Views (Organic) | | ● |
| Engagments (Paid) | | ● |
| Impressions | | ● |
| Impressions (Paid) | | ● |
| Impressions (Organic) | | ● |
| Reach | | ● |
| Saved | | ● |
| Average Reach/Post | | ● |
| Frequency | | ● |
| View-Conversion Rate | | ● |

**Instagram Stories Analytics**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Average Reach (Account Level) | | ● |
| Average Reach Rate | | ● |
| Impressions | | ● |
| Peak Unique Reach | | ● |
| Reach (Frame) | | ● |
| Reach (Story) | | ● |
| Reach Rate | | ● |
| Taps Backward | | ● |
| Taps Forward | | ● |
| Exits | | ● |
| Replies | | ● |
| Completion Rate | | ● |

**Twitter**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Public Engagements | ● | |
| Engagements / Post | ● | |
| Likes | ● | |
| Retweet | ● | |
| Total Video Views | ● | |
| Engagement Rate | ● | |
| Public Engagements | ● | |
| Media Engagements | | ● |
| Tweet Engagements | | ● |
| Replies | | ● |
| Impressions* | | ● |
| Post Organic Video Views | | ● |
| Media Views | | ● |
| URL Clicks | | ● |
| App install attempts | | |
| App Opens | | |
| Detail expands | | |
| Follows | | |
| Hashtag clicks | | |
| User profile clicks | | |
| Shared via email | | |

**Twitter Video Analytics (Twitter Media Studio)**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Date | | ● |
| Video Id | | ● |
| Title | | ● |
| Total Video Views | | ● |
| Organic Video Views | | ● |
| Promoted Video Views | | ● |
| Total Completion Rate | | ● |
| Organic Completion Rate | | ● |
| Promoted Completion Rate | | ● |
| Organic Playback Starts | | ● |
| Organic Playback 25 | | ● |
| Organic Playback 50 | | ● |
| Organic Playback 75 | | ● |
| Organic Playback Completes | | ● |
| Organic CTA Clicks | | ● |
| Promoted Playback Starts | | ● |
| Promoted Playback 25 | | ● |
| Promoted Playback 50 | | ● |
| Promoted Playback 75 | | ● |
| Promoted Playback Completes | | ● |
| Promoted CTA Clicks - | | ● |
| Playback Starts - | | ● |
| Playback 25 | | ● |
| Playback 50 | | ● |
| Playback 75 | | ● |
| Playback Completes | | ● |
| CTA Clicks | | ● |
| Duration | | ● |
| Organic Average Watchtime | | ● |
| Promoted Average Watchtime | | ● |

**YouTube**

| Metric | Non Authenticated | Authenticated |
|---|---|---|
| Videos Made | ● | |
| Total Views | ● | |
| Views/Video | ● | |
| Engagements | ● | |
| Engagements/Video | ● | |
| Engagement Rate | ● | |
| Likes | ● | |
| Dislikes | ● | |
| Comments | ● | |
| Duration | ● | |
| Content Category | ● | |
| YouTube Tags | ● | |
| Avg. View Percentage | | ● |
| Avg. Watch Time/ Video | | ● |
| Minutes Viewed | | ● |
| Shares | | ● |
| Subscribers Gained | | ● |
| Subscribers Lost | | ● |
| Net Subscribers | | ● |
| Video Viewers by Playback Source | | ● |

Data is more important than ever for marketers, but it must be actionable to be worthwhile. That's why Conviva gives you a seamless way to map the full customer journey cross your social media channels to owned video players, mobile apps, and sites—all in one place.

# Metrics that Matter to Technical Operations and Engineering Teams

Technical operations teams are often the first and last line of defense when it comes to delivering flawless streaming experiences. So, it's important to pinpoint the metrics that matter most when monitoring performance and diagnosing issues.

Here are the top five metrics tech ops teams need to know:

## Streaming Performance Index (SPI)

Conviva's proprietary SPI score looks at benchmark thresholds and grades the overall quality of every stream based on video start failure (VSF), exits before video start (EBVS), rebuffering ratio, video playback failures (VPF), video startup time (VST), and picture quality. Exclusive to Conviva, SPI is a great metric for tech ops because it can be broken down by different dimensions, such as device and country, to better understand the experience across audience segments and endpoints. In addition to providing a score, benchmarks contextualize the score so that you can quantify how your performance ranks compared to your industry peers.

## Rebuffering ratio

Rebuffering is when the video stalls during playback and the viewer must wait for the video to resume playing. Frequent rebuffering is a major source of poor quality of experience and often leads to audience abandoning the content. A consistently high rebuffering ratio or a significant increase in this metric can be an indication of declining overall network performance and the likelihood of viewer churn. It is a quick representation of the overall quality of a viewer's experience.

Conviva measures rebuffing ratio on all dimensions, including for both content and ads, so you can understand which piece of your delivery puzzle is impacting the greatest number of viewers. This metric can also be used to diagnose and troubleshoot parts of the delivery network as the root cause of high rebuffering.

## Video playback failures (VPF)

Video playback failure occurs when video play terminates due to a playback error, such as video file corruption, insufficient streaming resources, or a sudden interruption in the video stream. VPFs are an important measurement of service quality and audience engagement, especially when a large percentage of plays terminate due to VPF. It represents the worst possible experience a viewer can have because it interrupts the stream completely so they can't watch. Because of this, it's an extremely important metric to monitor and troubleshoot.

## Attempts

Attempts counts all endeavors to play a video which are initiated when a viewer clicks play or a video auto-plays. Paired with other metrics, attempts can show you a wide variety of issues; how many attempts were made versus successful plays, failed plays, and everything in-between.

It's important to know attempts for two other reasons. First, you want to know how many plays or auto-plays your content received, and you also want to know the percentage that were successful. By comparing attempts with successful video starts, you can quickly identify specific content or ads with encoding problems, player problems, or ad errors to diagnose the root cause resulting in a drop off in engagement at the beginning of a viewer session.

## Concurrent plays

Concurrent plays is the maximum number of simultaneously active sessions during a given interval. Monitoring concurrent plays is important to help you define your audience, determine video quality, and track which customers are actively engaged with a video. Concurrent plays is very helpful when planning network capacity for large-scale live events such as sporting events, premieres, etc. For tech ops, it's particularly important to see whether peak concurrency played a factor in a quality of experience issue or even caused the issue.

As the team responsible for ensuring a flawless experience for everyone, on every screen, every time, tech ops teams have a lot of weight on their shoulders. With access to the right metrics and a full understanding of network performance and viewer experience, the job of tech ops will be much easier, more efficient, and more effective.

# Metrics that Matter to Business Teams

While many of metrics can be measured for an individual show, viewer, or device, now we'll focus on the metrics that can keep both business and technical teams informed on the overall performance of content and quality of experience (QoE) when measured across an entire streaming service. These metrics can help drive business decisions to increase viewer engagement, reduce subscriber churn, and elevate the customer experience.

## Understanding total performance

### Attempts

Attempts counts all attempts to play a video which are initiated when a viewer clicks play or a video auto-plays. An attempt can result in a success play, or an early termination due to a video start failure (VSF) or an exit before video start (EBVS). It's important to know attempts for two reasons. First, you want to know how many plays or auto-plays your content received, and you also want to know how many of those were successful. By comparing attempts with successful video starts, TechOps can quickly identify specific content or ads, which through either encoding problems, player problems, or ad errors, can diagnose the root cause resulting in a drop off in engagement at the beginning of a viewer session.

### Plays

A play is tallied when the viewer sees the first frame of video and does not include unsuccessful attempts to play. This metric shows the number of plays that started during a selected time period. As a percentage, this metric shows the percentage of attempts that resulted in plays in the selected interval.

### Active plays

Active plays is the number of sessions that started playing successfully and are not closed within a given time interval. Active plays is a key metric which, among many use cases, can be utilized to measure the success and engagement of live events in real-time. This metric can help TechOps and engineering teams conduct capacity planning ahead of future events as well as drive content decisions around the shows that drove the highest viewer engagement.

### Concurrent plays

Concurrent plays is the maximum number of simultaneously active sessions during a given interval. Monitoring concurrent plays is important to help you define your audience, determine video quality, and track which customers are actively engaged with a video. Concurrent plays is particularly helpful when planning network capacity for large-scale live events such as sporting events, premieres, etc.

### Total minutes

Total minutes is the combined total viewing time across all devices and for all sessions that ended during the selected time range. Total minutes is a key performance indicator measured daily, weekly, monthly, or any other specified time range and is a clear indicator of the overall growth of your streaming service.

### Unique devices

The unique devices metric counts the total number of devices that viewed at least one frame of video during a selected interval. Looking at these metrics helps to identify the devices viewers use most frequently to consume your content and can be used to prioritize application development on the devices seeing the most traffic.

### Minutes/unique device

The minutes per unique device metric is calculated by dividing the total played minutes in a selected time range by number of unique devices in that time range. Knowing which device a viewer is using and how engaged they are with your service on that device can prove invaluable when it comes to troubleshooting issues with customer care.

### Average percent completion

Average percent completion shows the duration viewed compared with the total length the content. A high percentage indicates a high level of viewer engagement with the asset, channel, and service. This metric is one of the most valuable for content teams to understand with depth and granularity the way in which viewers engage with content. It helps answer the big question of, "Is this content interesting and relevant for my viewers?" and can play a major role in the decisions which drive content production.

### Video start failures (VSF) — business and technical

VSF measures how often attempts terminated during video startup before the first video frame was played and a fatal error was reported. If your business is working towards enforcing shared subscriber accounts, the VSF-Technical error lets you segment out errors related to that enforcement, so your TechOps team isn't chasing problems that aren't actually the result of network or stream issues.

### Streaming Performance Index (SPI)

SPI is an aggregate score that looks at benchmark thresholds considered "good" or "bad"—grading the overall quality of every stream for a number of quality of experience metrics including video start failure (VSF), exits before video start (EBVS), rebuffering, video playback failures (VPF), video startup time (VST), and picture quality. SPI can be broken down by different dimensions such as device and country to better understand the experience across audience segments and endpoints. In addition to providing a score, benchmarks contextualize the score so that you can quantify how your performance ranks compared to your industry peers.

## Measuring quality of experience

It's not hard to surmise that a poor viewer experience impacts viewer engagement and therefore churn and ad dollars. These metrics, either on their own or correlated against other metrics, will instantly identify areas where your stream is underperforming and resulting in a not-so-great viewer experience.

### Ended plays

An ended play is a play that ended during a specific period. There could be three reasons why a session ends; gracefully ended with or without content completion, ended due to failure, and ended to due timeout. Other metrics, such as VSF, will help you determine if ended plays are due to quality issues or not. Ended plays can be combined with other QoE metrics to determine why a viewer stopped watching. It's totally normal for someone to end a show on their own accord, but when an ended play was the result of a failure in the stream, that needs diagnosing to ensure similar viewers aren't having the same problem.

### Ended plays/unique devices

This metric is calculated by dividing total number of ended plays in a selected time range by number of unique devices in that time range. An increasing or higher number indicates that viewers watched more videos on the same device and your content likely experienced higher engagement. Understand the correlation between viewer engagement and devices to better optimize player performance, identify viewers device preference, and know the screens your customers are most likely to engage with your content on.

### Video startup time (VST)

Video startup time is the number of seconds between when the user clicks play or video auto-starts and when the first frame of a video is rendered, excluding any pre-roll ads. Any ad startup time and ad playback are not counted toward VST. If content is pre-fetched in the background while an ad is playing, this buffering is not counted toward VST because it is not perceived by the user.

### Video restart time (VRT)

Video restart time is the number of seconds after user-initiated seeking until video begins playing. Seek occurs when a viewer scrubs the play bar, fast forwards, or rewinds the video. You can use the VRT metric to monitor unnecessary delays in video access after user-initiated seeks. These delays often lead to session abandonment.

### Rebuffering ratio

Rebuffering occurs when the video stalls during playback and the viewer must wait for the video to resume playing. Frequent rebuffering is a major source of poor quality of experience and often leads to audience abandonment. A high rebuffering ratio or a significant increase in this metric can be an indication of declining overall network performance and the likelihood of viewer abandonment. Conviva measures rebuffing ratio on all dimensions, so you can understand example which piece of your delivery puzzle is impacting the greatest number of viewers. For customer–obsessed teams, this metric can be a great universal indicator for how "good" the viewer experience is. Understanding impacted viewers of a rebuffering issue means customer care teams can provide nurture campaigns to viewers subject to a poor experience. This metric can also be used to diagnose and troubleshoot parts of the delivery network as the root cause of high rebuffering.

### Video playback failures (VPF) — business and technical

Video playback failure occurs when video play terminates due to a playback error, such as video file corruption, insufficient streaming resources, or a sudden interruption in the video stream. VPFs are an important measurement of service quality and audience engagement, especially when a large percentage of plays terminate due to VPF. Conviva, for example, has additional metrics to track video playback failures due to business logic, such as user account limits or technical playback issues.

### Exits before video start (EBVS)

EBVS measures the attempts that terminated before the video started—without a reported fatal error. If a fatal error is reported when the video terminates before starting, the video termination is counted as a VSF instead of EBVS. The most common reason for EBVS is that content isn't loading fast enough. There are many reasons that could cause this problem and drilling down from EBVS is an extremely efficient way for TechOps teams to diagnose one of the most frustrating viewer experience pitfalls in streaming media—a black screen.

### Average bitrate

Average bitrate calculates the bits played by the player. The bits played do not include bits in buffering or bits passed during paused video. Typically, the higher the bitrate, the better the image quality and viewer experience. By looking at bitrate across content, devices, player software, CDNs, and more, business teams can pinpoint the places causing poor bitrate and plan for optimizing those areas. For example, identifying a specific player device with drastically worse average bitrate could be an indicator to product teams that a specific device or app software version may need optimization.

### Average frame rate

Average frame rate measures the average number of decoded frames, in frames per second (fps), played by the player. Typically, the higher the frame rate the better the image quality and viewer experience. Underperforming frame rate can be a clear indicator of an encoding problem on media assets.

### Rendering quality

Rendering quality is the ratio (as a percent) of video rendering rate to encoding rate. For example, if the rendering rate is 20 frames/sec and the encoded rate is 24 frames/sec, the rendering quality is 83.3%. The rendering rate can differ from the encoded rate because the player will skip frames while a video is being screened if it can't get them quickly enough. This metric can help you determine if your rendering rate and encoding rate are appropriate.

### Bandwidth

Bandwidth is the aggregate bandwidth across all videos for a selected time range. The bandwidth metric can be used to identify underperforming CDNs and ISPs across the overall delivery of your streaming service while also being a very valuable metric on the individual viewer level, which is crucial for customer care. For example, when attempting to diagnose whether a viewer performance issue is caused by an upstream provider versus the last mile.

Understanding exactly what your viewers are experiencing enables teams to understand viewer engagement as well as diagnose and optimize stream performance to ensure a flawless experience for everyone, on every screen, every time.

Because brands and publishers can now cultivate direct relationships with consumers like never before through social media and streaming platforms, data and metrics will be the key to knowing how to reach new audiences and keeping them tuned in. And it's important to have the most accurate and timely data to inform those metrics in the first place and the right tools to help you analyze and leverage that data.

Learn more about how Conviva can help you build, engage, and monetize your social, streaming, and ad audiences:
https://www.conviva.com/streaming-insights-platform/