

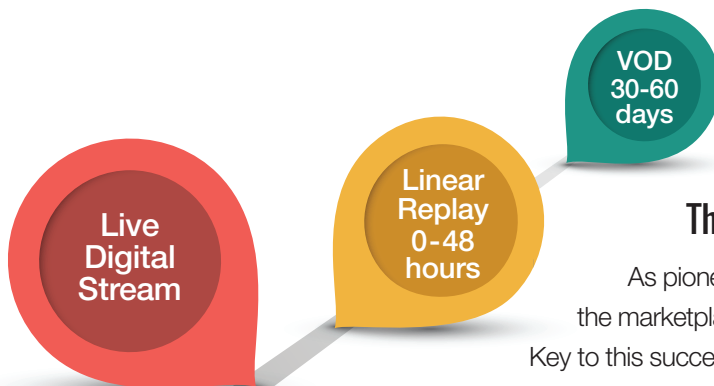
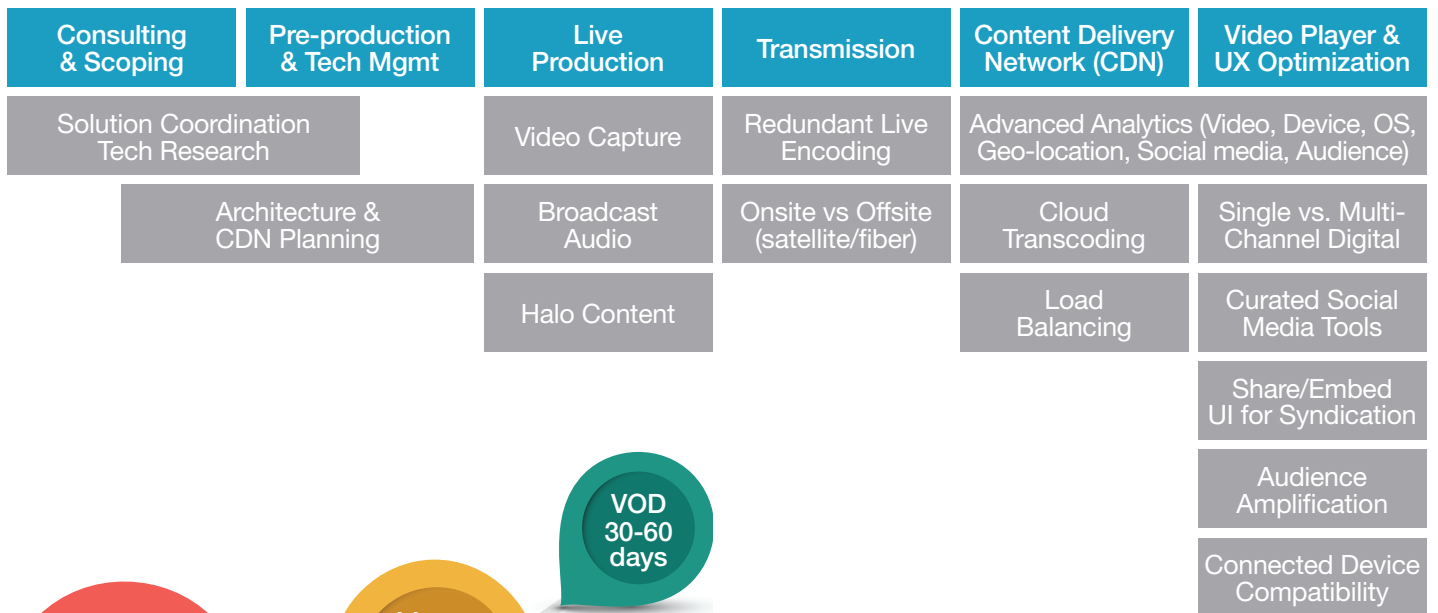
Bulldog DM Best Practice Livestreaming Strategy

The Bulldog DM best practice stack is the market-leading methodology for the execution and turnkey digital broadcast of premium live content experiences — concerts, sports, red carpets, conferences, music festivals, product launches, enterprise announcements, and company town halls.

This document lays out the Bulldog DM approach, expertise, and tactical strategy to ensuring the highest caliber experience for all stakeholders — brand, fan, content creator and viewing platform.

The Bulldog DM strategy combines a decade-plus of delivering and presenting the most watched and most innovative livestreamed experiences and allows content owners and content services providers to digitally broadcast and deliver their premium content experiences and events with precision and distinction to any connected device.

livestream workflow and digital value chain



Three-phase approach

As pioneers and experts in livestreaming, Bulldog DM stands alone in the marketplace in optimizing content experiences and driving maximum ROI. Key to this success is presenting experiences in three phases.

The first is the actual live experience using our best practice and optimization tactics. Second, while presenting the live experience we can capture the content and offer an immediate simulated live replay or rebroadcast for multiple plays, hours or days to further capitalize on the social buzz surrounding the experience and engage users in additional time zones and territories.



Finally, during the replay phase we can process and create VOD clips and highlights from the experience for immediate publishing into social media channels and preferred publishers. We have a rich history in publishing video content quickly and at the highest-possible quality. The three-phase presentation strategy provides optimal relevancy and engagement.

We produce the live content and offer an immediate simulated live rebroadcast for multiple plays, hours or days to further capitalize on the social buzz surrounding the experience.

why Bulldog DM?

The trends

- Global pandemic has fueled a livestreaming record breaking explosion
- Millennials and Gen Z are proving to be robust consumers of live video
- By 2025 there will be 25.2 Billion connected devices up 177% from 2018. (App Annie)
- Social media platforms have all optimized for livestreaming

BDM is the most experienced team in the industry to execute against these trends

The process

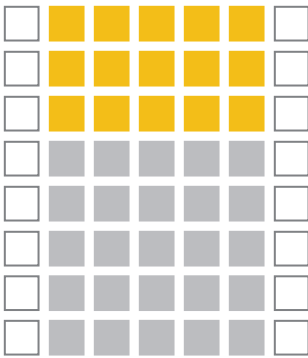
- Thorough pre-planning analysis
- Review of the engagement objectives — reach, engagement, calls to action etc.
- Design of a best practice solution — marrying the correct technologies and systems to exceed desired results
- Process management — coordination and management of the production workflow, streaming workflow, user experience, distribution landscape and optimization services
- Analytics — data and metrics that reflect the engagement ROI

The result

- Optimization at scale of premium livestreamed content experiences driving impactful engagement

consulting, scoping, pre-production + technical management

While we prefer an
8-plus-week lead time,
we are comfortable
executing in as little
as three weeks.



Research + scope definition

Bulldog DM is retained in advance to work with clients to ensure technical solutions align with creative and business objectives of the project. We leverage partnerships with best in class technology providers vetted during our two decade-plus experience in executing and optimizing live digital broadcasts.'

High-level strategy and tactical plan

As lead time is paramount, our best practices are flexible, modular, and most importantly, scalable. We can shape any content strategy to align with the specific goals of not only an individual live-streamed event but an entire campaign or series. Our core strength lies in managing the multiple technologies and teams put in place to achieve a project or client's goal, ensuring seamless integration under one roof at Bulldog DM.

Distribution, architecture, and planning

One of the key advantages of working with Bulldog DM is our ability to look at the big picture and apply it to the small details. By analyzing a client's streaming strategy across their existing social video platforms, managing the technical architecture and optimizing the content delivery network (CDN) with the production and user experience scope under one roof, we are able to scale resources and costs efficiently.

Identify cost efficiencies within any budget

Do you already have a CDN or video platform account set up for livestreaming?
Are you able to commit to a set volume of content delivery in advance? Does your company have in-house production or streaming resources?

Bulldog DM is platform and production-agnostic meaning we strive to find the right solution and fit for any project, show, campaign, or series to minimize costs while maximizing ROI and audience engagement.

live social media distribution

Reach your audience where they already consume video

One of the biggest advancements in live-streamed video content lately is the proliferation of multicasting across social media platforms. This allows brands and content owners to deliver live video directly to users who already follow them. By eliminating the barrier between where the live content gets promoted and where it lives, users have more options to consume and interact with live video and livestream creators have access to more tools and analytical insights than ever before.



Facebook

Since it debuted in 2016 Facebook Live has been the fastest-growing and easiest way to reach viewers. The platform is optimized for easy-to-find live content as it promotes it as higher priority within the news feed's algorithm as well as sending notifications to users who follow a page that goes live, whether it's a scheduled event or spontaneous broadcast. Facebook's built-in community also allows for meaningful interactions during a livestream: taking users' comments and questions for on-air material. Interactive third-party tools can be deployed to display user comments, real-time poll results and trending topics as graphic overlays on the live video stream based on comments, emoji reactions and hashtags. While the overall number of viewers on Facebook Live is usually impressive, the engagement and watch times tend to be lower on average than other platforms due to the immense amount of content available on Facebook. A truly engaging, high-end, well-produced livestream can buck that trend and keep users around for longer periods of time.



YouTube

YouTube gave influencers, brands, and users the ability to livestream video long before any of its competitors. As a result, it has the most robust live video platform in terms of video quality and available broadcaster tools. With the ability to stream in stunning 4K (2160p) resolution as well as 360 or 180 VR and interactive tools like user chat and super chat, which allows users to pay to have their chat message promoted, YouTube offers by far the most out-the-box livestreaming tools available to video creators. While the live video quality and stability on YouTube is second-to-none, the biggest issue compared to other social platforms is discoverability. As a result creators will often see fewer overall viewers compared to Facebook Live but with longer engagement and video view times, often at the highest resolution/video quality available.



LinkedIn

LinkedIn's entrance into the livestreaming market has seen noteworthy success with enterprises now broadcasting a wide range of live programming. LinkedIn is reporting that livestreams are averaging 24X more comments and 7X more reactions than native video by the same page. The platform is now available for global viewing and includes real time notifications to increase discovery and



viewership with further roadmap enhancements expected.



Twitter

Twitter has offered the Producer product since 2016 as well, hoping to rival Facebook in terms of ease of use and promotion within the Twitter ecosystem. Twitter also partners with select content providers to feature their live-streamed video on dedicated landing pages, not just within a user's timeline. By offering several different ways to publish and distribute live video, Twitter harnesses the real-time conversation that defines the platform and applies it directly to live video to create meaningful buzz and organic reach among the world's biggest influencers.



Twitch

Twitch is the world's biggest live-streaming platform for gaming and eSports content but more and more brands and creators are producing other live video specifically for it. Taking advantage of its massive, younger, and tech-savvy user base, Twitch offers the ability to "game-ify" live video by utilizing one of its many tools — chat, scoreboards, polling and other open-sourced interactive widgets known as "Twitch Integrations" which allows live video creators the ability to keep the audience engaged and invested in the outcome of their show.



Instagram

We now have the industry first capability to livestream a fully produced broadcast on Instagram. Currently livestreaming on Instagram is limited to a camera phone however we've developed a unique ability to enable the complete broadcast. The livestream will appear as the first feature in the Instagram stories feed and followers will be notified and invited to watch the live broadcast. This service allows the content owner to enhance their Instagram strategy from simply promoting their live content to actually broadcasting and engaging with Instagram's 1 billion + users.



TikTok

One of the fastest growing apps in history surpassing 2 billion downloads in April 2020 TikTok has exploded as a favorite of Gen Z consumers initially with a growing user base across nearly all demographics and reach into over 150 countries. TikTok has begun experimenting with livestreaming in mid 2020 and appears poised to emphasize live video given the suspension of the live music touring business resulting from the pandemic. As music centered platform livestreamed music has vast potential for both reach and engagement on the platform with significant opportunities for other live content genres. Accounts must be whitelisted

in advance by TikTok for encoder-based livestreaming.

live content production

We can roll up to shows
with four production
trucks or go as small as
a few small road cases
inside a closet.

High-end video capture

Bulldog DM's Grammy award-winning production teams can facilitate complete turnkey services for the capture of the highest broadcast-quality video on any scale. From one camera to 20 or more in live or "live-to-tape" environments, we provide all the personnel, facilities and equipment needed to produce and distribute premium digital experiences to viewers anywhere, anytime, from any venue. We maintain vetted producers and technical teams based across the U.S. and abroad. We'll

capture not only the performers on stage, but also the impromptu, natural, and fun-loving performances of the fans themselves.

Multi-track broadcast audio

With a focus on music content, we bring in the best audio teams in the business to deliver a broadcast-exclusive audio mix specifically tailored for the digital end user. How a broadcast sounds is as important as how it looks. This mix is synced to our video director's line cut for streaming and can be remixed as needed after the event.

Innovation and future-proofing content

Protect your content's future possibilities by capturing it in stunning 4K (Ultra HD) and enabling Augmented Reality (AR), and/or 360-degree video experiences to

innovate your digital offering with groundbreaking new tools. We've enabled the first-ever live VR and 360 streams from a major multi-day music festival, the first livestream of an AR experience and 5G powered live content. AR, 360 and 5G can take the viewer behind AND inside the scenes in ways never seen before — standing in the photo pit at a music festival, behind the drummer, on the side of the stage, or even on a 2D camera's dolly to move with the music in immersive 360/AR.

transmission and live encoding

Redundancy is paramount

Bulldog DM's best practices determine the proper transmission and live encoding needs for any digital broadcast. We scope out all available options based on venue, budget, and broadcast duration to ensure full redundancy on all outbound transmission paths to maximize reliability and eliminate possible single points of failure in the technical workflow. Bulldog DM can leverage everything from on-site encoding, and provisioning the necessary bandwidth to support it, to satellite trucks





It's what allows a user
in London to stream and
interact with live content
originating in Los Angeles
with little or no latency.

and fiber lines in line with HD broadcast's best practices applied online.

Onsite vs. offsite encoding

Fiber? Great! No bandwidth? No problem. We can leverage all available options from on-site live encoding, and provisioning the necessary (redundant!) bandwidth to support it, to satellite trucks, fiber lines, and various IP-based signal transport methods. As venue, budget, and broadcast duration allows, Bulldog DM determines the best approach for encoding the live video content to its destination platform or network, all while maintaining full redundancy in the signal flow. The majority of our events are encoded directly on-site with the best encoding hardware and software on the market but certain instances require the transported signal to be downlinked or received at an off-site facility first before being encoded from there to its final digital destination.

Content Delivery Network (CDN)

What is a CDN? How does it work?

A Content Delivery Network (CDN) is exactly what it sounds like, ensuring digital content is delivered to the end-user with speed, precision, and quality. More importantly though, it's the backbone of the entire digital broadcast ecosystem powering everything from the live video delivery to the hosting of the video player and overall user experience. It's what allows a user in London to stream and interact with live content originating in Los Angeles with little or no latency as the CDN's primary function is to ensure that any user is pulling content from the geographically-closest edge server. The CDN is also the load-balancer that guarantees no single region or user-base overwhelms the network, distributing traffic evenly across servers to



prevent the chance of any kind of outage or content unavailability.

Cloud transcoding

CDNs have evolved over the past several years to allow us to encode a (redundant) single high-quality bitrate stream per channel into a cloud transcoding engine downstream from the origin server. This generates all streaming bitrate outputs for the manifest file in the video player, lowering on-site bandwidth requirements and overhead costs as a result.

For example, we can encode a 6-8Mbps feed at 1080p HD quality into the cloud transcoder and the individual output streams (usually at least four and as many as ten) will range anywhere from 300kbps @ 240p resolution to 3500kbps @ 1080p resolution. 4K (UHD) streaming is now possible, but end-user consumption is still minimal. It's rare, but depending on the workflow, venue, or CDN(s) utilized, you may still have to encode each individual bitrate iteration onsite, thus requiring more bandwidth.

live video player and sharable user experience

We can enable branded, white label live player technology that is fast loading and scalable to drive the content initiative.

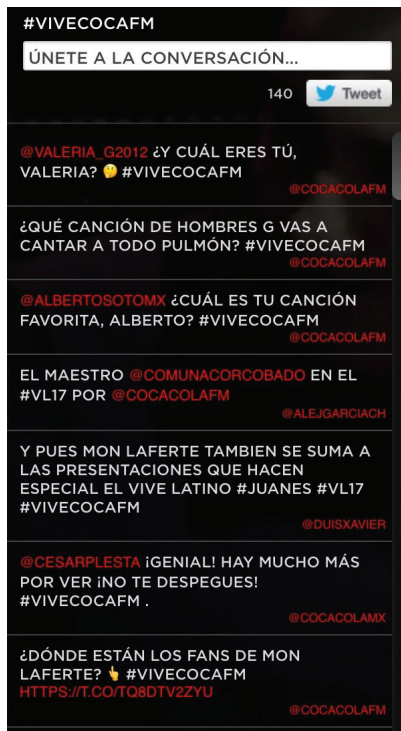
The centerpiece of the action

Live content undergoes a vastly different life cycle from VOD content. At the crux of the live content experience is the live video player. Bulldog DM has identified best-in-class live player technologies that can both scale and optimize the viewing experience that traditional VOD players are not built to support and sustain. We can enable branded, white label live player technology that is fast loading and scalable to drive the content initiative.

Going one step further, our player solutions lay the foundation for turning viewers into participants, providing options unavailable on traditional broadcast, VOD, and many other livestreaming experiences. Whether it's multiple channels of video from the same music festival, multiple camera angles from the same event, or a user-customizable multi-view/picture-in-picture features, our pioneering toolsets allow the user to play director from any location around the globe. We have significant experience enabling multiple stages from the world's most prestigious music festivals as well as award winning concert series like American Express Unstaged.



We can curate,
moderate and
aggregate the social
experience for
maximum effect.



Embeddable and sharable

One of the best ways to extend the reach and engagement of a live digital event is allowing the content to be shareable across multiple social media networks and embeddable to any website or blog. This can be accomplished a number of different ways as our intelligent embed codes can contain as many or few of the features of the main user experience as possible (detailed on the following pages). The embeddable configuration can be customized to meet the goals of any live event or campaign — exposure to as many eyeballs as possible, to drive traffic back to a central viewing hub or app, etc.

live user experience features

Participatory social experience

Bulldog DM knows that viewers want to engage in their live content experience and we've developed strategies to not only elicit participation but amplify and optimize the social aspect of an engagement. By displaying content from social media to live inside the digital experience we have found that when the social conversation is related to the video content the audience expands and engages further.

We can curate, moderate and aggregate the social experience for maximum effect. While we have found that the “most live” conversation comes predominately from Twitter and Instagram, our technology can also pull in content from Facebook, Tumblr, Pinterest, and YouTube to craft a complimentary dialog between users, artists, influencers, and brands.

Real-time user feedback via polling and trivia

The connected digital audience wants to participate in the live experience. A dynamic polling and/or trivia widget will engage the audience and spur further social conversation around the live digital event. The polling unit can be branded and skinned for a presenting sponsor and ask the audience to vote on the encore, favorite songs, finish lyrics etc. The responses can be tracked and analyzed providing insightful marketing data.

Calls to action via video player overlays

As opposed to static in-video graphics, a Call-To-Action widget allows users to interact directly with video overlays. Don't just display an artist's name — link to their website, Twitter handle, or digital music store. Don't just mention your product — provide a link to buy at the exact right moment.

Interactive schedule widgets/programming alerts

Never miss the best live moments by subscribing via an interactive schedule widget to get an alert when your favorite act, band, panelist or show is about to begin via SMS, e-mail, or push notification. This allows users to register intent to watch

as soon as they're aware of the schedule and are reminded to come back for live viewing. This is also useful for general event-level messaging, if there are changes in the schedule, and can be used to market to users for future events.

E-commerce hooks to drive sales

An integrated shopping layer allows the content owner to display relevant sales messages or add-to-cart buttons at exactly the desired moment in a livestream. Users are able to act upon their interest immediately in a product or service. This can be activated for live and on-demand video content and also provides deep intent tracking data and an option for re-marketing at a general or a per-product level.

digital device syndication and reach

Audience amplification and syndication

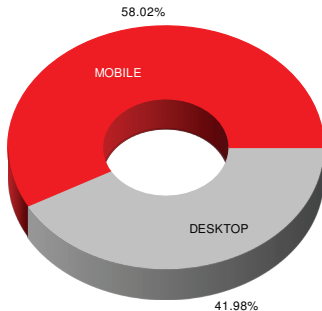
We have an extensive history in developing live experiences on multiple digital platforms and have crafted syndication and distribution to extend overall audience

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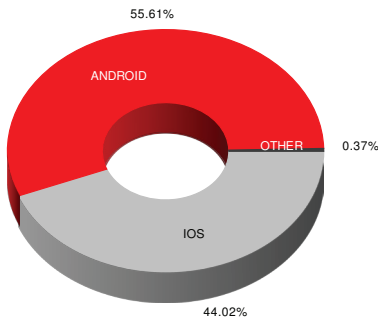


reach with the ability to guarantee thresholds of views based on desired levels via livestream amplification. By driving experiences across numerous destinations and platforms, content outlets have greater interest in presenting live digital experiences through our solutions and partners. Targeting desired demographics, building a custom and repeatable audience, and re-targeting existing users by capturing engagement data helps frame your follow-up messaging to engaged viewers. Continuing the conversation based on the attention your audience spends on your content drives prospects further down the marketing funnel to increase conversion rates for future live digital events. This allows you to build an ongoing audience base who continues to consume and share your in-demand live content.

Users: desktop vs mobile



Mobile users by platform



Compatible on all connected devices

- Mobile /tablet: iOS, Android; in-apps via SDKs and mobile browsers via simple embeds
- Gaming consoles: Playstation, Xbox
- OTT devices: Apple TV, Roku, Chromecast, Amazon Fire TV
- VR/AR headsets

advanced analytics and audience insight

Track detailed viewing metrics and user engagement

Whether your show uses an existing live platform or a custom white-label solution built from scratch, Bulldog DM knows that tracking audience participation and behavior is critical to an event's success and brand's identity. We use all available tools at our disposal on any given event and are able to provide key metrics like total number of viewers, unique viewers, concurrent viewers, and viewer duration, among others.

In addition, when using social media and interactive widgets in the live user experience, Bulldog DM can provide additional data for a deep dive into specific user interactions and engagement. This includes tracking page referrals and social media impressions. Additionally, and possibly most critically, we can provide a real-time analytics dashboard during your event to monitor audience size, locations, quality-of-service, and breakdown by device and platform/OS.

Videos

PLAYS

199,665

77,491 LIVE + 122,174 VOD



Viewers

TOTAL IMPRESSIONS

217,770

127,394 PRE 98,493 LIVE + 3,929 POST + 152 VOD

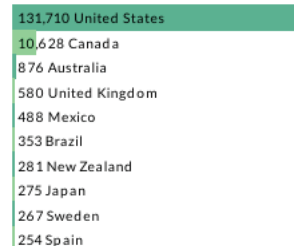


Global Viewers

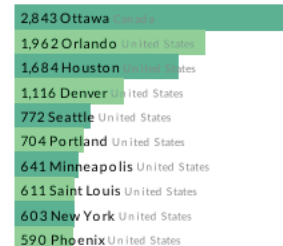
COUNTRIES

99

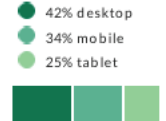
TOP COUNTRIES



TOP CITIES



BY DEVICE TYPE



case study: Vive Latino for Coca-Cola Mexico



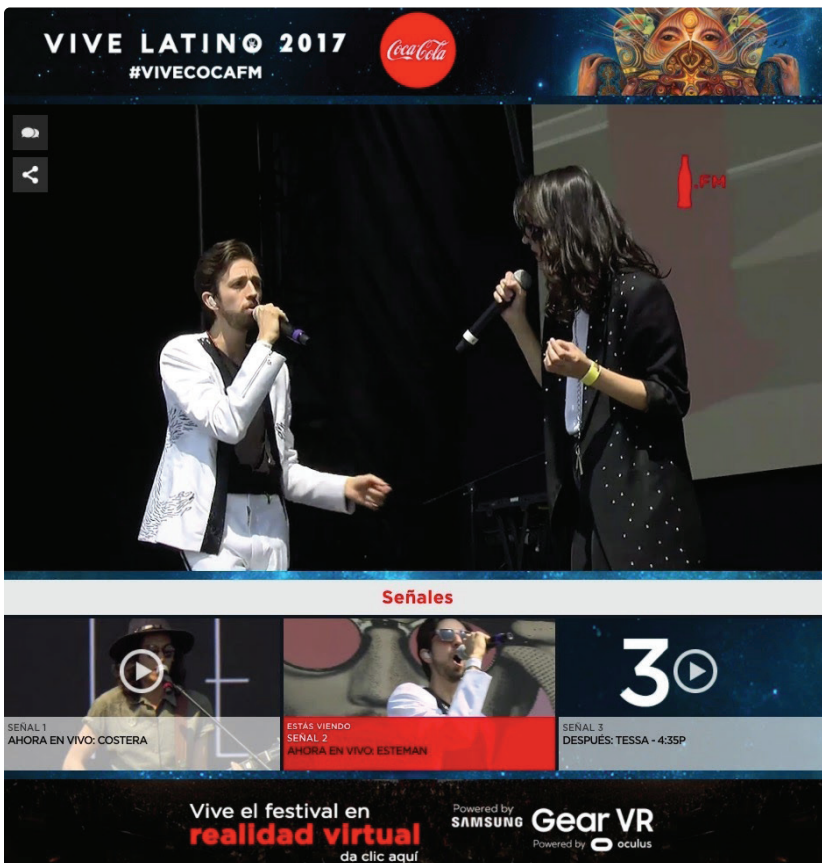
As the official presenter of the prestigious Vive Latino Music Festival, Coca-Cola wanted to extend the experience beyond the actual venue. They turned to Bulldog DM to provide a complete turnkey livestreaming and digital broadcast solution to extend the branded experience to connected consumers throughout Mexico — including a rich social media engagement strategy and innovative live Virtual Reality experience that increased engagement three-fold.

The opportunity

Coca-Cola, as the official presenter of the prestigious Vive Latino Music Festival, wanted to extend the experience to digital platforms and stream the entire festival to fans on any connected device. Moreover, Coca-Cola wanted to amplify their sponsorship of Mexico's leading music festival by enabling a digital broadcast of all three days of these exciting performances from the multiple stages at the festival.

The experience

The Vive Latino music festival is regarded as one of the most established and important music festivals in the world. Vive Latino features some of the top Latin and Spanish artists in music with international, multi-platinum headliners coming together for two days in a festival experience of compelling music, art and food live from Mexico City. Vive Latino features over 100 artists from all over the globe.



We delivered and managed a rich social media engagement strategy using proprietary technology...increasing engagement time three-fold.

Bulldog DM partnership and solution

Coca-Cola turned to Bulldog DM to provide a complete turnkey livestreaming and digital broadcast solution to extend the branded experience to connected consumers throughout Mexico who could tune in and livestream the experience in HD and VR, switch between stages, view from their mobile handsets and participate via social media — all as a completely branded Coca-Cola experience. The “Vive Latino presented by Coca-Cola” event was set to attract over one million views, so Coca-Cola needed a skilled partner that could develop and host a robust and rich experience for the virtual attendees.

Bulldog DM managed all of the video feeds from the main stages and created a turnkey digital broadcast that aligned Coca-Cola with the live performances and

Bulldog DM helps us attain and exceed our ambitious goals while providing a state of the art live Coca-Cola streaming experience.

Ernesto Almada Brito
Head of Media and Digital Transformation
Coca-Cola

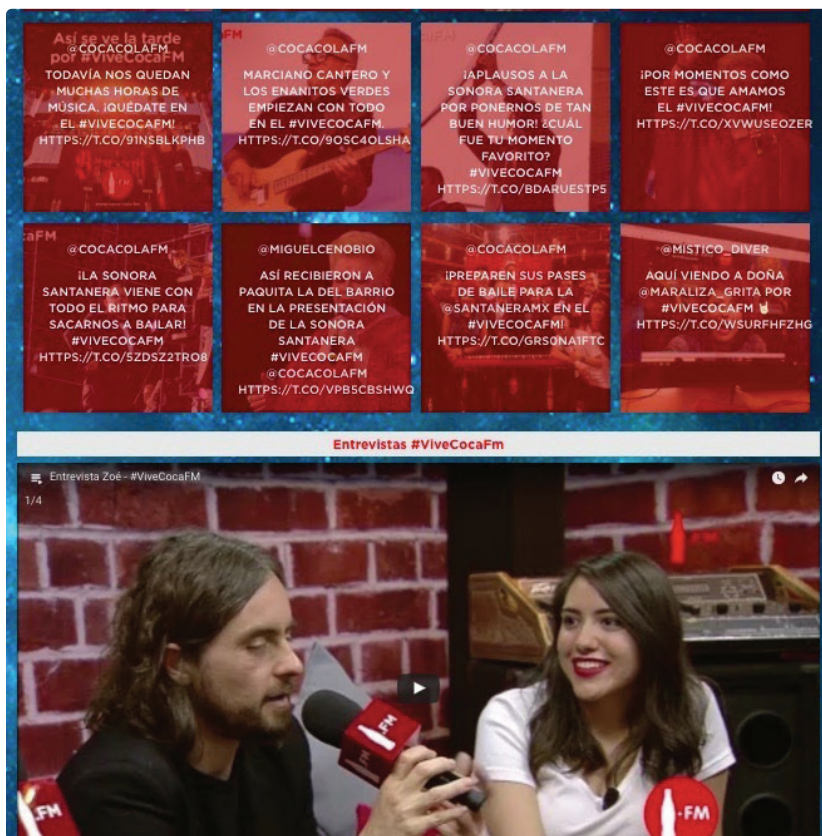
engaged with fans on their connected devices. In addition to the video experience, Bulldog DM delivered and managed a rich social media engagement strategy using proprietary technology to facilitate a participatory experience for fans to comment and connect around the live music experience, increasing engagement time three-fold.

For the first time the Vive Latino webcast experience was broadcast to Coca-Cola Mexico's Facebook and YouTube channels, as well as Mexico's first-ever exclusive use of Twitter's GoLive platform, to drive extended reach.

Also for the first time, Coca-Cola and Vive Latino's innovation strategy produced a live virtual reality and 360 livestream of the main stage performances, enabled by Bulldog DM. The VR/360 stream was broadcast on Coca-Cola Mexico's YouTube channel and directed by Tom Kirk of Muse's renowned live production team.

The user experience included design integration of brand logos, assets and styles; a customized social media application; a multi-channel video player; and an interactive festival schedule with optional SMS text notifications. Additionally, the entire user experience was translated to Spanish. The cross-platform experience included desktop, tablet and mobile platforms and allowed the festival audience to experience the event and connect with each other in real time from anywhere in Mexico.

Bulldog DM provided live-event monitoring of the page, the interactive widgets, live-stream experience, and Virtual Reality production. The event was hosted on a scalable, cloud-based server infrastructure that provided a stable, flexible framework for the large-scale audience. The post-event reporting offered insights on the livestream user demographics, social media engagement, and its influence on user behavior within the context of the livestream page.



Results

29 minutes

Average watch time on mobile

113 minutes

Average watch time on desktop

3.9 million

Total viewers

"We strive to make authentic and innovative connections with fans as part of our marketing strategy at Coca-Cola," asserts Ernesto Almada Brito, Coca-Cola's Head of Media and Digital Transformation. "Powering Vive Latino is an impactful strategy for us in that we are amplifying our on premise presence while at the same time we are presenting the festival in a highly engaging and differentiating way with multiple live channels and stages, schedule widgets, deep social integration, photo walls and live virtual reality and 360 viewing. We offer the experience from our platform as well as our Facebook, Twitter and YouTube channels. Bulldog DM helps us attain and exceed our ambitious goals while providing a state of the art live Coca-Cola streaming experience."