



## Graham Media Group rebuilds its live stream infrastructure and empowers local newsrooms

Graham Media Group (GMG), an American news media organization and a subsidiary of Graham Holdings Company (NYSE: GHC), is comprised of seven local media hubs as well as Graham Digital and Social News Desk. Together, the group delivers local news, programming, advertising solutions, and digital media tools for television, online, mobile, OTT, podcasts, and audio devices.

### OPPORTUNITY

Graham Media Group wanted to make it easier for reporters to cover live, breaking news events. The team saw an opportunity to rebuild its technology infrastructure to reduce production and delivery barriers. Ultimately, they hoped this would help them reach a wider audience and create a foundation for long-term, commercially viable digital video operations.

### APPROACH

The GMG team did a ground-up rebuild of their live streaming infrastructure and created a cost-efficient, user-friendly, and reliable system where reporters could upload live video from any source (including mobile) and then edit, schedule, and deliver videos to any platform. Once GMG built this suite of tools (including the mobile streaming app, "Broadcast", developed in collaboration with SaaS provider Arc Publishing), they tested them by covering two live news events.

**Overhauling the technology:** With GMG's existing technology, going live required multiple touchpoints (reporter, news van, station, encoder, cloud, website, etc.). The proposed new system would reduce the number of people involved to one: the reporter. As a first step, GMG established a new end-to-end infrastructure for capturing and publishing live video, which included updating cloud technology solutions, automating metadata connectors, implementing dashboard web apps, introducing new ways to capture and clip live video, and [more](#). The new infrastructure was implemented quickly, but progressively improved through biweekly sprints.

**Proving the infrastructure worked:** The team then contracted with Arc Publishing to build "Broadcast", an internal iOS app for reporters/producers to use as an input source for live stream publication. "Broadcast", which is now available to Arc customers, gives reporters the ability to publish video via GMG's owned and operated digital platforms, as well as external platforms (e.g., YouTube, social media). GMG also purchased, tested, and integrated a 360 camera into its new infrastructure as an input source for continuous live streams. The camera delivers a 360 video stream directly to YouTube during a live event.

**Deploying the live stream system:** GMG wanted to test the new system at its Orlando station for the July 4th 2019 fireworks before rolling out to other newsrooms. During the live fireworks coverage, there were dozens of parallel live streams, live audience engagement, participation, and feedback. Not long after, Hurricane Dorian threatened Florida with landfall and the Orlando newsroom was able to immediately mobilize and use the same digital-first planning and execution to cover it. The new live stream infrastructure worked seamlessly for both events.

**Scaling the project:** Graham Media Group plans to roll out the project to other newsrooms over the coming year. The biggest bottleneck is cellular broadband coverage and capacity at the time of an event or breaking news, so the team is working with bonded cellular and direct connections to improve reliability for all elements of the infrastructure, including the "Broadcast" app.

### RESULTS

This technology overhaul succeeded in empowering reporters and producers to publish content faster and with reduced friction, ultimately resulting in more live streams and videos for GMG and significant audience growth.

- **Decreased the time** it takes for reporters/producers to add more live streams from weeks to hours.
- The number of simultaneous available live streams has **increased from 25 to over 100**.
- **130% increase in sessions watched live and 118% increase in plays** (comparison of live stream coverage from Hurricane Irma in 2018 and Hurricane Dorian in 2019).

### LEARNINGS

**Digital success needs to be an organization-wide prerogative:** A key to integrating digital into an organization is ensuring that everyone accepts a digital-first perspective for planning, preparation, and implementation. The GMG teams that embraced digital realized fantastic success — much more than teams where digital was separate from traditional broadcast.

**Test early and often:** Embrace a test-as-you-go mentality with all new technologies because you will find unforeseen issues along the way. For example, GMG found shortcomings with streaming from older iOS devices and some of the cameras, which were ultimately unable to deliver reliable streams. Fortunately, the team's rigorous testing identified these use-cases early and allowed them to adapt and plan in advance, minimizing or eliminating impact on actual event coverage.

**Digital and traditional broadcast works together:** Just because you embrace digital doesn't mean you have to forgo your traditional broadcast heritage. GMG found that audiences often engaged with both broadcast and digital coverage, with one supplementing and enhancing the other, rather than cannibalizing it.

“ It was critically important to unburden our storytellers from the technological complexity of storytelling, to empower them to quickly and easily reach their audiences with timely local coverage. ”