



TELESTREAM

Customer Case Study

HEARST *television inc*

Hearst Expands Web Video with Telestream Agility

25 Hearst stations roll out Agility and Avalon to automatically repurpose and package news content for Web and syndication



"The combination of Telestream's Agility and Avalon systems has taken care of the 'heavy lifting' of Web publishing for Hearst and reduced the time spent preparing an individual story from 25 minutes down to 3 minutes."

Joe Addalia
Director of Technology Project
Hearst Television, Inc.

Background

Hearst Television was one of the first large broadcasters to embrace the Web when in 1999 it made a major investment in Internet Broadcasting Systems to create a network of Websites for its 29 stations. With 25 stations that produce local news, including 13 ABC, 10 NBC and two CBS affiliates, the station group has been aggressive in pushing its news content to the Internet Broadcasting (IB) platform and syndicating it to other sites. By 2005, its stations were posting several videos a day to their Websites.

The Challenge

When Web video began to explode four years ago, Hearst was eager to keep pace and capitalize on the rapidly growing demand. But it found that its existing Web video technology and workflows weren't ready to take the next step.

"Our people heading up the digital division came to the engineering side of the house, and said, 'We've got this problem: in the world of making money on the Web, video is king, but we're just not getting enough video on the Web to monetize it,'" recalls Joe Addalia, director of technology project for Hearst. "And the news side piped up and said, 'By the way, the content we're getting is not current enough.' We want more video to the web, faster---that was the overlying direction from above."

At the time, Hearst stations were on average publishing three to seven video stories per day to the Web. A large market like Boston might have seven, while a smaller market like Fort Smith, Ark. might have three or perhaps only one. The average across all stations was probably close to five, says Addalia, with a heavy focus on local news and local weather stories. National news for the Hearst station Websites is typically published out of Internet Broadcasting headquarters in Minneapolis, Minn., which maintains a national news desk.

Like most broadcasters, Hearst viewed its existing newscasts as the most ready source of available video for the Web, as the individual stories shown during air were already finished products with all the necessary voiceovers and graphics. And with most Hearst stations producing a morning, noon, evening and late-night newscast, there was plenty of material from which to draw.



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"The largest well to tap is the television newscast," says Addalia. "The TV show has essentially all of the content we want to put on the Web."

The Heavy lifting of Web video (old workflow)

Hearst stations already had a process for taking segments from a newscast and repurposing them for the Web, but it was a manual, labor-intensive workflow. A Web editor would look into an upcoming newscast's rundown in ENPS, the newsroom computer system from AP that Hearst uses to manage news production across its stations. After identifying stories of interest, the editor then would use a VTR to record them live-to-tape.

"They might record the entire newscast, but they usually just did a few segments, because they knew the process was quite long," says Addalia. "So they would record one to three stories out of a newscast."

The editor took the tape and fed the content into a basic, off-the-shelf nonlinear editing application such as Sony Vegas, Pinnacle Studio or Avid Express. The clip was edited and saved as a mezzanine file, because the codecs in those programs were limited and couldn't actively encode to the VP6 codec being used at that time. During the editing process, the editor also had to take a "thumbnail" of the story by finding a still frame representing the video and exporting it into Adobe Photoshop. After sizing the thumbnail properly, they would save it and name it.

In the next step, editors took the mezzanine file of the clip and used a desktop encoder from Digital Rapids to encode the content to VP6, Flash and whatever other Web video formats were needed. Each file format was encoded one at a time. Once they had the finished files, editors renamed the files according to a very specific naming convention required by the IB Publish content management system (CMS) and content delivery network Akamai in order to serve the video.

The finished and named video clip and still image would then be manually sent via FTP to the CMS. Once in the CMS, a user would create a story manually, write any associated text, create their key words, associate the videos, proof it, and then publish it.

"This whole process took upwards of 25 minutes if you were fast at it, and in some cases a half-hour, to do one clip," says Addalia.

With the clips averaging only a minute and 20 seconds, that was obviously not a very efficient model. So Addalia and his team set about overhauling the Web content ingest and preparation process.

"What we had to do was create an environment where we could get a very fast turn of content moving to the Web all day long," says Addalia. "Not only did we want to increase the amount of clips we were submitting, but we also wanted to be updating them frequently to coincide with what stories we were telling on the air."

A More Agile Approach (new workflow)

Addalia decided that changing the transcoding scheme was the big priority. He began looking for an enterprise-class, server-based encoding system to replace the desktop-based encoding tools Hearst had been using. Anystream, which was an independent company at that point, was his first choice with its Agility platform. His second choice happened to be Telestream, which acquired the Anystream business from Grab Networks in 2010.

"We've got a long relationship with both companies, so we got the best of both worlds with the merger, which is very nice," says Addalia.



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In 2006, Hearst set about building a new architecture based on the Agility platform which now lets its stations post stories in less than ten minutes. It deployed two main functions of Agility: Agility Live, a live capture and streaming program, and Agility Web, which serves as the transcoding engine.

Hearst uses the SQL database within Agility Live to schedule and record every newscast an individual station airs, capturing them in the standard-def DV [25 Mbps] broadcast-format. And if a station wants to stream the newscast, it can simply check a box in the Agility interface, and stream it out at the same time it's being captured.

"We needed a mezzanine format that would maintain resolution higher than what we would use on the Web and that would be intraframe, so we could view it and clip it while it's recording," says Addalia of the decision to go with DV. "If I were to do that in HD resolution, I would be looking at bit rates four times the rate of DV. I just need something that's greater than my Web resolution and that's considered mezzanine-style."

Because every story has graphics, Hearst decided to leverage them to help identify the video clips through ENPS. The system works by referencing the recordings to the MOS [Media Object Server] log that Hearst uses for graphics insertion.

"Every story in Hearst typically has a graphic at the beginning and a graphic at the end," says Addalia. "So what we did was we gave it a minus-5 [seconds] and a plus-5 on either end of it for markers. Then we created a tool that uses this marking data to reference the story name to the rundown in ENPS."

Hearst programmers used Agility's open APIs (Application Programming Interfaces) to create a proprietary software program called the "Video Prep Tool" that serves as a bridge between Agility and ENPS. A Web editor now goes into ENPS and marks a column that says "repurpose" to publish that story to the Web. The selected story then shows up in the "video prep tool," which synchs up with MOS and ENPS to auto-locate the story.

"A user clicks on this prep tool, selects a story in the right column, and the story pops up in a viewing window," says Addalia. "They're able to trim the end, trim the out, and if necessary, pick the thumbnail. Then at the bottom of the screen, they can enter in key words, enter blurb text, or change the title of the story, because sometimes in ENPS it's not the same title that you would want on the Web. Once that's completed, we've added syndication features, so today our videos not only go to our websites, but we'll push them to YouTube, to MSN, to Yahoo! News. Any partner that we might have for a particular station or the group, we can syndicate through this tool."

Managing Metadata for Multiple Partners

After the Web editor is finished preparing the story, a "quick-assign" button is selected which packages a QuickTime reference movie along with metadata that's been put together. Some essence metadata comes from the video file, such as length; some is entered on the screen, such as story name and blurb text; and some is static, such as the station, the destination, etc. All of that is packaged into an MMF file, a special format designed specifically for Web publishing, and sent to the Agility Avalon system.

The name for the "quick-assign" button is self-explanatory, says Addalia. "That's just a play on what used to take a half-hour, now takes three minutes in terms of a user investment in time."

While Agility handles the actual transcoding of the file, Avalon takes care of the metadata that needs to go along with the video.

"Basically, Avalon makes the file searchable," says Tom Pflaum, Telestream VP of Product Strategy and Solutions for Agility Products.



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According to Pflaum, the Hearst implementation required no real customization on Telestream's part, as Hearst was able to create the video prep tool on its own using the Web services APIs in Agility and Avalon.

"What we did do for them was make sure that the metadata that goes to IB Systems is exactly what IB Systems wants," says Pflaum. "I wouldn't necessarily call this customization. It's just the configuration of Avalon to make sure that metadata, which is typically an XML document, is exactly what IB Systems wants. When it comes to XML, companies are very quick to make up their own standards that are just a little bit different from everyone else. So there's always a bit of tweaking there. But it's more configuration, and it doesn't require a programmer to make that change."

When a Hearst Web editor hits the quick-assign button, the package is sent to Agility. The video, which is a QuickTime reference movie that references the DV file, is then transcoded into the various formats that Hearst requires based on stored profiles. At the same time, the MMF data is ingested by the Avalon system, which packages a subset of the MMF for each distribution avenue.

"When the metadata is completed, the system builds the package for distribution," says Addalia. "So it says, Agility just made a Flash, and the Flash file goes to IB's main Website. The Windows Media file goes to MSN, another Flash goes over to YouTube. And oh, I need a thumbnail for everybody. So it does all of that packaging last essentially, once it's ingested and created the metadata and video formats."

The Result

Hearst began rolling out Agility three years ago and completed installation in 2010 at 25 stations as well as its Washington, D.C. bureau. It began installing the Avalon metadata management tool in fall 2010 and currently has it running at 14 stations, with the balance to be completed by mid-2011.

"The combination of Telestream's Agility and Avalon systems has taken care of the 'heavy lifting' of Web publishing for Hearst, and reduced the time spent preparing an individual story from 25 minutes down to three minutes," says Addalia. "The distribution side varies depending on the file size, but is also less than five minutes, making for a sub-10-minute process from start to finish."

Hearst plans to broaden its use of Agility with its Next-Generation Newsgathering initiative, which is aimed at bringing more original video to its stations' Websites in advance of their appearance in a newscast. Next-Gen journalists are equipped in the field with small cameras and laptop editors, and frequently transmit content back to the station using IP delivery systems like Streambox or conventional FTP paths.

Each station has its own FTP location for Next-Gen content, and Agility monitors that folder using a feature called "folder attendant." When it sees a new story, it pulls it down, converts it to a DV file, then puts it in another generic video folder. Web editors can access that folder using the video prep tool, and publish a Next-Gen story to the Web within minutes.

"It's very streamlined," says Addalia. "The advantage we've been able to leverage with Agility is that users don't have to think about video encoding, and they don't have to know anything about video encoding. The only thing they need to know is what they're publishing. They're concerned with their content only."

For more information:

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