



Managing multi-platform at ITV



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- David Hornsby,

Content Delivery Applications
Manager for ITV

Background

ITV is the largest commercial television network in the UK. It is the home of popular television from the biggest entertainment events, to original drama, major sports, landmark factual series and independent news. It operates a family of channels including ITV, ITV2, ITV3 and ITV4 and CITV which are broadcast free-to-air.

In August 2010, ITV announced its strategy to transform the business over five years. The company’s vision is to create world class content which can make it famous on its channels before exploiting its value across multiple platforms, free and pay, in the UK and internationally. A key part of this strategy is to distribute the broadcaster’s quality content on a range of platforms – whether watching a linear transmission, viewing ITV Player on a mobile device, or catching up on Sky and Virgin’s video on demand platforms. ITV has made significant progress in delivering its content to the right platforms in a timely manner in order to increase accessibility and improve the viewing experience.

ITV is also one of the leading partners of the Digital Production Partnership (DPP) and has played an important part in the decision by all the UK broadcasters to move to exclusively file-based programme exchange by 1 October 2014. As a file-based organisation, new programmes are delivered via an ingest partner, which also manages the encoding of ITV’s vast physical archive of popular legacy content. Programmes are delivered to the playout contractor over a fibre optic network and as catch-up services become increasingly in demand, there is a growing need for high-performance transcoding.

First steps

In the past few years, ITV has made great strides in end-to-end file-based processing and automated workflows. In 2012, the broadcaster moved production of its two soap operas, *Coronation Street* and *Emmerdale*, to HD and transitioned the process from tape to file-based production and post.

As part of the process, ITV needed a means of taking the production file format (AVC-Intra) and converting it to the playout format (MPEG-2). The programmes also need to be available to viewers on a range of online and mobile platforms for catch-up viewing. Using two Vantage processor farms has helped ITV achieve its goal of processing all its catch-up content in house.

“At the time we had no enterprise transcoding capability, so we looked around for the most appropriate tool,” said David Hornsby, Content Delivery Applications Manager for ITV. “Vantage from Telestream stood out first of all because it had the codecs we needed – we were ahead of the game choosing AVC-Intra for production. We decided to establish a small transcode farm as a trial project to do all the processing for our two daily dramas. This gave us a good chance to see how Vantage worked in practice, and to see how we could integrate it with our business processes.”

As-live and interactive content

ITV content sits in two broad categories. While much of the output – dramas, documentaries and imports – can be processed in advance, a large part of the schedule is either live or delivered very close to transmission. For example, ITV News is broadcast live as well as entertainment series such as *The X Factor* and *Britain’s Got Talent*.

There are also some programmes which require editing after linear transmission and before the content is made available on catch-up services. This largely involves interactivity, giving viewers the opportunity to phone-in and comment on shows, vote for their favourite acts or enter a competition. It is often the case that these events have closed by the time they are viewed on catch-up platforms and therefore need altering.

“Vantage offers flexibility which is really good for this sort of thing,” according to Hornsby. “We perform an edit in a standard editing tool, which then sends an EDL to Vantage. All the cuts and transitions are performed in Vantage as the output streams are generated and the relevant bumpers and stings are added. That is a really efficient way to work.”

One of the Vantage transcode farms is configured for speed and burst volumes. It resides on a hardware platform which includes five GPU-accelerated servers and eight CPU systems. It operates on a target time of twice the programme duration for encoding and publishing all the files, typically around 30 output files. For the rest of the output, there is a second Vantage farm, based in ITV’s data centre, which is connected to ITV’s high speed data infrastructure.

“We have 10 gigabit connectivity between all our sites, and currently 3.5 petabytes of storage spread across multiple production and broadcast sites,” explained Hornsby. “We can move content anywhere we want very quickly, and keep track of everything centrally.”

The Vantage farm in the data centre has three GPU and five CPU processors, and outputs up to 1000 files a day, running non-stop. Its workflow engine is populated automatically by the transmission schedule. Metadata such as timecodes is taken directly from the DPP metadata to ensure consistency.

As with the late and live system, Vantage automatically edits together the parts of a programme. It also reads other data and reacts accordingly. For example, an archive programme may have started as an HD pillarboxed tape, but by the time it reaches the ITV transmission it is an HD DPP file. Vantage will see from the DPP metadata that it was originally 4:3 inside a 16:9 frame and set the frame size accordingly, saving time encoding black bars on either side of the picture.

Conclusion

As a commercial broadcaster, a key part of ITV’s strategy is to distribute its content based on audience demand and continue to review opportunities on a case by case basis. Today, every piece of ITV content on any catch-up platform is encoded in house using Vantage, which has enabled the business to achieve significant efficiencies in the quality, speed and costs associated with content delivery.

Final Comments:

“We started with a small Vantage system because Telestream was the only company that could decode AVC-Intra when we first needed it,” Hornsby recalled. “A key benefit of Vantage is that we could start small and get very big. There is a continuous process of enhancements coming out of Telestream, and they are tracking our requirements well – we work closely with the company to get what we need.”

“The other thing that really matches our situation is that you can build workflows without having to code,” he added. “The workflow engine is a business system that knows little about transcoding. The logic is spread across domain specific microservices and the orchestration tool, transcoding logic remains specifically in Vantage, where we do not need to worry about it.

“There are those who would be concerned about having such a core part of the business relying on a single vendor, however we see more benefits than risks.” said Hornsby. “We have a team that knows the product in depth, and we have a good relationship with Telestream with excellent support when we need it. Therefore, I see our reliance on Vantage as simplifying and clarifying the processes.”

“Whether you’re a runner, a web developer or an analyst, everybody’s job at ITV is about getting great content in front of the viewing public. We are already seeing huge benefits from being in control of our own content and have built a strong foundation to build on going forward” he concluded.

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