All Systems Go!

DMC was looking for a flexible infrastructure that would allow its business to grow on a channel-by-channel basis, says JONATHAN TRY

The Digital Media Centre (DMC) in Amsterdam is part of Chellomedia, the content division of Liberty Global Inc. DMC operates playout and support services for 58 TV channels aimed at Europe, Middle East, Africa, and Asia, and provides the technical operations for a DTH platform (UPC Direct) in Hungary, and the Czech and Slovak republics. Services include scheduling, traffic, ingest, archive playout, transmission, and distribution of the linear channels, plus specialist VoD and streaming services.

In 2006 the DMC began a process to update and expand the existing transmission playout systems, which had been in operation since 2000. Server-based playout has always been at the core of the DMC, but the new project took a fresh look at the available technology.

At the time, single box solutions were considered but dismissed in favour of a more 'traditional' approach using Omneon servers and Omnibus Colossus automation. With an eye for future integration of digital post-production and content delivery, we standardised on higher data rates for both SD and HD compression, and began to create a content archive on tape and disc to feed the new playout.

In our operation we have always dealt with multi-lingual content and wanted to remove two important limitations. Firstly our audio handling was limited to 16 languages with any video asset, and secondly, a late addition of a new language track required a new ingest. For these reasons we chose an in-house file format, that gave us separate video and audio essence files with Quicktime reference. This suited us well with the Omneon playout, but as iTX continued to evolve and become a far more interesting proposition, we looked at ways to integrate with our now established archive.

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In 2007 we installed our first iTX system for three specialist standalone channels that were not connected to our archive, having self-contained media storage. This worked well for us and we began discussions with Omnibus on how we might be able to integrate iTX with our Omnibus Colossus ingest, our archive and playout.

Having established a development plan we began building the infrastructure to transfer a total of 12 existing channels to iTX throughout the course of 2009. This also gave us the opportunity to organise the systems in a modular way with all equipment for one channel grouped together making equipment quick to locate and fault-finding simpler. This modular approach allowed us to prepare for adding more channels to the system for minimal extra investment, with the larger part of the equipment and license costs only being incurred as we acquired new business.

The system itself uses HP servers to run the iTX software and central storage in the form of Isilon IQ four-node server. Omnibus built a software interface to request content to be transferred to the Isilon from our archive running Aqua software from Suitcase TV. Requests are driven from the loaded schedules – which are usually available in preliminary form, several days ahead.

Last minute requests are prioritised to ensure availability in time for TX.

iTX MediaWatcher takes care of management of the Isilon storage by purging content after transmission. Each full channel runs a main and backup playout server with failover switching and distribution downstream.

For all our channels, tape delivered content is ingested using Omnibus Colossus G3, controlling two flexicarts and an Omneon server. Once QC is passed, this content is passed to the archive controlled by Suitcase TV's Aqua software, where a combination of disc and tape archive provides more than 1Petabyte of storage.

Additional language tracks can be added at this point, using the TrakStak module in Aqua. Aqua also uses playout schedules to stage content onto spinning disc before a potential automation request, ensuring minimum latency on delivery of content to the playout servers.

Operationally, the iTX system is controlled from our NOC (Network Operations Centre), alongside the channels running under Colossus automation. As the process flow for both systems is similar to the point of playout, the availability of content can be checked using similar tools, which is essential for an integrated operation.

By the end of 2009 we had moved eight of the twelve channels we originally planned, and in the process have added another three. By the time the transition is complete, the original twelve will have been supplemented by a further five and the Isilon storage expanded by 50 percent.

The ability to add channels to a lighter infrastructure quickly and on a channel-by-channel basis is more compatible with the way we add to our business. It means we do not need to make a large speculative investment in the infrastructure and have more flexibility to add functionality to a channel by purchase of a license rather than new hardware. We still have some downstream hardware, subtitling equipment for example, but the 'channel-in-a-box' approach is definitely working for us.

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