Success Story

SGI and Danish Broadcasting: Building Tomorrow's Newsroom Today

The number one problem facing broadcasters in the global transition to digital broadcasting is turning workflow into effective dataflow. SGI® digital workflow solutions are currently being deployed around the world, and SGI and Danish Broadcasting Corporation (DR) are now building the international broadcast industry's most advanced, completely integrated digital news system.

Denmark's oldest and largest public service radio and television company, Danish Broadcasting, is halfway through its complete digital conversion. This conversion began in 1999 with digital radio production, continued in 2000 with a digital TV pilot phase, and will result in an all-digital DR and a new facility in Copenhagen—"DR Byen"—that will bring the company together in a multimedia community in 2005–2006. After the successful completion of a pilot phase architected by SGI, DR chose SGI equipment and systems integration services for the next phase—a robust and flexible file-based digital news and sports production environment built on a content-sharing asset management system.

Phase 2, valued at $6.5 million (U.S.) and with an estimated completion date of December 2003, is the Sports and News Production System (SNPS). Designed by SGI, it is based on the SGI Media Server™ for broadcast system. As in several other European broadcast installations, SGI is both the consulting architect and technology engineer for building the digital workflow infrastructure. For DR personnel in 11 different news and sports departments including television, radio and online operations, the breakthrough move to a file-based digital infrastructure will significantly change and enhance their current workflows—resulting in more-effective and more-efficient production methods that will greatly enhance DR's return on investment. The first newscasts produced on the new SGI systems are slated for broadcast in May 2003.

SGI Sports and News Production System for Danish Broadcasting

From the beginning, Danish Broadcasting's requirements for workflow, dataflow, reliability and redundancy, bandwidth, flexibility, and service required innovative solution architectures. For Phase 2, SGI designed archival and Web interface functionality into the SNPS system. The project includes the design of the overall digital architecture, integration of the required multi-vendor technologies, and a variety of professional services, project management, and project-specific application development.

Hardware requirements for the second phase of the project include eight SGI Media Server for broadcast systems, SGI® Origin® 3000 and SGI® Origin® 300 servers, two SGI® TP9500 6.8TB storage systems, and SGI® Data Migration Facility (DMF) software for moving data from disk to tape, which will serve as the foundation for archiving material. SGI will also integrate an automation system from vizrt; desktop editing functionality such as voice-over capability, transcoding software including keyframe extraction, and scheduled ingest automation software from Ardendo; a StorageTek® L5500 tape library; 24 Pinnacle Systems Liquid purple and Liquid blue nonlinear editing systems; and a transcoding cluster consisting of 12 dual-processor Linux® operating system servers.

In addition, SGI DMF software integrates content on tape and disk, stored offline and online, making it instantly available to the user. Broadcast Integration Service, an XML-based API developed by SGI Professional Services, provides interfaces to all of the different client software and systems, including the Web front-end user interface developed by DR.

Digital Workflow Infrastructure

Managing and mastering digital workflow is key to a broadcaster's return on investment (ROI), which SGI further defines as "return on IT" and "return on integration." All three ROIs contribute to operational efficiencies and competitive advantage, especially time to air.

Digital workflow begins with ingestion: video comes in via live satellite feeds or tape and it is digitized into an

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SGI ingestion server (or arrives as data via IP). DR chose SGI architecture because it substantially reduces overall time to ingest in three critical ways:

- Editing can be done during the ingest process
- Server-based editing enables multiple journalists to work simultaneously on the content
- Metadata, which is inserted at ingestion, enables journalists to find exactly the clips they want, quickly and easily, in both primary editing and retrieving for archives.

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—Torben Lundberg, Head of Technology for News and Sports at DR

Return on IT

The heart of the workflow is a 24-processor Origin 3000 file server with a large number of Gigabit Ethernet network connections. SGI's return on IT delivers value to broadcasters by meeting the digital workflow demand of moving very large data files very quickly over high-bandwidth networks. SGI is one of the few companies that provides the needed network capability with a file server this size, ensuring a reliable and proven path to all clients who need best access to large data files.

One of the biggest digital workflow ROIs—in this case, return on integration—is where the server meets editing. On the system architected by SGI, journalists have full access to the critical newsroom systems and can perform both high- and low-resolution editing. Graphics creation and insertion is also faster. When creating the EDL, the journalist has graphics, templates, and commands all available.

Once the complete story package has been created, it is transferred from the SAN to the SGI Media Server for broadcast system for playout. SGI Media Server for broadcast constantly communicates with automation and graphics software systems. Because the architecture is based on an open filesystem and industry-standard video formats and file types, a huge variety of products from internationally known and trusted broadcast equipment and software applications providers can be easily integrated.

SGI SAN architecture also meets DR's directives by providing powerful and sophisticated archiving retrieval and interfacing smoothly with many vendors' storage libraries in addition to SGI archiving systems. Using SGI DMF hierarchical storage management, all common assets are stored across diverse disk and tape libraries. DMF is highly intelligent and automated, moving files from the SAN to near-line and offline and back again for the greatest speed and fastest access. Intelligent migration of assets optimizes the appropriate storage for the task and ultimately saves money.

"From a technical as well as an organizational viewpoint, this is a leading-edge project that will have a major impact on our production. It is DR's experience that SGI gets the job done and integrates well with other companies' products. That was key to our decision to award SGI the Phase 2 contract," said Torben Lundberg, Head of Technology for News and Sports at DR. "The success of the pilot project proved the feasibility of the undertaking and demonstrated a return on investment. We began broadcasting live news with the pilot system on December 7, 2001, and then extended to a new three-hour morning news service. In the pilot project, more than 1,000 news broadcasts were digitally produced, delivered, and archived. We have been very pleased with the quality and speed of production. Once Phase 2 is complete, our staff will have even faster access to archived material and will be able to share video and sound material across our TV, radio, and online operations."

DR operates two nationwide television channels and three nationwide radio stations, owns and operates several local television and radio stations, and employs more than 3,500 people.

This article contains forward-looking statements regarding financial and contractual commitments that are subject to risks and uncertainties. These risks and uncertainties could cause actual results to differ materially from those described in such statements. The reader is cautioned not to rely unduly on these forward-looking statements, which are not a guarantee of future or current performance. Such risks and uncertainties include long-term program commitments, the performance of third parties, the sustained performance of current and future products, financing risks, the ability to integrate and support a complex technology solution involving multiple providers and users, and other risks detailed from time to time in the company's most recent SEC reports, including its reports on Form 10-K and Form 10-Q.

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