



North Point uses multiple HD cameras for distributing uncompressed video to its overflow site. In post-production, the signal is compressed for on-demand streaming.

FAITH STREAMS

Where AV and IT meet in the HOW segment.

BY SHONAN NORONHA, EdD

New streaming media technology and content delivery networks are enabling Houses of Worship to expand their outreach through online live and on-demand services. Video production, capture and editing systems, signal encoders and servers, and networks for hosting websites and streaming media are all part of the mix.

AV integrators can expand their presence in the house of worship (HOW) market and enhance their relationship with existing customers by developing their expertise in networking and multi-platform delivery systems, and by partnering with streaming media service providers. We'll provide a brief overview of HOW video production and streaming applications, the technologies and some of the key players in this field.

Bring In The Experts

The demand for high-quality audio and video capture, post-production and signal routing systems continues to expand as ministries enhance their worship services with media-rich content onsite and to overflow areas on campus, broadcast these services and events via satellite or cable, and make them available on DVD.

Because AV system design and integration are often seen as a different discipline than networking, worship centers rarely call on AV integrators to help them with streaming solutions and services. For instance, Grace Chapel in Franklin TN engaged Clair Brothers Systems out of Nashville to deploy its video system, but handled its streaming initiative in-house.

"We knew we would have to in-

crease our production value, so we called Clair Brothers, with whom we had worked in the past. The company has an impeccable reputation," reported John Cox, technical supervisor. "We learned of UpStream Networks from the internet. We knew we needed some kind of streaming service provider that could handle very large amounts of bandwidth, and UpStream impressed us with its CDN [Content Delivery Network] and price," explained Cox.

Commenting on the state of video streaming, Michael Sheehan, technology evangelist for ServePath and UpStream Networks, said, "Streaming video capability is no longer limited to those with tremendous amounts of hardware or AV experience. The entry point actually can be fairly inexpen-

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Joyce Meyer in Mumbai was shot in HD for DVD and broadcast. The signal was later compressed for on-demand streaming.

sive and with minimal technology requirements. Using USN, for example, one simply needs to download the free Windows Media Encoder and plug in the URL provided by USN. Then, all that is needed is embedding the HTML for the stream on a webpage.”

In The Beginning

Audio is still used to reach large numbers of potential listeners via radio and the internet. Content delivery

someone in the church, listened in, and then gave his heart to Christ,” said Trent. “This is another way the site is used. It is more about building the kingdom of God than it is building our church.”

This attitude is typical of the dedicated people working in ministries; integrators who wish to expand their HOW business need to understand and appreciate this serious level of commitment.

Recorded audio of worship services is often the first content chosen to be streamed, because this is a simple, quick

and logical extension of existing activities. “At our church [Wesleyan Church of Fairfield], the recorded sermon is first ripped to MP3 format and stored on the PC,” said Karen Bryant, a parishioner who updates the website with information and photographs. “This way, if someone asks for a copy, we can give them a CD.” A disc of the original recording is handed to Randy Olson, director of communications and marketing for US Church Stream, who encodes the audio and uploads it to the church website.

Building a total environment with video production and streaming capability can be exciting and challenging.

Production Capability

Calvary Chapel in Costa Mesa CA has video production capability onsite, and established its own streaming facility in Irvine CA. With about 20 servers that include storage arrays, database management, hosting, streaming and email, the facility streams services held at Costa Mesa live and on-demand, as well as streams for 65 of its 1300 fellowship centers worldwide.

“Nearly 18,000 unique IP addresses are accessing the live and continuous webcasts per month,” reported Heath Thomas at Calvary Chapel’s Internet Services. “But setting up the technical infrastructure and running a data/colocation center is a demanding task. We are blessed to have Jim Shewmaker as our system administrator and USDN as consultants; both are at the forefront of administration and network security.”

With a fully staffed media department, North Point Community Church in Alpharetta GA creates a memorable worship experience for its onsite worship services and special events. The services, which are held in its East auditorium, are captured using multiple Panasonic AK-HC931B HD studio cameras, and mixed live through a switcher. The uncompressed HD-SDI video is displayed simultaneously on large screens in its West auditorium, thereby providing a real-time experience for additional participants. The church’s cutting-edge staging, lighting, and audio and video production and postproduction systems were all designed and installed in-house.

The recorded and edited video is then compressed using Sorenson Squeeze and prepared for streaming at 300kbps. North Point Ministries contracted directly with Akamai to deliver on-demand streaming for its community of 17,000, which includes Buckhead Church in Atlanta and Browns Bridge Community Church in Cumming.

Serving The Multitudes

Satellite and cable broadcaster of Gospel content Joyce Meyer Ministries, in Fenton MO, partnered with Multicast Media Technologies, a prod-

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networks offer scalable levels of hosting, so a worship center can get its feet wet by subscribing to a CDN that provides a limited number of streams for a small fee, and then scale up quality and audience capacity as its ministry and outreach grows.

Pastor Philip Trent at the Wesleyan Church of Fairfield IL has done just that. He uses ChurchWebsiteBuilder.net for website software and hosting (\$39 a month for unlimited pages), and its sister company, US Church Stream, for audio streaming his sermons (\$4 per audio file, available on-demand and archived for a year). “I know of a gentleman who lives a state away, who heard of our site from



Grace Chapel in Franklin TN offers live and on-demand video streaming.

Wesleyan Church of Fairfield IL audio streams sermons for on-demand listening.



uct and service provider in Atlanta, to develop and design its on-demand streaming media solution, which features Multicast's Digital Media Management System and several other applications on the Akamai CDN.

Joyce Meyer Ministries' online initiative, which started in 2002, has grown rapidly over the past six years. "Currently, we are seeing 1.5 million visitors per month," reported Ginger Stache, chief media officer for Joyce Meyer Ministries. "Our goal is to see these numbers continue to increase and, through the web and every other means available to us, to eventually

is to create the best user experience and not deny people's requests to view our content."

Creating A Cyber World

Creating and delivering an enriching experience for congregants is the goal of every ministry. "Technology is one of the components in designing a total environment and planning a growth strategy," said Chance Mason, executive vice president of Multicast Media and president of its vertical market subsidiaries, Streaming Faith and 316 Networks. According to Mason, there are four major components

to distributing video over the web: "Encoding, network capability and reliability, reporting and analytics, and

enabling the viewer to interact with the content—all need to be addressed."

Eighty-five percent of Streaming Faith's more than 500 clients stream video. "You have to choose the format and codec based on how you want to distribute your content," explained Mason. "Ministries that distribute programming via satellite or cable are now producing 16:9 HD content and compress at high bit-rates for broadcast, and then scale down for online on-demand downloads or our 24-hour linear broadcast channel." Multicast has developed technology that simu-

lates traditional cable in a master control environment but delivers video over IP instead of originating at cable or satellite head-ends.

Free Chapel of Gainesville GA and Irvine CA produces standard definition 4:3 video using six Sony D-50 cameras in the sanctuary in Gainesville, and Apple Final Cut Pro for editing. "Streaming live is as simple as scheduling a live event with Streaming Faith, and then directing the event as I would for video capture," reported Brian Smith, director of media. "We use SF's encoders and routers, so I don't have to think about that. It's a turnkey solution. Our virtual audience experiences all the graphics, video roll-in and imagery we can produce, and experiences the event as if they were in the sanctuary with us. The 24/7 is handled through a separate export of our broadcast, simply removing certain graphics and adding other relevant content for the streaming audience. Then we have both files uploaded to an ftp site for SF to encode and distribute."

Encoding Mysteries

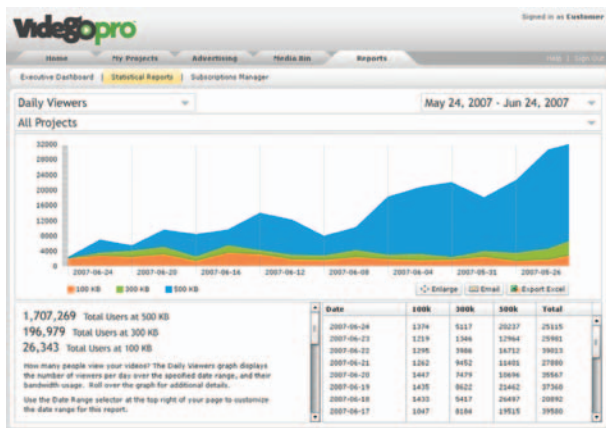
Encoding church services for transmission using a PC or Mac can be cost-effective, but presents significant challenges in terms of quality and/or the high level of technical expertise required.

Many houses of worship use standard 4:3 format and prepare their online content as Flash and Windows Media Video files. At Calvary Chapel, a video signal of a live service or event

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reach every city, every nation, every day."

With that goal at the forefront, Joyce Meyer, in collaboration with Multicast, has moved its on-demand streaming directly to Akamai. "With the huge growth we are experiencing in video and podcast requests, we were unable to serve enough streams to meet the demand," explained Robert Sanabria, CIO, Joyce Meyer Ministries. "They are many benefits that Akamai can provide. There is the reporting, the ease of use and many other aspects that make it a desirable platform for us. However, the number one reason



Reporting and analytics can provide ministries with information on how many are "tuning in."

appliances include several models for encoding, recording and serving, both Windows Media and MPEG4 audio/video over the internet or a campus LAN at data rates from 8kbps to 2Mbps. A useful calculator for estimating reflector "transmission" costs for a variety of streaming applications is available at VBrick's website (www.vbrick.com).

ViewCast's Niagara GoStream and GoStream Plus feature three buttons,

Many ministries are finding that interactivity and online commerce are key to better serving their congregations.

which allow users to select from pre-defined encoding profiles. The portable appliance is available with 30GB storage, and wireless and battery options. Video encoding formats that are supported include Microsoft Windows Media, RealVideo, Adobe Flash and MPEG4 (for podcasts).

Sony's Anycast Station was used at Calvary Chapel Costa Mesa during the church's renovation. "It's a compact unit, so we were able to take it outdoors and simply plug in the audio and video, and upload the signal to our datacenter in Irvine," said video maven Tim Hathaway, who is responsible for content production. The self-contained unit features a character generator and a six-input video switcher, six-channel audio mixer, and provides integrated audio mixing and low bit-rate TCP/IP digital video streaming.

Ministries that require the highest

level of encoding quality approaching digital broadcast or HD-quality, and multipoint video transport and control, have a number of excellent choices of encoder. Deploying broadcast-quality solutions from Envivio, Streambox, Tandberg and other manufacturers usually requires substantial in-house or outsourced integration and technical support. Some major religious institutions even have separate facilities dedicated to creating the best possible

content for their webcasts. The broadcast level facility at Trinity Church in New York

City, for example, includes a special streaming media control room, complete with Ross switcher, Mackie mixer and Pinnacle StreamFactory 2.

Building Interactivity

Producing engaging content for web distribution is an important way to build an online community, but designing a robust interactive environment for the viewer requires both skills and supporting technology. Many ministries are finding that interactivity and online commerce are key to better serving their congregations.

"We offer our HOW clients a unique self-updating broadcast page that they can place within their website that provides visitors with quick and easy access to upcoming broadcasts," said Olson at US Church Stream.

Providing viewers with the ability to

ask questions, respond to fundraising pledges and purchase products enriches a ministry in many ways. Multicast Media has developed an application that makes it easier for viewers to interact with the content. "For example, viewers can browse through a virtual Bible while they are watching the content, as well as take notes inside the environment to print or email to themselves for later reference," explained Mason. "They can also visit chat rooms, respond to any of the calls to action and have the ability to learn more about partnerships."

The most common advice for both HOW and AV integrators, from the people at the ministries presented here, is to get experts onboard. "Surround yourself with the right people and allow them to do what they do best, do your research, and stretch beyond the typical," suggested Joyce Meyer Ministries' Stache.

Grace Chapel's Cox said, "The best advice I could give another church that is thinking about getting into streaming media is, hire a consultant or a design/build firm that you trust to help with the design and install of your system."

US Church Stream's Olson reported that he provides interested clients with a link to download the company's software for free and encourages them to do a free trial broadcast. "I also provide them with a link to a training video so they can understand any questions they have regarding equipment set-up."

Thomas at Calvary Church advises AV integrators to keep things simple. "Most churches use volunteers for their media departments. Designing and implementing a well-thought-out workflow with a few key pieces of equipment or software will ensure success," he explained.

Building sustainable streaming applications for houses of worship requires an effective combination of many disparate technologies and areas of expertise. Integrators who wish to partake in the rapid expansion of this market need to have a clear and realistic idea of the ways in which they can best contribute to this growth. ■