IPTV FINDS THE MAINSTREAM AT FLORIDA HOSPITAL

PEPIN HEART HOSPITAL TAKES IPTV TO PATIENT ROOMS

Living on the edge isn't as hard as it sounds when you're talking about Internet protocol television.

Streaming full-frame, full-resolution video over an IP network may be the ideal delivery solution for any kind of distributed video. An established technology in Europe, IPTV has struggled to take hold on this side of the Atlantic, but that may be changing. What's holding the American AV industry back?

Simply put, IPTV is a method of encoding an analog AV signal, digitizing and compressing it, packetizing it and sending it over the IP network to a decoder, whether that be a software decoder in a computer or a hardware decoder like a TV set top box. Using the network eliminates the need to run coaxial cable from room to room. Putting multiple systems on one network makes it more reliable and easier to maintain.

When AV Consultant Rich Swanson of Cygne Solutions brought the idea of IPTV to the new Pepin Heart Hospital & Dr. Kiran C. Patel Research Institute in Tampa, Florida, part of the University Community Health (UCH) system, it promised to be a cost effective, reliable way to bring bedside entertainment to the hospital's patients. Representing a European company long established in the IPTV world overseas, Swanson quickly discovered the project lost something in the translation.

Pepin Heart Hospital in Tampa

Patient watches the news in her room in Pepin Heart Hospital

"The company used C-Ban satellite dishes to bring various entertainment channels into the system. C-Ban dishes are 10 or 15 feet in diameter," says Swanson. "You'd have to put up six or seven of those at every given site to get enough channels to compete with cable." Worse, with server-based technology there are only four card slots per server. Since it's one channel per card, you're looking at a huge amount of floor space to bring in enough channels. Finally, all the equipment came in from Europe and the television set top boxes had to be shipped to Hong Kong for programming.

Any of these obstacles might have doomed the whole idea, had Swanson not found Visionary Solutions of Carpinteria, California and their new Multi Media Processing Platform. The new system eliminates the need for servers, cuts the rack space by two-thirds, expands the channel availability four times over, and costs about a third of any other solution Swanson could find.

"These were truly plug and play," says George Evans, UCH's vice president and chief information officer. "Their product adheres to open standards, which makes it easy to integrate with other systems. We got it installed with no problem, on time, on budget and it performs as expected. It's an all-around good project."

LIFE ON THE EDGE

At the heart of the hospital's IPTV network is the edge distribution rack, a single rack system housing two VSI Media Processing Platforms containing 25 AVN220 encoder blades. These devices encode the signals from 25 small dish satellite receivers–

one channel per receiver, one receiver per encoder blade. Each platform chassis has enough slots to hold up to 17 encoder blades. "If you're comparing the server based setup to the Visionary," says Swanson, "in the same rack space I can do 17 channels where that one server could only do four." Because it doesn't use a server, the IPTV system is not subject to downtime for maintenance, hackers or computer viruses. Cygne Solutions mounted a network switcher in the rack along with two redundant power supplies offering built-in backup in case one fails.

From the rack, the video signal travels over the hospital's existing network to reach the patient through a large articulating mechanical arm that swings out from the wall behind the patient's bed. Rather than using the traditional wall-mounted television, Swanson installed a 12.5-inch monitor on the end of this arm, flanked on one side by a telephone and on the other by the TV remote control. The arm swings out from a wall unit that is actually a small computer that doubles as a decoder for the IPTV signal coming into the room. Evans says it is this arm and its attachments that receive the most "oohs" and "ahs" from visitors touring the hospital.

"Patients love being able to browse the Internet, check their email, watch TV or movies from that single device at the end of the arm," says Evans. The monitor can also be used as a clinical access device when doctors want to show patients their records, x-rays or MRI results. Cygne Solutions provided traditional televisions with set top boxes in waiting rooms and public areas for patient families. Altogether close to 200 rooms are receiving the IPTV signals through the VSI devices.

MADE IN THE USA

Visionary Solutions builds all of its equipment in America, making it more affordable, adaptable and easier to obtain. "The cost effectiveness is just incredible compared to what was out there," Swanson says. "One company had a similar device that would encode MPEG2, and their chassis held eight channels, but each channel was $4,000." Visionary's per channel cost comes down to about $2,000.

In addition to the cost advantages, each encoder card is "hot swappable," which means they don't all have to be shut down if one needs to be replaced. In addition, if open slots exist, the hospital can add extra cards individually, keeping the cost of upgrading under control.

The VSI system also offers freedom of choice. "The biggest thing is, the Visionary system doesn't care who you have as your cable or satellite provider," says Swanson. "The equipment can take that signal, encode it and distribute it." For the hospital that meant no more CBAN satellite dishes. They expanded on the status quo, using the satellite TV service they already had in operation at the main hospital. "This allowed us to take our media licensing that we'd already paid for and really use it in the most efficient manner," Evans says. "We didn't have to go out and buy a stand-alone system just to feed this equipment." The system will even stream a PowerPoint presentation from a PC or laptop, offering an inexpensive platform for digital signage applications

BANDWIDTH NOT A PROBLEM

Although some network administrators might question how all of this data is going to fit on their existing bandwidth, VSI's Will Bakewell says there are really only two places where bandwidth becomes an issue: transporting video and storing video. If the administrator has an issue with the amount of data his or her network will need to transport, it might be wise to use the new H.264 encoder blade coming out this summer.

"The H.264 is roughly two times as efficient as MPEG2," says Bakewell of the new MPEG4 blade. "For a comparable level of video quality in resolution and frame rate it takes about half the bandwidth of MPEG2." An H.264 movie will also take only half the storage space as an MPEG2 movie. "It's actually only the larger networks that should choose H.264 for real time encoding—like the telephone companies that want to provide TV over DSL, or any WAN with leased lines and a high monthly cost to maintain a high-bandwidth link."

Bakewell says the AVN220 MPEG2 encoder blades currently in use are a perfect fit for smaller networks like the one at Pepin Heart Hospital.

IPTV head end with rack-mounted satellite receivers (the silver boxes) and Visionary Solutions encoder blades (behind and below the blue patch cables).

SUPPLY AND DEMAND

"The demand to have everything on the network creates opportunity for our devices," says Bakewell. "Those administrators who prefer a second coaxial distribution network—and some still do—don't need us. But those who want just one network need Visionary because we provide the best way to get that done. We'll save them a lot of money and give them the best possible quality."

"There are very few IPTV networks out there," says Evans. "I'm really surprised that it has not generated more interest. Maybe people were a little scared of IPTV because it didn't have a lot of presence. But I think the concept is a very good concept. There really isn't a lot to say about it: it's simple and it works. I'm always pleased with systems that there's not much to say about." Those are good systems in any language.

Visionary Solutions, Inc.
2060 Alameda Padre Serra, Suite 100
Santa Barbara, CA 93103
805-566-5811
www.vsicam.com

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