

PBS Stations Find Clarity in DTV Transition

by Sheldon Liebman

May, 2003. As that date approaches, many television stations and production companies are still trying to figure out exactly how to deal with the introduction of DTV into their markets. According to the National Association of Broadcasters, as of September 6, 2002, 460 stations in 136 markets are delivering digital television to over 88% of U.S. viewers. In the top 50 U.S. markets, all but one has started delivering digital television.

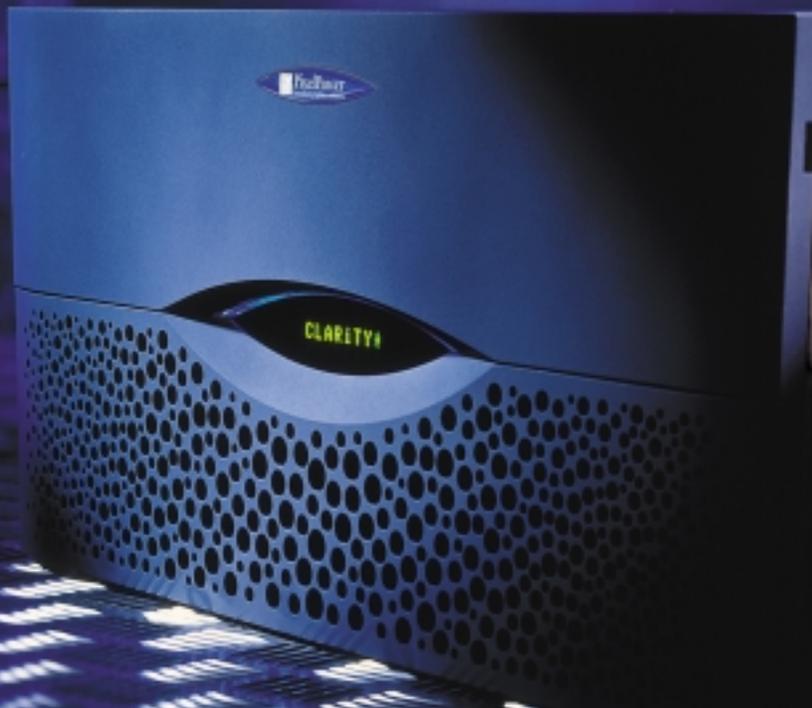
Unfortunately, digital television, like Baskin Robbins ice cream, comes in many flavors. The four major broadcast networks (ABC, CBS, Fox and NBC) have chosen different DTV formats for their programming and transmission.

Digital televisions, while selling briskly in many markets, don't always have everything they need to receive local

digital broadcasts without purchasing additional equipment. In addition, cable television companies in many markets are not transmitting the DTV versions of local broadcasts, making it more difficult for consumers in those markets to view these broadcasts.

For the 349 PBS stations in the United States, the problems are magnified. Because of their public funding, they must be extra careful to maximize results while minimizing expenses. In addition to receiving funding through their membership drives, the PBS.org web site indicates that over 40% of the operating budget of the entire PBS system is received from educational institutions and federal, state and local governments.

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How Flexible Are You?

As the DTV transition has progressed, it has become clear that hardware and software products must be able to operate in many different formats and environments to be valuable. For some stations, the transition to DTV represents their initial entry into digital video of any kind.

For others, new DTV equipment must be integrated with an existing digital infrastructure. In many cases, there are multiple steps in the transition process - one format will be used initially, another format will be used eventually.

Many manufacturers have responded to this challenge by creating products that either support multiple DTV formats out of the box or can be expanded to support multiple formats in the future. The more flexible the system, the easier it is for stations and production companies to consider it. Cambridge, UK-based Pixel Power Ltd, with its U.S. office in Pompano Beach, Florida, has had tremendous success selling their Clarity graphics system to the PBS market.

Clarity is a dedicated broadcast character generator and graphics system. It is a hybrid of dedicated graphics hardware and open platform PC technology. Clarity offers the comfort, familiarity and compatibility of a Microsoft Windows PC, while dedicated graphics hardware provides reliable, real-time performance. All of the application software and dedicated hardware have been developed by Pixel Power, simplifying the integration and support process.

The Clarity family of products offers multi-channel solutions for character generation, still store and graphics applications. They are available in both SD and HD configurations, with the ability to multi-cast both types of video from a single system. For added flexibility, the product can start out small and be upgraded at any time.

Winning the DTV Race at WTVI

The residents of North Carolina seem to have an advantage when it comes to DTV and High Definition programming. At

WTVI, they started researching their options at SMPTE '98 in Atlanta and planning their upgrade during the first half of 1999. As a result, says Chief Engineer Wray Ware, "We broadcast four separate channels during the day, HD programming in prime time, and multiple channels at night."

"We send a standard definition of the analog channel, broadcast the local government channel, carry an educational channel for the teachers and we program the PBS kids channel," elaborates Ware. "From 7 to Midnight, we switch on the high definition signal, with either HD programming we locally originate, HD programs we receive from PBS, or we just up-convert from our standard definition feed. I also have an SD signal and the government channel at night."

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- Wray Ware, Chief Engineer, WTVI

WTVI is luckier than most PBS stations because their cable company, Time Warner Cable, is making a concerted effort to have the HD programming available through their system. "They carry NBC, CBS, ABC and us already," says Ware. "The Fox channel is broadcasting in HD, but they haven't been able to secure a slot on cable yet."

What sets WTVI apart, says Ware, is that "we have the capability to do a live, in studio HD show. We can create it and air it in high definition, and we are doing that every week. Our live shows are generally in the evening, but we also produce two shows every Friday, news and business affairs, taped during the day and aired at night."

At NAB 2000, Ware, Senior Editor Del Holford and Production Specialist Frank McGough split up to find the equipment they needed to turn this fantasy into reality. Holford was in charge of finding the

production gear and, as a result, paid a visit to the Pixel Power booth.

"Before NAB," says Holford, "we had chosen our integrators and they suggested we look at Pixel Power. It was the first time we had heard of them. Michael Graves of Pixel Power spent about 45 minutes with me. He showed me the screens, let me play around with it and I was quite impressed. That's probably where I made the decision that this would be the piece of gear for us."

"Back then," adds Holford, "we were still ignorant enough not to know what a task HD processing was. We just noticed that everything we did on our old system in SD could be done with this system in HD. When we finally ordered it, we went for the full blown, two-channel, HD system."

After the system was installed, Frank

McGough became the point man on the Clarity. One of the strong points for his has been Pixel Power's support of the product. "Any time we've had a question or a situation, they've been quick to respond and every situation has been resolved. Overall, though, it's been pretty intuitive. The learning curve isn't really high."

With their newfound knowledge and power, WTVI has been able to expand their production services department as well. "Up to 15% of our budget can be raised by production services," says Holford. "This helps us save taxpayer money, if we can find clients that do that. We've done a two minute demo for NASCAR and they're looking at using us for some HD work. However, most of our client work is done to bring in clients with an educational component."

"It's a win-win," adds Ware. "It helps to offset our funding and allows us to do



At WTVI in Charlotte, NC Senior Editor Del Holford operates the dual channel Clarity HD graphics system in their new high-definition control room.

some outside client work that other production houses aren't interested in or don't have the capability to create. It also shows our funders that we are appreciative of their help but that we are also looking for ways to be self-supporting."

WTVI's reality goes beyond what many other stations still only dream about. "What we really wanted to do was create a facility like we had in analog, but with high definition. We wanted to do real shows, turn a profit and help our funding in new technology. It's all automated, it's multi-channel, and it's real. People can come here and see it being done every day."

KLRN Does More with Clarity

"Digital broadcasting is the best kept secret in San Antonio," says Charles Vaughn, Senior Vice President for Telecommunications at KLRN-TV. "The number of digital receivers is very small, so commercial broadcasters aren't promoting it yet." Their view of digital television, however, is different.

"We are in the business of aiding the process of education," adds Vaughn. "The

advantage we have is that we can identify our clients and put points of presence at their disposal that allows them to use the services we can provide." As a result, KLRN is developing a network of DTV servers that will communicate over a LAN with computers that have DTV tuner cards installed. The station wants to distribute both SD and HD programming in their local market and needs tools to bridge the analog and digital worlds.

"We can't just walk away from (analog) users," explains Vaughn. "If we find a piece of equipment like Clarity that allows us to have a robust graphics platform now and also supports digital, that solves a lot of problems for us."

Of course, whenever you solve one problem, you can create others. "Our old CG had very limited features and was not particularly user friendly, but once you got used to it, you could pretty much predict what would happen," says Lewis Miller, VP of Engineering at KLRN. "Clarity has so much more you can do, it goes so much deeper, it's been more of a challenge for operators to explore and get everything out of it."

It was also a challenge to integrate the Clarity into KLRN's specific environment. Dallas-based integrator Video Unlimited was a key player in this process. "We bought this as a graphics engine that we could access from several control points," says Vaughn. "Pixel Power knew it could be done, but they hadn't actually done it before. They worked closely with Lew, Jim Hanks from Video Unlimited and another supplier to let us have dual monitors, special purpose keyboards, and all the I/O devices we needed in all the different workstations."

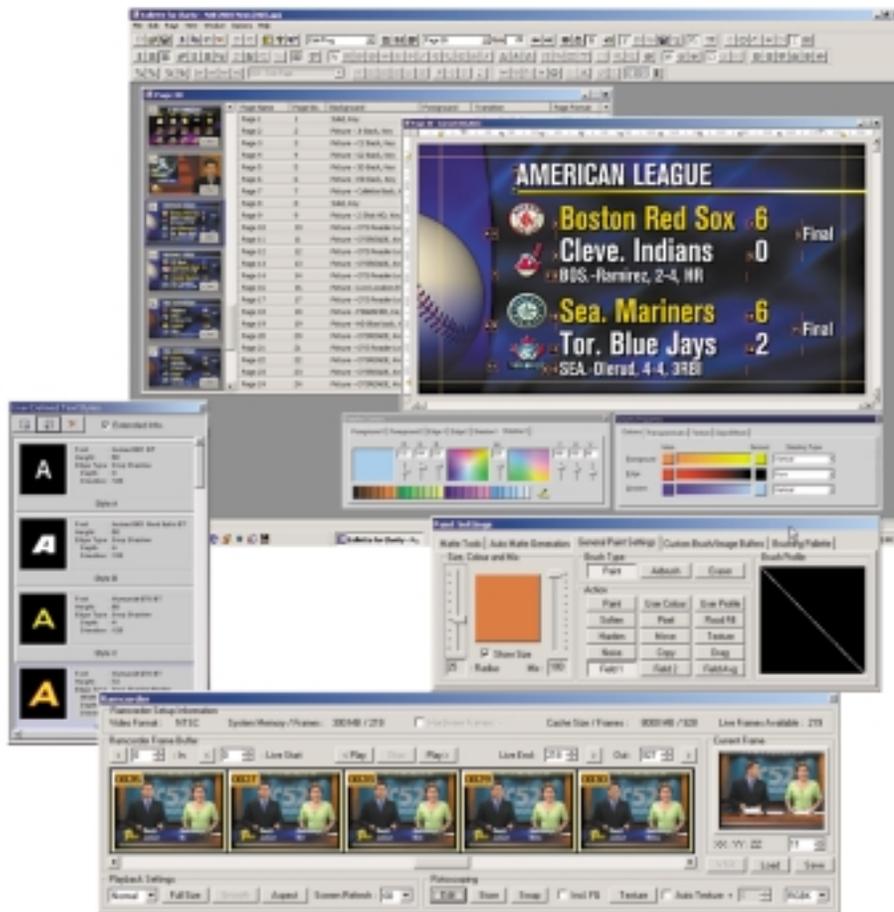
The two key problems," adds Miller, "were getting high resolution images on two monitors at each station and getting the special features of the rapid action keyboard to work. Pixel Power was a really big help during this process."

KLRN took delivery of their Clarity earlier this year and spent a few weeks getting used to it before putting it to the big test - their annual auction. "We did some local public affairs shows and got to use it at a low stress period for a while," says Vaughn. "When it came time for the auction, we got more information on the screen and gave the viewers more facts and details they could work with. We didn't do it in a particularly elegant way since we were still pretty new at it, but we were able to do a combination of some things we were never able to do before. Being able to create a lot of stuff in advance also made it more reliable."

A lot of changes have already taken place, but Vaughn expects a lot more over the next six months. "By the time we actually get on the air with digital broadcasting, we'll switch all of our production operations digital and add the HD graphics engine into the Clarity. That way, when we run HD programming, we'll be able to maintain HD graphics around the programming without initially creating any HD ourselves.

Focusing on the Future at KEDT

At KEDT-TV in Corpus Christi, TX, the thing they first noticed about Clarity was the consistency of its operation from one



Combining the power of dedicated hardware with the familiar Windows user interface Clarity provides a wealth of features while remaining easy to use.

format to another. "The feature set of Clarity from SD to HD was almost identical," says Cody Blount, KEDT's Chief Engineer. "We found that other products lacked a lot of features when they went to Hi Def."

KEDT doesn't broadcast any programming in DTV at this point, but they expect to be on the air by May with an SD resolution signal. In addition, they working with Texas A&M Corpus Christi (TAMCC) to develop educational materials the school can use in classrooms and for distance learning.

The partnership with TAMCC was the driving force behind their decision to build a "digital island" inside of their existing analog facility. "All of the new equipment is being set up for 601 and hi-def," explains Blount. "We're adding switchers, cameras, the Clarity, and a few converters that will allow us to move material

between the new rooms and the existing facility." Like KLRN, they're using Video Unlimited to assist them in this process.

Since all of their digital equipment is new, KEDT wanted the best equipment

"We found that other products lacked a lot of features when they went to Hi Def."

- Cody Blount, KEDT

they could get within their budget. "We're going to use quite a bit of this equipment to produce learning modules with Texas A&M. We wanted to make sure the quality of output was high enough to meet their requirements," says Blount. "The DTV broadcasting component is a bonus."

KEDT has taken delivery of their Clarity, but they haven't actually started to use it yet. "We're just playing with it now," comments Blount. "It will be another 2-3 months until we have everything hooked together." Once that happens, KEDT will train their staff on the product with an eye toward their Spring, 2003 Annual Auction. "We started with the SD version of Clarity and we're already considering an upgrade to the clip store," he adds. "Down the road we'll also consider an upgrade to HD. We think we bought a good box and we're looking forward to using it."

Three stations. Three sets of requirements. One solution. The transition to DTV couldn't be any clearer than that.

About Pixel Power:

Established in 1987, Pixel Power is dedicated to providing broadcasters and facilities with powerful graphics and character generator products. With a flexible, professional range of award-winning products, Pixel Power has over 1300 systems installed worldwide.

Pixel Power Ltd. corporate headquarters is located in Cambridge, England, with a wholly owned US subsidiary, Pixel Power Inc., based in Pompano Beach, Florida. Pixel Power maintains its global presence through a worldwide network of distributors.

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