The Pixelmetrix Story

A Conversation with Pixelmetrix President & CEO Danny Wilson

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Q: Danny, Pixelmetrix is a new name to most of us in the United States, but its roots, I'm told, go back to a very well known American company, Hewlett-Packard.

Danny Wilson: Some years back I was involved with a start-up company in Canada that was focused on very advanced telecom networking technology. That company was acquired by Hewlett-Packard. I became responsible for all the high-end telecom test and management gear in HP. As part of HP, we got into the video testing business as well. I started the project team that did the MPEGScope within HP. Then, HP exited the business. They quit investing in the video testing business. They divested their video server business. I saw this as a big opportunity. I left HP and started Pixelmetrix in May, 1999.

Q: What was the big opportunity that you saw?

Danny Wilson: Due to the inherent complexities of data networks, the telecom industry has a long history and skill set for managing, maintaining and troubleshooting performance problems. They've also created an arsenal of sophisticated tools, management techniques, and monitoring systems to provide operational and control information. Because of this, telecom data networks are quite stable – operating smoothly with little downtime.

As one working with both telecom and video at HP, I saw the convergence of networking technologies. Broadcasting networks were becoming and are now all data -- MPEG video, digital audio and metadata. Yet, broadcast engineers see themselves in new territory. Since packet switching and multi-stream technology is new to television, the broadcasting industry has accrued little cumulative engineering experience and few tools to ensure the transmission integrity of broadcast-centric digital networks. In essence, broadcasters are betting their future success on a technology where advanced network monitoring and management techniques are mostly absent. We saw this as an opportunity and founded Pixelmetrix to equipment broadcasters with the tools they need to successfully manage and maintain their networks.

Q: Thus DVStation, the Pixelmetrix product designed to monitor digital broadcast networks.

Danny Wilson: Yes, Pixelmetrix was founded to create that product. DVStation's philosophy is to provide what we call a Preventative Monitoring solution for broadcast networks. First, the design concept was to present complex network information in a very simple way. The design of DVStation's user interface was extremely important. Second, we wanted to maximize port density. So we have the capability of monitoring thousands of parameters of information at one time. And third, it had to always be snappy. Meaning that regardless of whether you are

monitoring one piece of information or thousands of pieces of information, there's no performance hit. The company was formed to solve those three issues.

Q: How is the DVStation different from competing monitoring products on the market?

Danny Wilson: DVStation started as a new blank sheet design that was focused on solving the video monitoring problem. Everybody else came into the market with a lot of historical baggage. Many of our competitors do testing. We don't really do testing. The testing company's first sales target are the R&D industries, those whose business is designing and engineering video products. Then they try to retrofit their test equipment into something for operational monitoring. A retrofit is never a very good fit.

The architecture of our system was designed from the ground up to acquire, process and present data in the best possible way. With the DVStation, each of those activities is specifically optimized for broadcast monitoring. The visualization of all this complex information is a very important part of our mission. Our GUI sets us apart. Half of our engineering team is dedicated to interface design.

Q: How important are the world's various video standards to your monitoring?

Danny Wilson: The joke about standards is there are so many to choose from. Everybody's got just a little different spin on it and they call it a new standard. We designed our system from a hardware and software point of view to be aggressively modular. We support all of the standard standards. If you have your own standard, we can support that one as well. It involves only a small amount of work in editing a file. This also applies to how we plug into other systems. The world is not single vendor anymore. We have to integrate with whatever systems exist, regardless of manufacturer. Be they automation, network management or control systems, either commercial or home grown. We don't care. The key word here is flexibility. We are flexible when it comes to video, control and integration standards.

Q: DVStation monitors the integrity of signals. What signals do you measure?

Danny Wilson: There are different definitions of what the signal is. A radio or television engineer will spend a lot of time talking about the RF modulation. Is the radio wave waving correctly or not? That's important. In your MPEG-2 datastream, are all your bits lined up in the right order and saying the right thing? Is your picture being coded correctly? Is your sound being encoded correctly? Is the serial digital infrastructure in your plant up to spec? On optical fiber, are all the photons that are going in also coming out? In a nutshell, do your many types of signals look like they are supposed to look? That's what we mean by signal integrity. DVStation can measure all types within hundreds of digital television signal paths. All real time, all simultaneously, all continuously.

Q: DVStation also makes sure all the program elements are correctly delivered to the viewer. Is that right?

Danny Wilson: Yes, that's what call service integrity. We've all seen the great wall of 400 broadcast monitors with some poor operator surveying all of them to monitor problems. On one monitor -- say # 397 -- there's a beautiful image of a football game with multi-channel Dolby Digital surround sound. Everything about the image and sound is perfect, all the bits are just right. Except there's one thing wrong. That channel is supposed to broadcasting the news. #397 is carrying the wrong damn content.

This is a serious issue in an environment where broadcasters are contracted to provide multiple program services. Perhaps that example was extreme. But it's quite easy to broadcast the wrong subtitles, the wrong language. This raises questions. From the operator's perspective, am I providing what I'm supposed to be providing? And from the end user's perspective, am I getting what I'm paying for?

This is an economic issue for the broadcast industry. As we start to see more and more different companies provide programs, re-sell programs, package programs and transmit programs, the concept of a service level agreement between a provider and a consumer somewhere along that value delivery chain will become more and more important. Validating all of this stuff will be much more complicated than it ever has been before.

Q: Another aspect of DVStation is remote monitoring. What's your thinking on this subject?

Danny Wilson: As we move into the digital era, human operators can no longer adequately monitor network performance from a wall of monitors. The era of "eyeballing" is over. Video compression allows broadcasters to send so much more information than ever before. We're moving into an era of hundreds of channels and new services such as datacasting. You can't monitor datacasting with an operator watching TV monitors. The paradigm required to monitor even today's services has changed. Say you have subtitles in five languages...that's now being offered in some places. How do you display that? It's getting more complicated.

At the same time, in tough economic times broadcasters are trying to consolidate operations to reduce costs. There are fewer people to monitor signals now than ever before. Many of those staff members have non-technical backgrounds. They report problems to engineers for maintenance. We recognized this when we designed the DVStation. We made the box so user friendly that a non-technical operator can monitor its analysis through simple "red light, green light" alerts. But we made sure problems can be isolated quickly because the system generates a comprehensive log that clearly explains which system threshold deviated from the norm.

Basically, if a preset threshold in your signal moves out of range, DVStation sends a warning before system failure brings the network down. If a service parameter -- such as language or subtitles -- becomes misconfigured, DVStation's on-air content validation feature lets you know. It's that simple.

Because the center of engineering expertise is not necessarily located where the problem occurs, DVStation's information can be provided across geography. That ranges from the monitoring of signals from un-staffed remote sites to the control of systems in a facility through a corporate

LAN or over the Internet. The system is even capable of sending a detailed e-mail alert to a pocket pager. Having a flexible system that can monitor several regional sites from a single location is a very important asset.

Q: Pixelmetrix is headquartered in Singapore. As a potential customer based in the United States, what assurances can you give me that the DVStation will be fully supported here?

Danny Wilson: American customers will receive first class support on a quick response basis. We have opened an office in Florida, which is our U.S. base of operations. We stock service parts in the office there. With overnight FedEx delivery, we not far away from anyone. Our system is very software-based. DVStation uses very reliable, simple hardware that is all dynamically programmable. We frequently offer software updates that can add functionality and increase the capability of the machine. These updates can all be downloaded from our website, which is hosted in Seattle and offers very high speed access to our customers in the United States.

Q: So you are telling me that if I have a problem, I can get it fixed overnight.

Danny Wilson: Yes! That's an absolute promise.

Q: DVStation is a modular platform. Will Pixelmetrix adapt to future signal and program formats through the creation new modules?

Danny Wilson: Absolutely. You can preserve your investment in a DVStation by adding modules as your needs change and grow. Right now we have hardware interface modules that can acquire the signal and validate signal integrity. These are designed for cable television, satellite broadcasting and for signals routed throughout the interior of the facility itself. And we offer support for ATM optical fiber, because more and more people are doing program transport over telecom rather than satellite.

Q: Obviously, broadcast monitoring has undergone tremendous change in a short time. What's ahead?

Danny Wilson: The battlefield of the future is shaping up between the networks of the telecom, broadcast and Internet industries. Each is vying for the business of the others. It's a constantly changing business environment, but the common ground is that a vast amount of data is being carried over an increasing number of digital networks. To insure service quality, there must be a solid Preventative Monitoring strategy.

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