

Virtual Technology Powers Virtual Radiology Business

If space is the final frontier, clearly Premiere Imaging Solutions (Oklahoma City) is way ahead of the game. With seven imaging centers and not a single radiologist on staff or on site, the busy imaging operation moves information across multiple dimensions to keep the wheels of business turning.

"We beam images and imaging expertise everywhere," commented Roy Barney, Premiere Imaging Solutions Chief Information Officer (CIO), who is the driving force behind this voyage into the business possibilities of virtual image reading. "Our centers are spread out over large distances across the state of Oklahoma, often in isolated, rural areas. We also have an additional site in Kansas," he said. "Using Neurostar's advanced Virtual Radiology Network (VRN) for image interpretation, management and communication; we are able to conduct business using teams of off-site radiologists reading regularly for all our locations, without a single radiologist on staff."

Even in today's sophisticated imaging world, Premiere Imaging Solution's information flow is particularly complex. Barney notes, for example, that in Norman, OK, a local contract radiology group rotates through the DMP Imaging Managed center to read all its studies. However, images from five additional DMP centers also are sent to Norman for on-site reading. In Tulsa, another radiology group interprets all locally generated exams, while also reading neuroradiology studies for DMP's McAlester, OK location and Alzheimer's studies for Tulsa.

In its Wichita, KS center a local group of 16 radiologists working at six locations unrelated to DMP read all that center's exams.

"We utilize superior radiology expertise, including numerous sub-specialists, and deliver high-quality, immediate results, often in geographic areas where this level of image interpretation had not previously existed," explained Barney. In the process, DMP has built a reputation for high quality services as well as a rapidly growing business. Not surprisingly, it relies heavily on IT for its success.

A product of today's complex radiology environment, DMP Imaging is a development company that builds and manages multiple multimodality imaging centers and owns the controlling interest in all of these. All centers offer ultrasound, CT, MR, PET and cardiac PET. Through its Premiere Imaging Solutions arm in Oklahoma City, it delivers general accounting support, billing and IT services, including the VRN, for all sites.

"When we were looking for a digital image management and communications platform, we had clear goals to support our business model. And we made extremely high demands," commented Barney.

In particular, DMP wanted to support multiple sites from one central point of access to help manage and monitor workloads easily and keep studies flowing smoothly.

It wanted to accomplish this without the virtual private network (VPN) required by many PACS solutions because these are complicated and costly to set up and maintain.

Neurostar's architecture, based on a common platform to support unlimited sites, and focus on virtual radiology were clearly aligned with DMP's goals. Moreover, DMP found that the advanced VRN technology takes advantage of the Internet rather than utilizing proprietary VPN connections, also in line with DMP's objectives. Because the thin-client VRN application downloads from a central server, any Internet-enabled PC can be easily and economically transformed into a sophisticated workstation. Given all this, the Neurostar system saves the significant expenses of proprietary connections among sites as well dedicated workstations. "Moreover, as we grow, new locations can be added quickly, easily and for minimal expense," explained Barney, who anticipates DMP's growth rate to be three to five centers a year.

DMP also wanted a system that was affordable enough to deliver a return on investment (ROI) that would pay for itself in 18 months. "As a rapidly growing organization, cash flow is paramount," he commented. "Neurostar delivered not only high performance but also excellent value."

The VRN is available on an affordable ASP pay-per-use model with complete IT support, eliminating the need for elaborate return on investment (ROI) analysis. The solution can be demonstrated to reduce operational costs virtually from day one. Neurostar VRN infrastructure sends the image viewing application over the Internet to any location where reading takes place. Once acquired, images also are sent for storage on a redundant system archive. This is enabled through a special Internet gateway, available as a simple "black box" or Web-based download on an existing server. The Gateway can handle DICOM information directly from a modality or any existing PACS. "It's virtually plug-and-play," said Barney.

From the archive, using sophisticated dynamic auto-routing based on a full range of study and physician criteria, images are typically pushed to contracted radiologists, wherever located, for their immediate expert interpretations. Studies also can be sent from the server to referring physicians or to any destination worldwide over the Internet.

Optimizing reading efficiency, comprehensive individual user worklists download from the server and include all studies assigned through multiple acquisition sites. These are automatically updated as work progresses, keeping workflow current. Additionally, a special Study Lifecycle Management feature enables tracking of turnaround times for each study and prioritizes worklists based on commitments to individual sites. Load balancing tools ensure that reading is allocated optimally among the radiologists reading for DMP.

DMP contract radiologists are extremely happy with the system, as is Barney, who is the sole IT expertise for the entire operation. "Most other solutions we investigated would call for much more IT involvement, and also were almost twice as expensive from a total cost of ownership perspective over three to five years." With three new centers in the offing, Barney believes that the Neurostar system will effortlessly scale up to address DMP's growing needs.

"Neurostar offers the best support of any software I have been associated with during my career," he said. "They respond quickly and completely and are always available. The company can usually fix any problem in minutes remotely. I set everything up myself and they supported me. We've never had to have any Neurostar staff onsite at any of our locations."

Could there be a more appropriate way to support a virtual business model? [OPCT](#)

Roy Barney, Premiere Imaging Solutions Chief Information Officer (CIO)



Neurostar's Virtual Radiology Network (VRN) helps DMP Imaging manage complex information flow.