All in the Family

Strategic alliances among PACS

Vendors produce user benefits

By Steven K. Wagner

A stroll through exhibit halls at the Radiological Society of North America scientific meeting reveals some interesting partnerships. In the PACS community, Barco, of Kortrijk, Belgium, has helped set the tone for strategic vendor alliances, joining with industry giants such as Agfa HealthCare, Fujifilm Medical Systems USA and McKesson Information Systems to provide a 3-D solution that can be integrated into their PACS workstations.

Barco's Voxar 3D™ product (formerly the Voxar product line) is used to integrate the company's rendering technology within Windows-based PACS software. The integration of Voxar 3D viewing software makes stand-alone 3-D workstations redundant and allows radiology departments to leverage their existing PACS investments.

"We have worked hard during the past several years to obtain some very prestigious partnerships with many of the vendors in the PACS community," says Skip Amiot, vice president of sales and marketing for Barco. "Our relationship with [vendors] involves providing a 3-D solution that can be integrated into their PACS workstations. For the PACS vendor, we facilitate major savings in engineering resources. For their sales and marketing teams, we enable them to offer a must-need, competitive, high-quality 3-D toolset that meets the everyday needs of radiologists."

Not to be overlooked is the end user. "Users benefit in a big way, as they can be at one workstation and use our Voxar 3D product as if it were another tool icon on the desktop," Amiot says. "No push, no pull, no query, no re-entry of patient demographics, no having to walk to another workstation. Voxar 3D works as an adjunct to the PACS workstation software."

Once a study is read and interpreted with Voxar 3D integrated, it is saved and sent back to the PACS. The user simply moves on to the next case. "Workflow speed and efficiency in everyday reading are what we strive to provide," Amiot says.

Agfa HealthCare

Few imaging companies possess the longevity or range of experience of Agfa HealthCare, of Mortsel, Belgium. Agfa is the most recent digital and analog medical imaging solutions provider to integrate Voxar 3D, Version 4.2, into its PACS solution, Impax™.

Dave Talton, radiology segment manager for PACS at Agfa, says significant benefits already have been realized. "Radiologists can have full access to all of the Impax capabilities, as well as to all of the Barco capabilities on a single piece of hardware," he says. "The software resides on the same computer, and [radiologists] can access it as frequently or infrequently as they need. Additionally, they're looking at a singular worklist and there aren't any extra steps required to bring up the software. If the physician decides to use the Barco capabilities while reviewing a case, a single button initiates the environment. It's ideal, especially with the burgeoning sizes of datasets."

The integration of Voxar 3D with Impax was announced last year. Agfa had anticipated such third-party integrations and created the product with that in mind.

Not to be overlooked is another benefit: increased diagnostic acuity. "The principle goal of radiologists is to get to a diagnosis," Talton says. "The software can either help us formulate that diagnosis or confirm that diagnosis when used in conjunction with basic 2-D viewing."

"The second piece of the puzzle is communicating results," Talton continues. "Obviously, it's desirable to communicate results back to the referring physician and the patient. The integration we've put together allows those results to be stored in the Impax database and presented seamlessly to referring physicians. The responsibility of the radiologist is to make a diagnosis and communicate that diagnosis. The software is beneficial to both of those."

Talton says the likely evolution in the industry is a single workstation environment that radiologists will use to do their primary diagnosis and analysis. "Some of our competitors have two completely separate platforms: a PACS workstation and an independent analysis workstation," he says. "Often, those are very capable systems. However, to date there's not really been an effective convergence of those. This is a strong step in that direction."

Amicas

The flagship product of Boston-based Amicas is its Vision Series™ Web-based PACS platform, which includes Imaging Office™, Radiology Office™, Radiology Enterprise™

and Enterprise Enabler™. The series is designed to meet the PACS, image distribution and teleradiology needs of customers that complete 3,000 to 20,000 exams on the low end and up to 250,000 exams to 1 million exams on the high end.

"We've integrated 3-D into our full suite of products, including the components that will be used for multi-planar reconstruction (MPR), maximum intensity projection (MIP) and color volume rendering," says Hamid Tabatabaie, president and CEO of Amicas. "The Barco product has had a number of notable effects. First, the number of images per study has increased. Second, radiologists can use MIP and MPR to zero in on one portion of the imaging study, then zero in from there on single study images."

According to Tabatabaie, the product's simplicity has had a significant effect on users as well. Technologists are now able to perform segmentation upstream from radiologists, reducing the amount of work required of imaging professionals.

It's also convenient for referring physicians, Tabatabaie says. Many radiology practices buy PACS to increase their efficiency and improve the turnaround time to physicians. However, referrers may not always know what they're looking at when presented with 2-D images. By receiving 3-D images and a report, they get more of a context to the anatomy as opposed to simply visual images.

"Now, you can get all the 3-D functionality with instantaneous access to all of the patient's priors. And 3-D is no longer an island – it's an integrated part of the imaging workflow. It really has changed the way we can position 3-D with PACS," says Tabatabaie.

"We now position ourselves by saying "no workstation user should be left behind,' whether it's a dedicated 3-D workstation operator or a less powerful referring physician," Tabatabaie says. "Everyone can join 3-D, and 3-D can join everyone."

It all boils down to three things:

- Status – at any given point the user has access to the status of any image for any patient.
- Workflow – every user is now connected with other users, either upstream or downstream.
- Depth of functionality for advanced imaging – tools range from the simple, such as MPR and volume rendering, to niche applications, such as calcium scoring or virtual colonoscopy.

DR Systems

DR Systems, San Diego, has incorporated Voxar 3D across its product line, including the Catapult™ technologist workstation and Dominator™ radiologist workstation. The integration saves users the time it takes to walk to a standalone post-processing device

and back, improving workflow and efficiency. It also has added an element of continuity to reporting.

"A technologist can produce 3-D images that flow to the radiologist, the radiologist can produce 3-D images or add additional images and have that go directly to the referring physician, and it accumulates within the same case," says Murray Reicher, MD, founder and chairman of DR Systems. "That's a significant advantage. Because everything's supplied by one vendor, there's one service contract and one level of training."

According to Reicher, Voxar 3D enhances DR's product line in at least one important way: There are no expensive modules to buy for dental, colon, cardiac, MR angiography and other features. Some vendors offer $400,000 in upgrades to a $75,000 workstation.

"We just don't think that's the way medicine should be practiced," Reicher says. "By integrating the Barco technology into the DR product line, there isn't that nickel and diming, which can get expensive. We feel the tight integration we've achieved provides a better, more efficient workflow and a more cost-effective environment for our customers."

Dynamic Imaging

Based in Allendale, N.J., Dynamic Imaging's key product is the IntegradWeb PACS, a second-generation Web-driven enterprise-wide PACS architecture that enables users both within and outside a radiology department to access the same images and toolset.

"Our product philosophy is to converge all of the various tasks that radiologists need to do in one single work space," says Alex Jurovitsky, CEO of Dynamic Imaging. "Traditionally, 3-D has been done at a post-processing station, a $70,000 to $120,000 proposition."

But he says in 80 percent of cases, only a certain subset of these tools is used. By embedding Barco's software in Dynamic Imaging's application, users gain a powerful 3-D toolset that addresses most of their needs to interactively work with images.

Jurovitsky says the Barco package has significantly enhanced Dynamic Imaging's product offering. It extends the range of tools available to radiologists, enables radiologists to use those tools remotely and permits referring physicians to reformat and reconstruct studies on their office PCs.

"MIP and MPR are clearly the most popular features," he says. "Everyone loves the fact that they're buying a sophisticated software package that can be shared by all users instead of being locked on one station. That gives them a tremendous advantage in workflow."

On the other end, the integration itself has benefited Dynamic Imaging in several important ways. It has saved the company significant research and development costs,

reduced time to market for the company's 3-D offering and resulted in brisk sales sooner than otherwise might have been expected.

"I believe everyone should do what they do best," Jurovitsky says. "The 3-D companies are putting a lot of resources into developing software, and we don't need to replicate the same effort. Instead, we can concentrate on the things that we do best."

"It's helped us tremendously," Jurovitsky says. "The bottom line is there's an unstoppable trend of combining functionality, such as 3-D, MPR and MIP, into the radiologist PACS workstation," Jurovitsky says.

Fujifilm Medical Systems USA

Fujifilm, Stamford, Conn., sees Barco's Voxar 3D as a necessary element in its Synapse™ PACS portfolio, which offers tools for the management, storage and distribution of images and information throughout the entire healthcare enterprise.

Since the integration, the primary benefits have been simplicity and speed, according to Bill Urban, Fujifilm's product manager for network systems.

"Users open up their PACS software, pull the studies in and render 3-D and MPR," Urban says. "Everything runs on the same workstation. It's easy to install and easy to use. It's a good fit."

McKesson Information Solutions

With headquarters in Alpharetta, Ga., McKesson Information Solutions has emerged as a leading information technology company. Its IT solutions range from healthcare performance management to homecare to regulations and compliance.

McKesson has integrated Voxar 3D into its Horizon Rad Station™, the company's primary diagnostic viewer.

Thus far, the key user benefit has been the capability of launching from 2-D to 3-D with a push of a button. Data is passed seamlessly from the McKesson application to the workstation.

"For the user, it's very efficient," says Warren Edwards, vice president of engineering at McKesson. "It truly minimizes what the user has to do in terms of getting from 2-D to 3-D. It's a very nice integration and presents a nice display of patient data for the user. It presents another view of the data – 3-D – for clinicians to enhance their diagnostic process."

While enhancing the diagnostic process, Voxar 3D also enhances McKesson's product line. "It really benefits us in that it's integrated into our workstation," Edwards says. "In the past, users had to look at data in 3-D on a separate workstation. Now, they're sitting at

our workstation, doing their job, and they can look at data in 3-D with the click of a button," he says.

Edwards says McKesson could have developed its own 3-D software, however, development would have required McKesson to dedicate a larger team for perhaps a year. "The time it took us to get the Barco product and offer it to our customers was about six months," Edwards says.

Stentor Inc.

Based in Brisbane, Calif., Stentor Inc. has incorporated Barco's Voxar 3D into its PACS solutions, including iSite™ Enterprise, a Web-based image distribution and viewing solution; iSite Radiology, a 2-D-based dedicated diagnostic reading software tool for radiologists; and iVault, an online medical image archive solution. The series is billed as the first image and information management system to deliver on-demand diagnostic quality images over existing hospital networks, advanced radiology reading stations for radiologists and "always online" long-term storage.

"It's very important that we give our customers the ability to view specific studies in 3-D, to do it seamlessly from our workstation and to get it to the marketplace very quickly without having to develop that 3-D expertise in-house," says Matthew Long, vice president of marketing at Stentor. "Voxar 3D is a fantastic general purpose 3-D viewer. It's straightforward, simple, easy-to-use, affordable, software-only and has very good image quality. It's the product that's driving into radiology more so than many of the competitive products, which are so scientific in their makeup that they're out of reach of the common user."

According to Long, Voxar 3D enhances the product line in one important way: It gives the company 3-D power and visualization capability that it otherwise wouldn't have. Benefits so far have included quickness and ease of use and overall value-added to the iSite series. Feedback from users has been universally positive thus far.

"Voxar 3D allows us to get involved in the market and to learn and understand the market without having to put the research dollars into it," Long says. "It improves our time to market and greatly minimizes our risk – and cost."

And, it has improved the company's competitive position in the market. "This product and this relationship allow us to continue to evolve our product to offer better and more compelling solutions to our customers without having the traditional development delays that we would have if we were trying to develop 3-D ourselves," Long says. "It allows us to constantly push the envelope."

Strategic alliances such as these in the PACS spectrum prove to be a win-win situation for the end user and the patient. Fast turnaround times, better communication between facilities and personnel and better patient care all stand to benefit from these partnerships.

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