The Case for VNA

Vendor neutral archiving can meet growing needs for efficient delivery of comprehensive patient information.

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Modern healthcare providers are struggling to manage the exponential growth and increased complexity of digital patient information, often referred to as “big data,” across disparate organizations, applications and data silos. Continued government mandates for demonstration of meaningful use of this data bring additional pressures and deadlines as well as incentives. The situation is intensified by the fact that most healthcare information technology (IT) systems were not built with the goal of supporting a connected healthcare ecosystem that would yield a comprehensive picture of a patient’s total healthcare experience. Traditional health IT solutions, including PACS, continue to manage and store patient information using proprietary formats, despite the availability of standards. Thus, sharing patient information within and beyond enterprise boundaries can seem like an impossible problem to solve.

In a Frost & Sullivan white paper, analysts report: “Solutions that support the ability to access, view and manage a wide range of patient data from a wide range of sources meet the needs of a single enterprise and the coming needs demanded by collaborative care models.” As long as patient data remains isolated within a multitude of data islands, including PACS-based image archives, methods for getting to the information needed to produce a rolled-up view of the patient will be cumbersome and expensive. Provider productivity will suffer, and positive patient outcomes will be compromised. Many private and public healthcare organizations are searching for new solutions.

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The only practical solution is a completely vendor neutral clinical repository for enterprise content management, including medical images. In this scenario, PACS becomes a departmental tool for specialized viewing, while workflow applications are separated from data archiving and management. The core infrastructure element needed for this type of solution is generally referred to as a vendor neutral archive (VNA). The concept of a VNA provides the greatest potential for helping healthcare organizations fully deliver on the promise of an image-enabled electronic medical record (EMR) that offers a complete patient picture for providers working in a collaborative care model.

Differentiating the VNA

There is a great deal of confusion in the marketplace today about the difference between PACS enterprise archives and vendor neutral archives. Much of this stems from the need for a formal definition of a VNA, while a portion is driven by vendor hype and misinformation.

In a report focused on medical enterprise data storage, IMS Research says that a vendor neutral architecture should be able to “accept data irrespective of the originating PACS or other viewing, acquisition and workflow management system, making these originating sources changeable without having to change the data formats or interface to the archive.”

“Medical Image Sharing and Management Drives Collaborative Care: Overcoming Fragmentation to Create Unity,” Frost & Sullivan
The IMS report defines the minimum key components of a VNA to include DICOM and other standards-based communication, support for multiple PACS, non-DICOM data sharing, clinical lifecycle management and security, long-term archive, and disaster recovery. It also notes that departmental PACS, enterprise PACS and DICOM archives are not considered VNAs.

This definition, seemingly clear, is not strong enough; it doesn’t include requirements for product labeling. In a 2011 white paper, PACS expert Stuart Gardner, president of SG&A Consulting, explained that PACS vendors have responded to consumer demands for data ownership solutions by offering their own flavor of a VNA. Some are creating confusion in the marketplace by incorrectly labeling solutions that are inherently proprietary as “vendor neutral” because they have the ability to support a standard query and retrieve request. Therefore, these vendors have merely re-cast their existing proprietary archive offering as a VNA.3

**Real neutrality**

Creating a truly neutral vendor archive requires that a vendor have proven tools, processes and experience integrating and migrating data from and to any PACS. Aside from the obvious requirements for true interoperability, healthcare business and IT leaders must consider the question of whether a PACS vendor offering an enterprise archive would ever be highly motivated to help a customer who wants to place a competing PACS technology within its clinical domain or whether PACS vendors who have been fierce competitors in the past would be willing to work together for the greater good to achieve full interoperability with competitive applications.

The typical PACS vendor business model has always been about building products that work well within the same product line, encouraging greater product penetration into a customer account. According to Gardner, “Handing over control of the workflow, integration and data management or ownership is not a revenue producing strategy for the PACS vendors. It will likely never be part of their customer offerings.”

Technology buyers must not fall prey to misleading offers when it comes to PACS vendors offering VNA solutions. They must validate assurances of a PACS vendor’s track record collaborating with other technology vendors, especially direct competitors.

> “A vendor neutral archive can stem the proliferation of proprietary, departmental archives.”

_Gartner_

**The shift toward VNAs**

VNAs were developed because PACS platforms have been highly proprietary, offered limited tools for data management and have not performed and scaled as needed. IT research firm Gartner Inc. notes the importance of VNA technology in several reports published within the past two years, stating that “vendor neutral archives will be necessary to manage the precipitous growth in storage fabrics due to the demands of medical imaging and other non-DICOM unstructured storage,”4 and that “a vendor neutral archive can stem the proliferation of proprietary, departmental archives by centralizing enterprise image storage to a single, vendor-neutral, scalable repository.”5

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3“The World Market for Medical Enterprise Data Storage - Vendor Neutral Architecture,” 2012, IMS Research
4“Why You SHOULD NOT Purchase a VNA from a PACS Vendor,” March 8, 2011, Stuart Gardner, SG&A Consulting
5“CIOs Should Use These Guidelines to Ensure Healthcare IT Megasuite Vendors Don’t Handcuff Their Futures,” December 2010, Gartner
A truly independent VNA

According to Gardner, a true and independent VNA provider should:

- Have a primary focus on interoperating with each and every vendor, including PACS, storage and EMRs; in many cases this will result in making another vendor’s products work better with the VNA than without it
- Include necessary features such as tag morphing, independent information lifecycle management (ILM) policies for distribution, storage and retention, and independent storage support
- Offload aging studies to improve the performance of departmental imaging systems
- Facilitate PACS decommissioning and PACS-to-PACS migration to improve business continuity posture
- Store and manage non-DICOM related clinical content, accommodating images from less obvious sources, such as endoscopy, ER (wounds) and ophthalmology

The common thread binding all of these capabilities is experience. The VNA vendor should be able to demonstrate interoperability with every major PACS vendor acting in an active archive role and should have experience migrating from and to each vendor. And this means replacing the PACS archive, not just making another copy.

Looking forward

The hype and confusion created by mislabeling PACS solutions as VNAs is likely to continue. The bottom line, however, is that PACS vendors, by and large, do a good job with medical image acquisition, display, departmental communication and workflow. The data management and enterprise interoperability aspects of PACS, however, are problematic for healthcare providers and government institutions that need to assemble a complete picture of the patient from many disparate and proprietary silos of patient data.

As our industry moves to the next level of technology-enhanced healthcare delivery and outcomes, VNA is emerging as a solution for escalating needs. It greatly simplifies the process of storing and managing all patient medical content and images, regardless of its origin, format or vendor orientation, making information readily available across the healthcare delivery spectrum. VNAs provide an essential foundation for efficiently delivering a comprehensive, image-enabled view of the patient.

About the author

Shannon Werb serves as CIO for Virtual Radiologic (vRad) where he oversees vRad’s IT operations and works with clients to develop innovative ways to leverage data and technology to improve patient care and operational efficiency. Mr. Werb frequently speaks at industry events on topics that include medical imaging, clinical content management, VNA platforms and the rapidly evolving world of healthcare IT. Prior to vRad, he served as chief operating officer for Acuo Technologies.