

## VNA: An Enterprise Imaging Core Component

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Healthcare systems, hospitals and healthcare entities are more and more discovering their needs for an enterprise imaging (EI) strategy. As we are learning, imaging markets have been experiencing explosive growth due to advances in functional imaging technology and exploration of molecular imaging targets for diagnosis and therapy. They have potential application in patient selection, pharmacokinetic, dosage-finding and proof-of-concept studies. In addition, functional imaging is poised to play an even larger role in theranostics as our need for imaging requirements expand in all disease states. Thus, the continued expansion of imaging means integrating the appropriate sharing of patient information – which mimics the tag line of SG&A since 1992—“Solutions for the Integration of Patient Information.”

An emerging challenge is the use of or lack of use of the vendor neutral archive (VNA) as a key building block of an EI strategy. Just as challenging is determining which VNA will fit your enterprise needs for functionality, performance and cost. In this paper, you'll hear from executives from some of the leading VNA software vendors that may help in decision-making.

Since I wrote my earlier paper “Why Not to Purchase a VNA from a PACS Vendor,” the needs of our industry have continued to evolve and many VNAs from PACS vendors have been deployed. Are those VNAs doing the job? I'd say yes, to a degree. If you look at what they are accomplishing for their respective institutions and the needs of those facilities, you might conclude that they are meeting modest expectations. These expectations can be attributed to the lack of understanding of what the VNA can do and its role within the EI strategy. Many VNAs purchased early on sought to satisfy what was thought to be the defining purposes of purchasing a VNA: that the archives developed by legacy PACS vendors were proprietary to the point of limiting an institution's ability to change vendors when it came time to replace the existing PACS with a PACS that would more effectively meet its needs of today and tomorrow. Let's face it, the majority of those archives were generated by radiology and cardiology PACS while today we have the expanding needs in other applications such as oncology, neurology, POC ultrasound and pathology. And, don't forget the needs of the many documents

structured and unstructured that need to be affiliated with the appropriate patient and thus the need for cross document sharing and XDS and XDS-I.

Let's take a look at the role of the VNA and what might we define as the more effective use. A popular concept of late has been a "deconstructed PACS." All told, this is a "best of breed" solution for limited applications of radiology and cardiology PACS with an image-enabling capability for the EMR that include an enterprise viewer which is a necessity. However, when we take a look at what a properly configured and deployed VNA can provide, it is much more. Isn't it an archive? For patient information? And, isn't it supposed to make this patient information available to anyone with the proper credentials and privileges? In thinking further about this, I began questioning "what's the difference between an EMR and the VNA? There is a 'huge' cost difference?" The multiples are staggering. Don't we focus on workflow with the VNA? Don't we focus on workflow with the EMR? In reality, there are several functional differences such as order writing/generation and the management of the patient from the point of encounter. Shouldn't these work hand-in-hand? Absolutely.

We also have a growing security concern in healthcare IT today. Focusing solely on the EHR as your organizational strategy and leaving content managed departmentally and relying on numerous interfaces to access is only creating a growing risk factor of ungoverned unsecured data silos. Clearly a centralized IT-managed VNA can play a greater role in the security of the patient's medical record moving forward.

My questions are meant to drive the thought processes to define, in-depth, the role of the VNA in the enterprise and, in particular, its role in the ever-growing enterprise imaging strategy. We are spending hundreds of millions of dollars on technology to acquire and manage patient information and still struggling with the strategy. This is where governance can begin to play a role and sort out the role of the VNA and its integration to the EMR. This still-emerging role of the VNA will be quite significant as imaging continues to grow not just in diagnostics, but in therapy planning and therapy itself and the emerging area of theranostics. With the growing applications of genomics and the resultant customized medications, we are early in our needs for managing our patient information. The VNA management system may facilitate earlier stage decisions to continue, discontinue or modify treatment of disease. This has significant clinical, operational and financial ramifications.

As we address these questions, we need to define the ongoing question of governance: Who is responsible for the management of the VNA? Who

operates it? It obviously resides in the I.T. department, however, its operations are dependent on the input of the clinical side of the house. We have been experiencing similar issues in the operations and maintenance of our PACS since the early days which was the driver for starting the SG&A School of PACS Administration. Our clients needed help. Today, these same clients are still learning.

So I decided to turn to the experts for some answers on the role and objectives of an effective VNA. I asked Bill Lacy, VP of Medical Informatics at FUJIFILM Medical Systems, to comment on their position as a VNA vendor in today's market, considering FUJIFILM is a PACS market share leader and now through the acquisition of TeraMedica, also a VNA vendor. "As a PACS vendor that eight-plus years ago began our VNA journey by starting to build a standards based VNA capability from within our PACS, and quickly realized that was a flawed strategy as the imaging need was exploding beyond radiology where workflows and data types were diverse, we in a way validated your original paper. We quickly took a new approach, realizing that enterprise imaging was much more than decoupling PACS and having better DICOM ILM management. We acquired TeraMedica so we would have an independent, truly neutral, content management system for the core of our enterprise imaging solution. As we move forward, you will see us leverage our Sonosite ultrasound and endoscopy businesses in our enterprise imaging solution and, of course, yes also our image visualization technology. We agree, VNA needs to be an independent organizational technology, offering new levels of PHI content security and access, but we believe a vendor with a deep understanding of broad departmental imaging workflows, combined with the right VNA and enterprise viewing technology is unique in today's market."

For more perspective, I reached out to Michael Dolan, the Global Vice President of Lexmark. As he sees it, "We view a true VNA as a platform that enables healthcare enterprises to manage data, share inside or outside the organization and integrate with many applications, including EMR and EHRs. With an enterprise VNA, there is the ability to segregate and preserve information derived across multiple hospitals and departments within the organization. The VNA also must have the ability to federate the information and provide secure access based on leveraging Active Directory or LDAP through various

PACS, EMRs and other applications like a Zero Footprint (ZFP) EMR integrated Enterprise Viewer. A key VNA requirement is to provide one information lifecycle management (ILM) "console" enacting clinical aspects of how the data are retained, moved or compressed. One ILM user interface

simplifies the tens, hundreds, and even thousands of imaging systems in an organization that likely don't even have ILM capabilities. The value to an organization is massive at the application level, but the VNA's IT value is the ability to leverage IT infrastructure as the organization decides and not be tied to archaic and expensive integrations of existing vendors inside their proprietary silos. Basically, a healthcare system of one hospital or dozens needs to get control and take back ownership of their data from all sources."

And for one more perspective, I spoke with Mach 7 CTO Eric Rice. As he sees it, "To many sites, an enterprise imaging strategy delivers a solution to managing unstructured data across the enterprise. With these strategies, the VNA is often seen as the EMR for unstructured clinical media. Traditional EMRs today do a good job at managing the structured patient data. Patient orders and encounters, medications, allergies, lab results and other structured clinical data are all nicely brought together under an EMR but leave the unstructured clinical media from radiology, cardiology, pathology and others outside of the EMR. VNAs can provide a solution to this EMR gap and complete the electronic medical record."

After speaking with these experts who share a vision on the role of the VNA, it becomes clear that the VNA is "central" to an overall I.T. strategy for patient information. Workflow including viewing, security and ILM are supporting applications that help deliver "a core component of the enterprise imaging strategy and the patient record." It's time to take a closer look at VNA and how it fits into your strategy.

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