A FEATURED EBOOK

VNA Origins

Knowing where various Vendor Neautral Archives found their roots can help determine the right viewing and archiving strategy for your organization.

terarecon

CONTENTS

terarecon

P 650.372.1100 | INFO@TERARECON.COM

Smart Strategy

INTRODUCTION

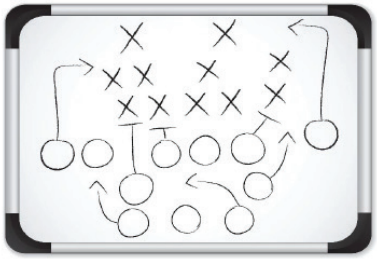
More often than not, we are engaged with a customer as a viewing provider but end up gaining a seat at the strategy table. We've had the unique opportunity to watch the industry mature and transform around us while maintaining our position as an innovator in the midst of it all. Partnering with our customers means more than just adding new locations to our roster -it's about being a trustworthy, intelligent consultant as you make some of your most impactful and strategic IT decisions for the future.

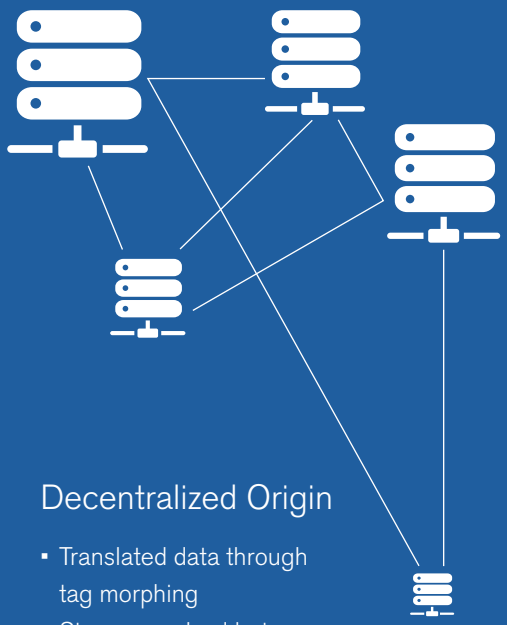
As a viewing provider, we're helping clients take a viewer first approach to their enterprise imaging strategy while they determine the next steps for the storage and archive components.

As the industry looks at how they'll store and access imaging data in the future, they find that their current array of proprietary, disparate archives must be replaced with a new way forward. Enter the Vendor Neutral Archive (VNA). It's a nice concept and a popular buzz word but the fact is that different VNAs have different origins and come from different parents.

We've worked with many of today's archive vendors, collaborated with them across many projects and understand the subtle differences that make them unique. They have all taken different paths to get where they are today even though they all fall into the same category. As a result, they all have pros and cons.

As your partner, we'll provide some insight into those origins and what it says about how they work. It's not that one is better than another. It comes down to the workflow you desire and how the combination of tools you select will determine your success in achieving those goals. Let's discuss the history of four types of VNAs, see where they were born and how they execute in order to help you select the best fit for your organization.





Decentralized Origin

- Translated data through tag morphing
- Storage evolved between archives
- Performance aggregated across many nodes
- Complex administration
- Typically DICOM only
- DICOM wrapping and data transfer overhead

Decentralized Origin

Decentralized VNAs began a long time ago, starting as a means of data conversion, bridging images from one proprietary PACS system to another. Essentially, they would have a "box" that sat in the middle of several systems, captured all data produced by one system, wrapped it in DICOM, and held onto it until it was needed by another system. This "let me store it here and see who asks for it" model began the trend that is now VNA. As you set up this model across an organization with many disparate archives, you create an architecture that is comprised of many small databases sitting between archives, converting data. One flaw in this model is that each database requires its own management. If you look under the hood, they mostly do DICOM because that was their history. They do a lot of DICOM wrapping because they want everything to come through their system and not be required to change the proprietary nature of the file. This also creates a lot of overhead. If we, as a viewer, would like to speak to the VNA in the fastest forms of rapid image transfer then it's important to ensure the archive is not adding additional conversion steps to the process, which sometimes cripples the clinical workflow. On the other hand, a decentralized model scales very nicely because you can continue to add these mini-cells or nodes to your VNA network as new systems come into play. Often, images are needed most in the areas most near to where they were created.

terarecon
P 650.372.1100 | INFO@TERARECON.COM

Centralized Origin

Centralized VNA's began taking on the challenges created by decentralized VNA's where a customer wanted to store a massive quantity of data in one large database versus spreading it across a network of smaller databases. With one database to manage, intelligence regarding lifecycle management and workflow can be more effective as it's administered centrally from one system versus many. One can say, "I'd like to manage dermatology, cardiology and radiology with various lifecycles in one database." The answer is "no problem." While it offers good life cycle management and workflow, it is still one big database in the middle. That means the bigger and bigger it gets, it runs the risk of slowing down, and sometimes it doesn't make sense to move large image datasets to a central place. But, with today's networks and powerful computing environments, it can be both high performance and efficient.

Some of the newer players began changing the game with a model where they receive, store, and distribute image files in many formats, not just DICOM, and they index them based on information gathered through more than just the DICOM image. These companies built systems that are highly interoperable - not caring where the data comes from, how it's communicated, or where it goes - they handle it all. While a decentralized VNA will compete on performance because the many mini-databases are quick and nimble, a centralized VNA will compete on intelligence and non-DICOM support. Centralized VNA's typically do more than their decentralized counterparts, but be aware that the interfaces to non-DICOM image sources are often more complicated. You need a viewer that can handle these formats and interface with the VNA efficiently.

Centralized Origin

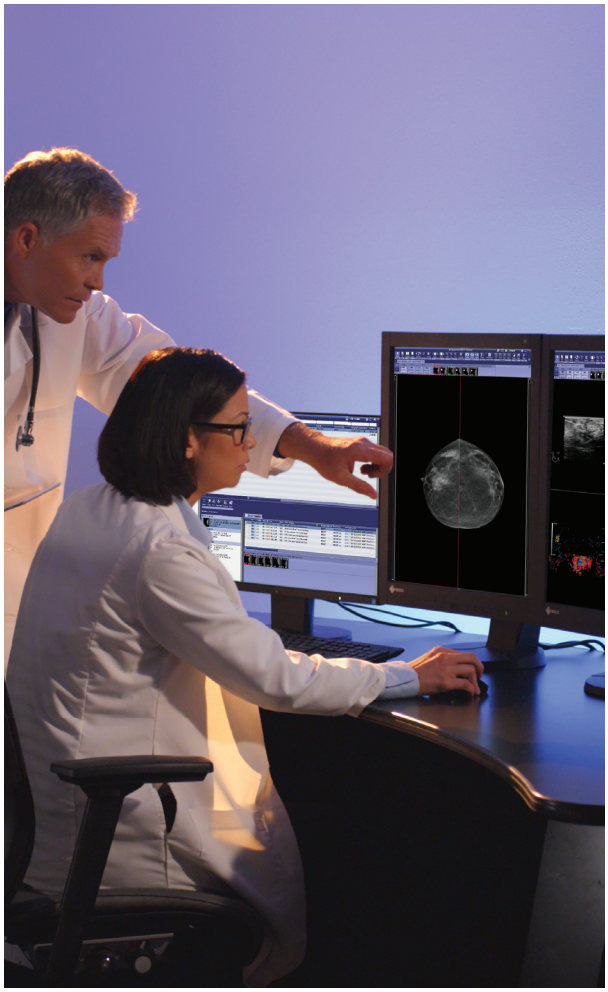
- Indexed data through central database
- Performance centralized in one archive with simple administration
- Strong Image Lifecycle Management
- Increased support for non-DICOM in native formats
- Intelligent workflows evolving from centralization
- Requires strong computing environments and bandwidth

terarecon
P 650.372.1100 | INFO@TERARECON.COM

PACS Origin

With the advent of VNA and the divergence across several methodologies, it became easier for other players to enter the game. There was even a season where no one could clearly tell you what truly defined a VNA which made it easier to add your technology to the list. Naturally, the thought of vendor neutral archive was a direct challenge to the only archiving model that had driven the industry for many years - PACS. Of course PACS companies are archiving power-houses, the problem was, and often still is, the proprietary nature in which they stored their images and equally proprietary connections to their viewers. Each vendor had their own unique mechanism that optimized the data for their own databases. As a result, customers began to feel “stuck” with their PACS vendor and technology trapped.

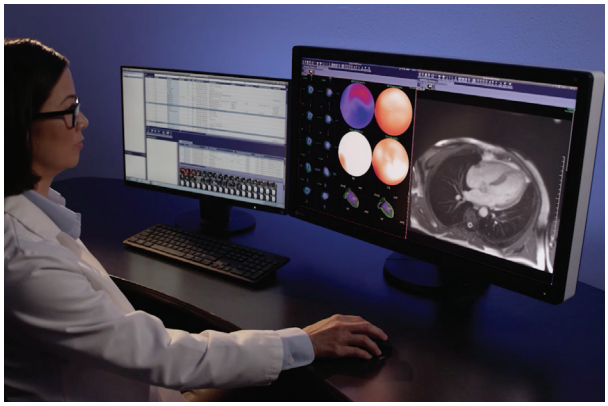
- Late-market adaptation with repackaging of core PACS components
- Retaining proprietary storage syntaxes
- Low utilization for non-DICOM
- Excellent radiology workflow maturity
- Nascent interoperability



PACS Origin

If PACS companies didn't find a way to compete with the VNA model, they would soon find themselves eplaced. Many came out with rudimentary systems initially and have since evolved. When the very vendors that customers are seeking freedom from try to enter the space, they can't exactly call themselves "vendor neutral" as it would be a clear admission of the conundrum they've created. On the other hand, every company is a vendor. The key to being "vendor neutral" is how well the archive works separately from the viewer(s) and how well the company partners with its customers.

We've done research and received responses from hundreds of CIOs in US Healthcare who emphasized their desire to step away from the PACS model and into a more future-proof, vendor neutral scenario. PACS companies have a challenge ahead of them. We work with most of the largest PACS companies and they can provide an excellent platform for future image storage, if they offer high performance and interoperate well with other storage and viewing systems –you don't want your images locked in a proprietary storage syntax. That may be a deal breaker for your organization as it is very hard to establish vendor neutrality and ensure interoperability when you don't control long-term access to your data. Conversion costs to move off of a proprietary system become a growing liability. PACS companies are very strong at radiology workflow and it is possible that much of your imaging data resides there already. A vendor-neutral viewer can access these images and it can work nicely if the performance of the PACS archive is sufficiently high.



What's best for my organization?

CONCLUSION

Determining the way forward for your organization should take several factors into account. Ask yourself:

- What types of image data will the VNA handle?
- Is my data centralized or distributed?
- What are our workflow objectives within radiology as well as beyond it?
- How well does each VNA technology work with my current and future viewing platforms?

Regardless of where you land, it is wise to consider the role your viewing provider plays and how interoperable the proposed archive will be in combination. We strongly advocate a Viewer First™ approach to your enterprise imaging strategy - creating immediate clinical impact, consistent user experiences, and multi-specialty system consolidation - while connecting to your existing infrastructure and selecting a future archiving strategy.

How can we help?

Strategy

Define your goals and a unified vision for the future.

Implementation

Utilize best practices and proven methodology.

Rollout

Ensure adoption and support across the enterprise.

Optimization

Get the most out of your technology investment.

Turnkey

Save time and money with pre-packaged solutions.

terarecon
P 650.372.1100 | INFO@TERARECON.COM