Enterprise Archive Scalability with your VNA: How Big Is Too Big?

Even for the biggest advocates of VNA, the reality is that putting all that imaging data into one place can pose questions about storage and scalability. Is there a limit to how much data VNA can reasonably handle? Can the same system really handle a single clinic and scale up to an enterprise scenario? The answer may be simpler than you think.

Anyone who's ever spent time with Gary Nicolas knows he doesn't mince words. If something isn't working, he'll tell you. If it is working, he'll tell you. In short, with Nicolas, you don't have to wonder. You'll know.

That's why he's the perfect person to give you the brutally honest truth about Vendor Neutral Archive (VNA) scalability. And for institutions learning about or considering VNA, this is an important topic that could have huge repercussions.

Nicolas, who currently serves as a VNA archive segment specialist in the US, says the answer is simple. "No". "The spread is a single institution with low-volume, single DICOM source to up to 150+ hospital enterprises with 60 PACS systems managing 40 million souls," he says. "I want a system capable of scaling from a department level solution with a small data set all the way to a country-wide solution. That's what I want."

And, according to Nicolas, it's reality. In fact, he argues country-wide VNA, as seen across Europe, can be much easier than some of the institutions we see in the US.

"Every group has their own way to process information and how they think about it," he explains. "Trying to apply the workflows of Radiology across the enterprise, is not a recipe for VNA success.

GE Healthcare.com

“We can continue to add nodes to take on functionality. If I need to be able to handle 10 billion patients, we’ll add nodes to support the extra throughput.”

Cardiology operates differently than radiology – and then you can go completely wild with sports med. An elbow hurts, knee hurts – traditional DICOM focused departments can be overwhelmed because they don’t understand the unstructured workflows. And let’s not even talk about how radiologists’ minds don’t always understand VNA.”

Nicolas maintains the issue is complex – and not just because of the differing departments within a system have various workflows, but also because of the number of clinics a single patient may encounter.

“One of our customers is a single healthcare institution with over 40 groupings of hospitals,” he explains. “It’s possible for a single patient to have over 100 different medical reference numbers (MRN). They all have some autonomy, but if you visit one clinic, that’s an MRN. If you traveled, there’s another MRN. You’ll also have a market number, a corporate number, and an enterprise ID. If you travel from Florida to Seattle, you might have 30 new records before you hit your final destination. And now take that complexity and apply it to 40 million patients.”

If your head is spinning, you’re not alone. The notion of simplifying and centralizing all this data for large systems is daunting. The good news is getting there isn’t as complicated as most believe.

“Our system is built on the concept of nodes that take on the capability,” he continues. “If you think of super computers and you need an extension, you add a node to the network. It’s how it’s designed. We can continue to add nodes to take on functionality. If I need to be able to handle 10 billion patients, we’ll add nodes to support the extra throughput.”

Ensuring the technology can meet the needs is only half the battle. The other, and often more challenging aspect, is when humans get involved.

“People are generally resistant to change, especially when it comes to software,” he says. “If you tell your people that this is an opt-in program, forget it. It won’t work.”

The best approach, Nicolas contends, is one that involves both the vendor and the institution working together. And both need to be committed to the process.

“It’s a partnership,” he says. “The VNA vendor needs to have the depth of knowledge and be honest with the institution about what workflows are working and which needs to change. It’s also having institutions who can put aside preconceptions. One hospital brought in departmental people and encouraged everyone to have a neutral bias. We, as a vendor, can give input, but holding back their bias is critical to wrapping it into an existing workflow.”

Resisting bias, Nicolas says, can mean the difference of success or failure. The key is having people willing to try.

Another critical component is understanding milestones. “Enterprise-wide DICOM, that’s a big one,” he says. “Full integration with EMRs and then moving into a non-DICOM environment.”

Ultimately VNA scalability is about enabling the technology to be prepared for the best patient care. “I want all the relevant patient data I need it in one place, at one time,” he concludes. “If you have a solution that makes people adapt to the technology, why do it? VNA adapts to you. And that’s not me dreaming. That’s here today.”