

Use of Vendor Neutral Archives in PACS deployments

Case studies

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What we will look at

- Evolution of Vendor Neutral Archive
- Use in the PACS environment
- Case studies
 - ▶ Reprise IHE Cross-Document Sharing
- PACS integration

Introduction

“Vendor Neutral Archive” - evolution

- Recognised industry term but....
- VNA's focus is not to be an archive
 - ▶ **Management** : Instead, a solution to manage clinical information through its entire lifecycle
 - ▶ **Access** : Provide content by liberating it from system silos
 - Including viewing of images and documents through standards
 - ▶ **Control** : Give control of content back to organisations
- Use of standards
- Vendor neutral is important
 - ▶ Neutral for content production system vendors
 - ▶ Neutral for storage and server hardware vendors
 - ▶ Neutral for viewing / access technology vendors

Uses of VNA in the PACS environment

1. **Transition Architecture** to support PACS migration
2. **Long-term store** to manage information lifecycle
3. **Access platform** – enabling sharing of multiple document types beyond system and organisational boundaries
4. **Viewing**– through sharing, or with the addition of a viewer, VNA can be the principal repository for a PACS
5. **Migration tool** – gives control of data going in and out
6. **Storage** – move to newer storage technologies or offsite storage / cloud without needing any changes on systems accessing content

Case studies

XDS-I : Cross Document Sharing for Imaging

XDS Metadata

author
availabilityStatus
classCode
healthCareFacility
languageCode
patientID
title
typeCode

1. PACS creates a study

2. Manifest created

3. Manifest submitted to repository

4. Document registered

5. Search registry for documents

6. List returned

7. Retrieve manifest from repository

8. Retrieve images

9. Images displayed to user



Case Study 1

Salisbury, Wight & South Hampshire NHS Consortium

- 4 NHS Trusts
- SWASH replaced 4 GE PACS with Sectra
- VNA in two offsite datacentres
- Perceptive Universal Clinical Platform is XDS-I source



Case Study 2

Surrey and Sussex NHS Consortium

- 6 NHS Trusts
- Replaced 7 GE and 1 Agfa PACS with Philips PACS
- VNA onsite / offsite model
- Perceptive Universal Clinical Platform (UCP) is XDS-I source



Case Study 3

NHS Wales / GIG Cymru

- 6 Health Boards across Wales & Velindre Cancer Centre
- Contract replaces multiple PACS systems with Fujifilm
- Perceptive provide UCP, and XDS Registry and Repository



How VNA is being used

- Migration engine
- Long term, replicated storage of content in datacentres
 - ▶ Variety of models for hosting
 - ▶ Providing Information Lifecycle Management
- Enabling sharing in a multi-vendor environment
 - ▶ Radiology imaging has been the initial driver
 - ▶ But only just the beginning....
- Vision to provide **content in context**

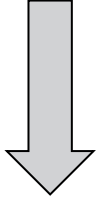
PACS-VNA integration

PACS – VNA synchronisation

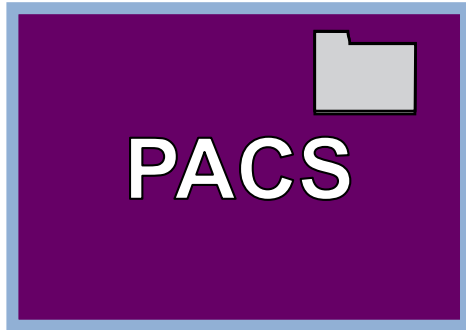
- Studies on PACS aren't static
- Various events create a need for changing PACS studies.....
 - ▶ Demographic updates
 - ▶ Workflow exceptions : need to add, remove or replace images in studies

PACS – VNA synchronisation

Trigger event



**DICOM
Study**



DICOM C-STORE



**Change needs to
be conveyed to
VNA**

PACS – VNA synchronisation

- Despite the variety of changes, we only need three things to keep PACS studies synchronised with the VNA
 1. HL7-level changes (demographic or order message)
 2. Sending of new images / instance
 3. Notify deletion of 'old' images / instance
 - Replacement = delete old + send new

PACS – VNA synchronisation

- **HL7** messaging caters for patient-level changes and DICOM can be used to publish new images / instances
- **Bad news** : DICOM has no mechanism to convey image deletes to a downstream system like VNA
- **Manual option**
 - ▶ Parallel management of PACS and archive
- **Electronic option**
 - ▶ Custom HL7 message or web service agreed between the two vendors
 - ▶ Proprietary (usually between different products from the same vendor)
 - ▶ Imaging Object Change Management
 - Profile of IHE, standards based, well-defined

VNA – PACS synchronisation

- If VNA is where the Information Lifecycle rules are being executed, PACS needs to know too
 - ▶ “Store and Remember”-type PACS need informed
- **Bidirectional** : Need a VNA-PACS message as well
 - ▶ Image Object Change Management caters for this as well

Conclusions

- VNA concept extends well beyond “archive”
- Content platform
 - ▶ Expansion into areas outside of Radiology and Cardiology
- “Vendor neutral” is now more than connecting to different PACS
 - ▶ Storage technologies, viewer technologies to give access
- Extensive use of standards gives customers control of data and wider access to it
 - ▶ Ask for standards-based technologies in new system requirements : XDS, XDS-I, IOCM
- Liberates clinical content
 - ▶ Reduce time spent chasing for information
 - ▶ To enable better informed decision-making

Questions ?