Design Considerations and Lessons Learned - Implementing a De-Constructed Radiology PACS across a large IDN

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Background

MedStar Health and Karos Health embarked upon a real-world implementation of a deconstructed PACS solution across a ten hospital, 120 facility health system.

Much has been written recently about “true de-constructed PACS” systems and “VNA traits”. This increase in articles is because the concept of extending radiology expertise throughout a region, beyond the boundaries of a traditional PACS, has many appealing aspects. For example:

- Comparisons across sites, interpretation across sites.
- Radiology specialists are more accessible and specific cases can automatically be assigned, across sites, based on workflow rules.
- Productivity is enhanced by distributing workloads across broader groups at all facilities.
- The Emergency Department is better served off hours by centralizing reading rather than widely distributing radiology coverage. ER coverage will also be internalized which improves quality (we think) and standardization.
- Zero footprint, server side rendering viewers eliminates the need for local storage.

All of these are desirable features and benefits and business drivers that pique interest to move towards a deconstructed PACS in large enterprises. However, implementing an enterprise wide system, even within a single healthcare institution is a complex undertaking. At MedStar, a large urban healthcare system based in Washington D.C., Maryland and Virginia (DC metro area) consists of over 500 modalities, 1,000,000 orders/studies annually, over 100 radiologists, and tens of thousands clinicians and other clinical users, across 10 hospitals and numerous ambulatory centers.

The lessons learned, analytics, and statistics will be presented.

Evaluation

A de-constructed PACS can best be assessed by comparing the effectiveness of the following criteria to the prior, local PACS systems baseline:

- Image retrieval performance
- Reliability
- Average number studies read annually per radiologist
- Number of studies read by the appropriate specialist
- How quickly studies are accessed and read
- Number of studies referred to radiology specialist
- Number of studies stored annually compared to past years
Discussion

The primary topics of a large scale transition from local PACS system to a regional de-constructed PACS are discussed. These topics include:

- Overall clinical and business benefits
- Organizational challenges in a multi facility environment
- Normalizing data and processes
- Data migration
- Building the team
- Software choice and vendor selection
- Overall architecture of the de-constructed PACS is based on Integrating the Healthcare Enterprise (IHE) Cross Enterprise Document Sharing (XDS.b/XDS.b-I)

Planning and deployment
The project plan, high level task list from “concept“ to “go live”, and lessons learned will be shared.

Conclusion

This project go-live at the first hospital site was September 2015, with subsequent go-lives across all hospitals following. Since we are in go-live phase, details of the conclusions will be presented but are underway at this time.

Keywords

De-Constructed PACS, Zero Footprint, Reading Worklist, Enterprise Imaging, VNA