

# Consolidating clinical content in truly vendor-neutral platform

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Lexmark<sup>TM</sup>

# Agenda

- What does it mean to consolidate content?
- Why consolidate content?
- Key concepts of a truly Vendor Neutral Platform.
- The meta-data challenge

# What does it mean to consolidate content?

## Capture

- Capture and normalise using standards and translations
- DICOM, HL7, Cross Enterprise Document sharing (XDS)

## Store

- Be vendor neutral for storage as well as content-producing systems
- Use your enterprise storage, not silos

## Manage

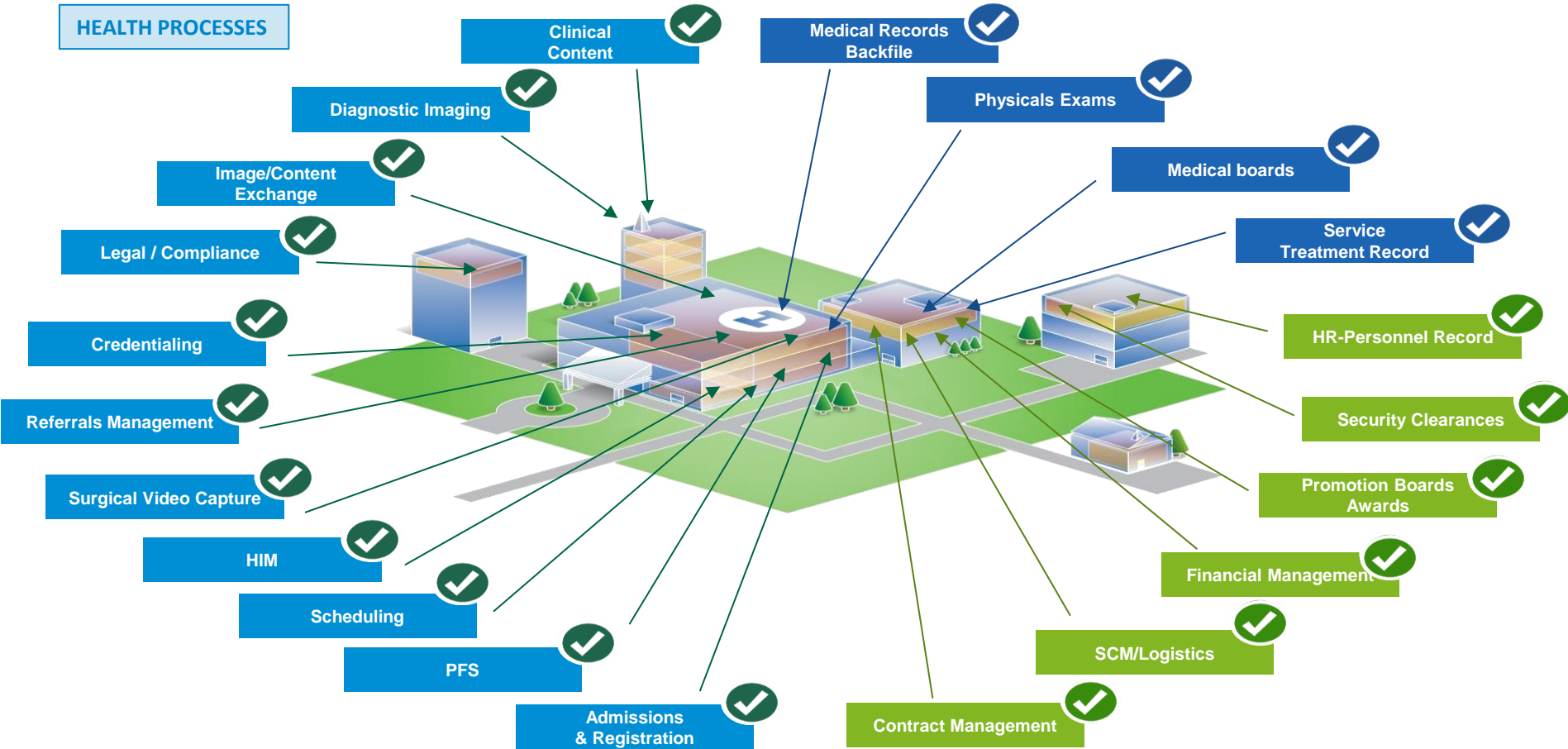
- Secure Access
- Control information lifecycle management
- Maintain audit
- Management Reporting

## Access

- Make data available for clinical decisions
- Be a single point of access for applications to get data
- Enrich patient record with images, documents, multimedia

# All Healthcare Content

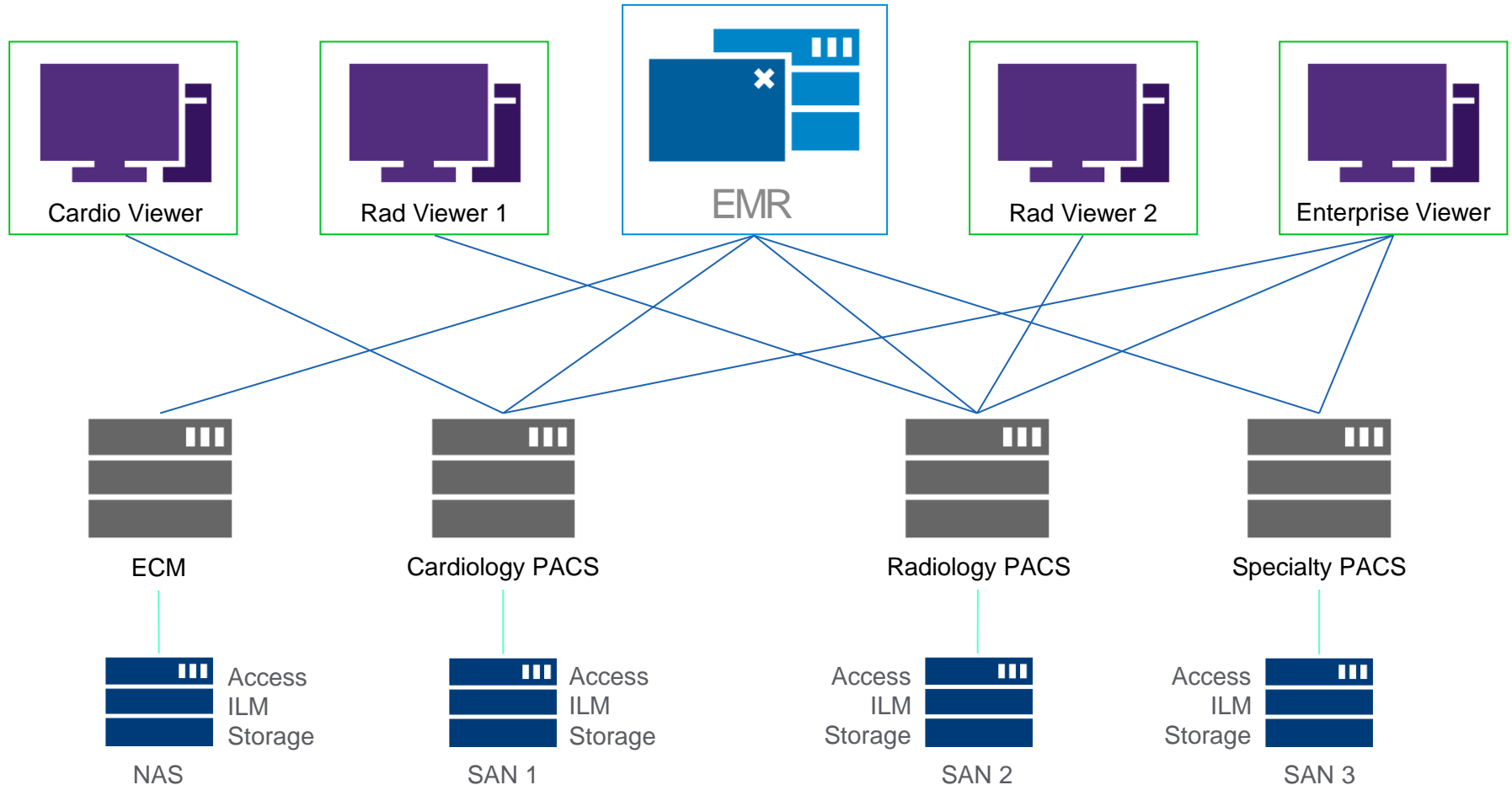
## HEALTH PROCESSES



# What's driving the need to consolidate?

## Departmental content systems

Inflexible, non-interoperable, multiple interfaces required for integration

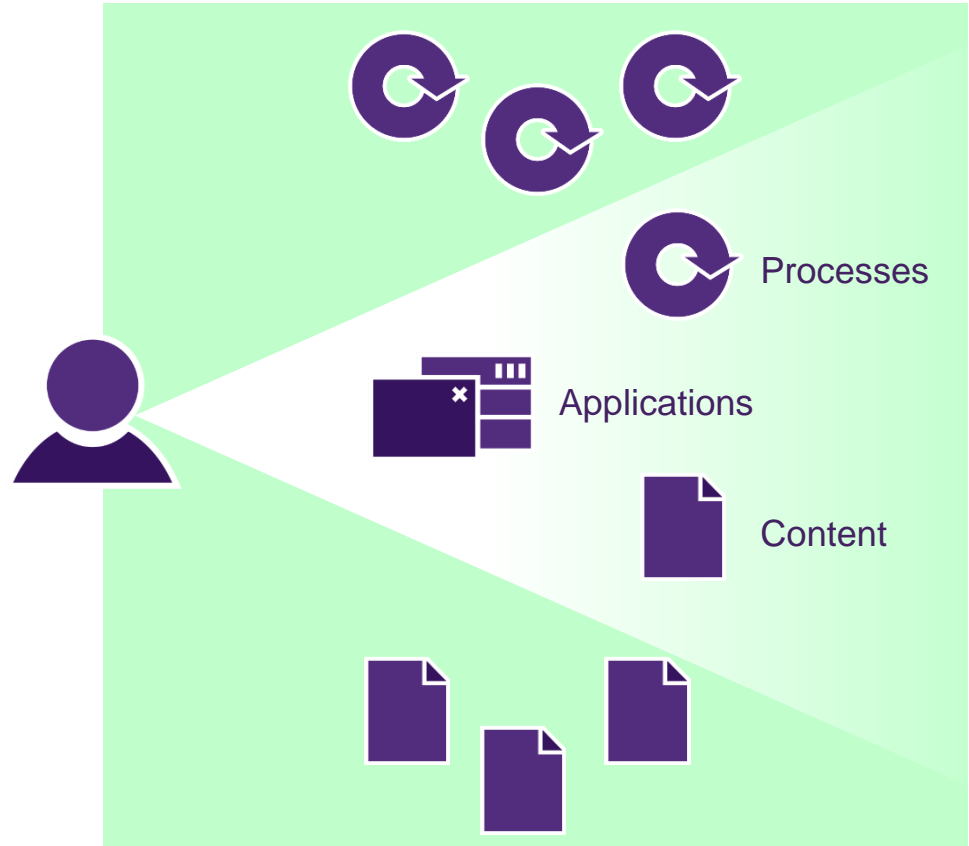


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Storage dictated by vendor - Multiple platforms to manage and maintain

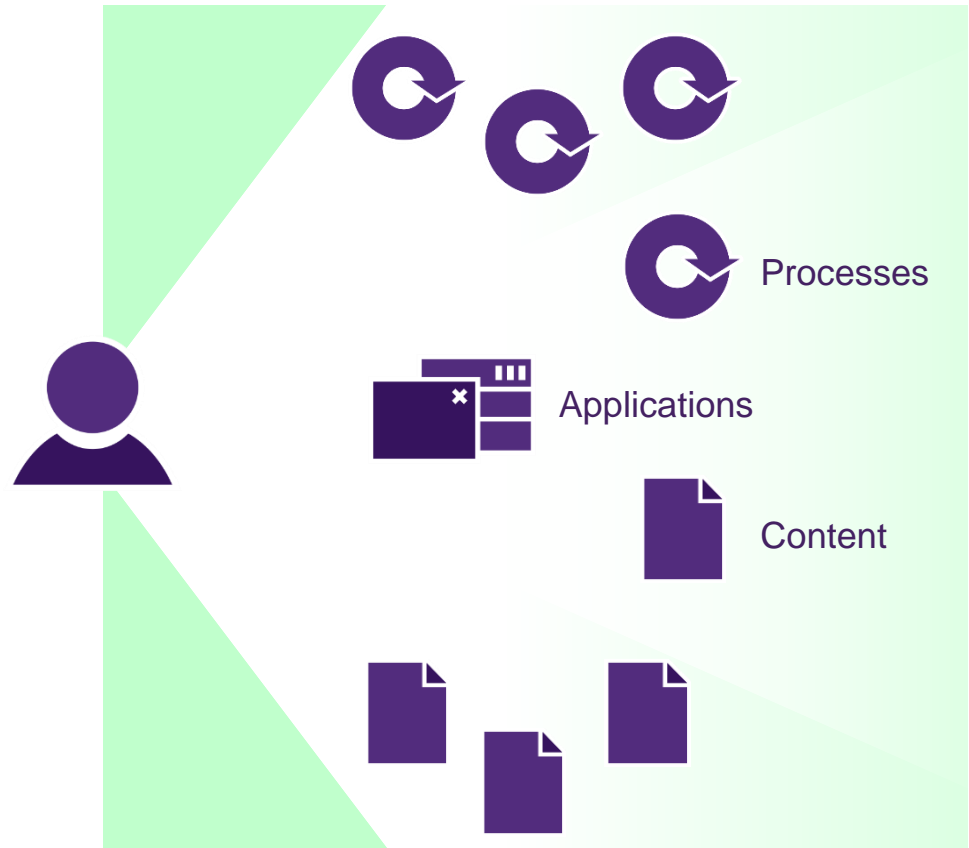
# The big problem facing organizations today

A lack of visibility  
keeps people from  
making fully informed  
decisions



# The big problem facing organizations today

The most effective  
processes are fueled  
by the most relevant  
content



# Growing organizational challenges

## Volume of content is increasing

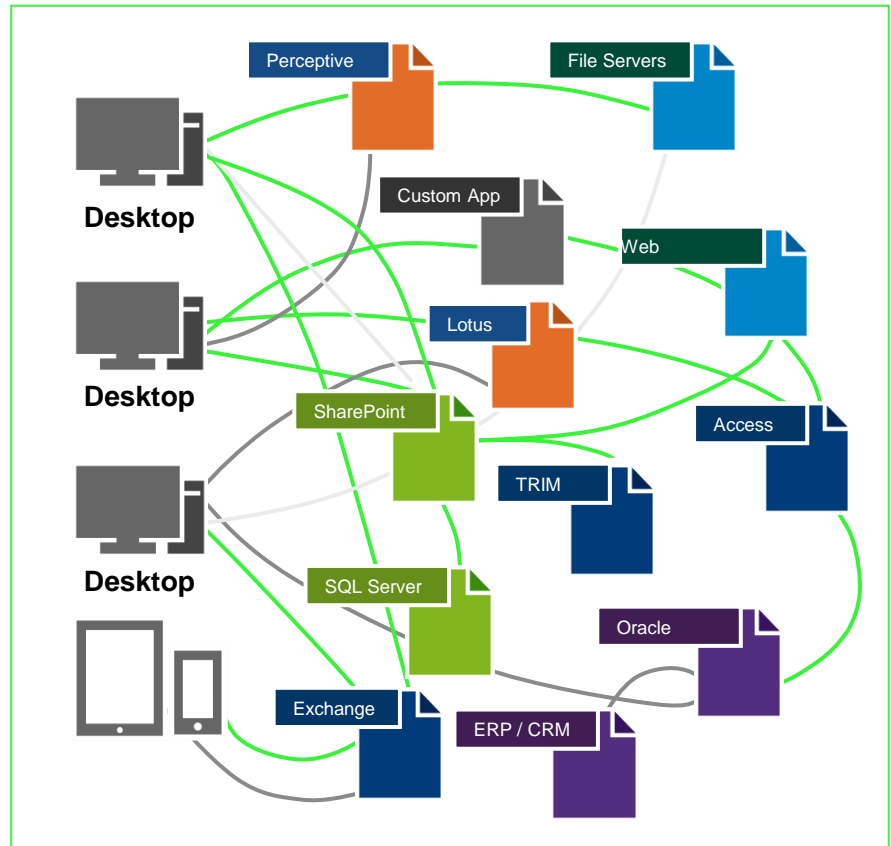
- ▶ About 1000 times more than just a decade ago

## Sources are expanding

- ▶ Line of business applications
- ▶ Email systems
- ▶ File servers
- ▶ Custom applications

## Access points are multiplying

- ▶ Desktops
- ▶ Laptops
- ▶ BYOD (iPhone, Android, Windows 8, etc.)
- ▶ BYOA
- ▶ Patient Access





# Incomplete patient record

## Patient Information

↳ Do I have it all?

✔ Discrete Patient Data in your EMR

⚠ Unstructured Data



Scanned Forms



CT Scans



EKGs

Hyperspace

Test, Jason

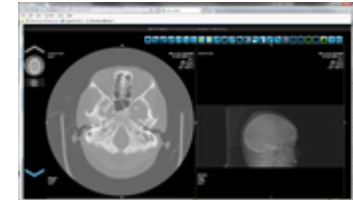
MRN: 68422388, DOB: 1/17/1920, Sex: M, Account: 100000002528, Unit: No HIPAA HEART CENTER [101000011]

Chart Review (Last refresh: 2:43:32 PM)

Encounters | Notes | Meds | Labs | Micro | Imaging | Card Proc | Procedures | ECG | Other Orders | Episodes | Letters | Referrals | Media | Misc Reports | Pat Sum Extracts | E

13 records match filters, all records loaded

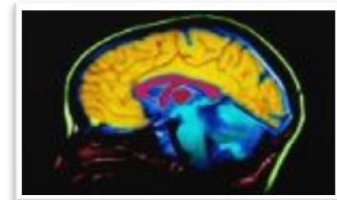
Adm...	Disch Date	Pt Class	Type	Department	Provider	Description	Pri...	HAR	CSN
01/28/2013			Order Transcription	RR INFUS	Champion, Phys...				3000000012677
01/17/2013		Inpatient	Admission (Current)	RR HEART	Gell, Jonathan		No	1...	3000000011532
12/09/2012	12/9/2012	Outpatient	OP Visit	AP CVTS	Dowd, James D.			5...	3000000007547
12/04/2012			Outside Documen...	RR CAR/PUL	Marks, Gary				3000000007363
12/04/2012			Outside Documen...	AP PUL					3000000007361
11/30/2012			Outside Documen...	SOPEDS	Hough, Brian				3000000007179
11/30/2012			Outside Documen...	AP GYN ONC	Hough, Brian				3000000007178
11/30/2012			Outside Documen...	SOPEDS	Hough, Brian				3000000007177
11/30/2012			Outside Documen...	SOPEDS					3000000007174
10/28/2012	11/13/2012	Emergency	ED	RR ED	Provider, Imag...		Yes	1...	3000000004489
09/30/2012	8/30/2012	Inpatient	Admission (Disc...	RR HEART				3...	3000000001213
08/21/2012	8/22/2012	Inpatient	Admission (Disc...	RR HEART	Lighthouse, Kenneth			3...	3000000001215
08/16/2012	8/16/2012	Outpatient	OP Visit	TR XR	Carneci, Charles			4...	3000000005328



Radiology Images



Photos



Pet Scans

# Incomplete patient record

## Patient Information

- ↳ Do I have it all?
- ↳ Where is it?
- ↳ Must **leave EMR** to access it



ECM



Cardiology PACS



Medical  
Devices  
Lexmark

Hyperspace

Test, Jason

MRN: 68422388 Adm Dt: 1/17/2013 DOB: 1/1/1920 Sex: M Account: 100000002528 Unit: No HIPAA HEART CENTER [101000011]

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Radiology PACS

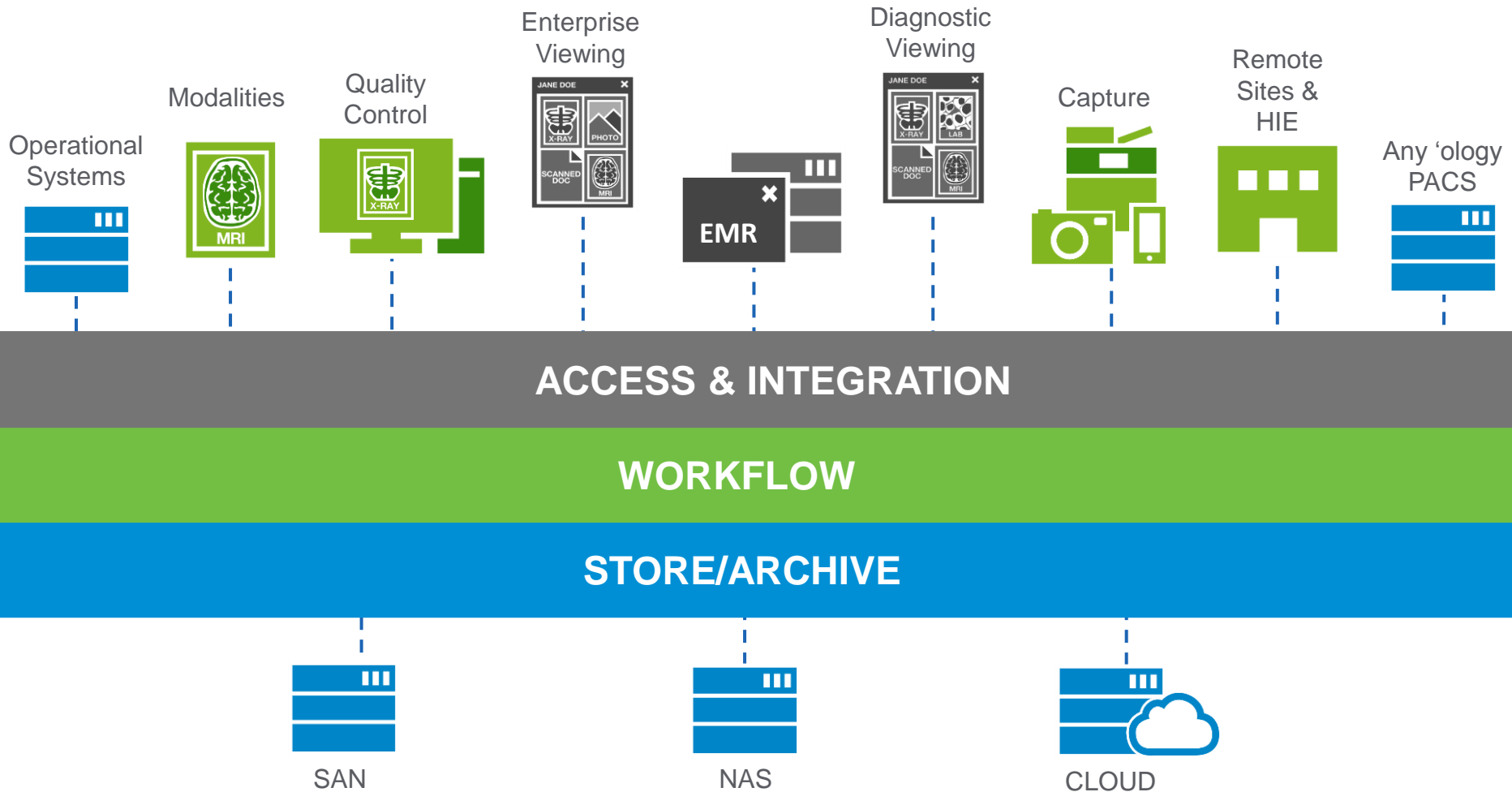


Photo Storage



Specialty PACS

# Neutral, scalable platform to serve the IT enterprise



# Accessing content - the meta-data challenge!!

“A set of data that describes and gives information about other data.”



Clinical User Context



Timeline

Patient context?

- Patient Name
- DOB
- Patient ID



Patient Context

Data context?

- Document Classification/Type
- Document Creation Date
- Originating Organisation/Department



# Capturing content – the metadata challenge!

## Paper

- Scanning, Classifying, Extraction of key dates, Patient Identifiers?

## Unstructured Electronic Content

- Office documents, PDF, email, SharePoint, Medical Photography, Endoscopy etc

## Structured Electronic Content

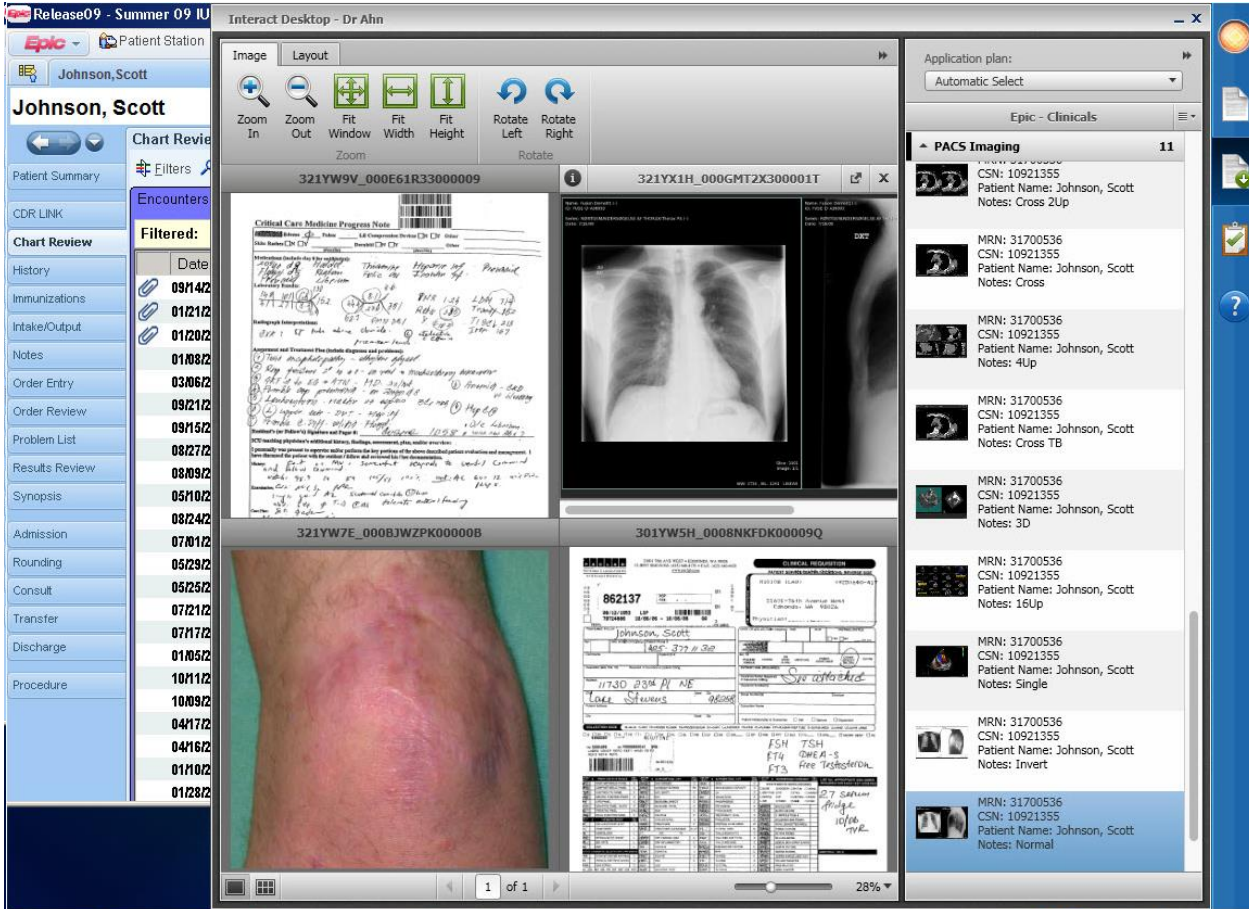
- Databases, e-forms, DICOM

## Standard Messaged Content

- HL7, DICOM, IHE XDS

# Completing the patient record

- ✔ Discrete Patient Data in EMR
- ✔ Unstructured Data
- ✔ Access from **EMR** – A physician 'cockpit'



The screenshot displays the Epic EMR interface for a patient named Johnson, Scott. The interface is divided into several sections:

- Left Sidebar:** Contains navigation tabs for ECM (Electronic Clinical Monitoring), Cardiology PACS, and Medical Devices. The ECM tab is currently selected.
- Central Workspace:** Displays a patient summary, a list of encounters, and a list of PACS imaging studies. The patient summary includes a chart review, a patient summary, and a list of encounters. The encounters list shows dates from 09/14/2 to 01/22/2. The PACS imaging studies list shows various studies with MRN and CSN numbers.
- Right Sidebar:** Contains a list of PACS imaging studies, including a chest X-ray and a CT scan.

The interface also includes a top navigation bar with tabs for Image, Layout, and Zoom. The bottom status bar shows the current application plan, application shortcuts, and the time (8:28 PM).

# Conclusions

- **Open standards** are used for content in and content out
- **Enables Interoperability** with
  - ▶ All content sources
  - ▶ Storage vendors= **True vendor neutrality**
- **Flexibility** : Copes with organisational and systems change
- **Control** : you gain control of your data, where it routes to, where it's stored, migrating it out
- **Access** : Makes patient data available for clinical use to deliver better patient outcomes

Capture

Store

Manage

Access