Addressing The Multi-Departmental Digital Imaging Conundrum With Hitachi Clinical Repository
AGENDA

1. Introduction


3. What is a Vendor Neutral Archive (VNA) and why is it an important market to target?

4. When is a VNA really a VNA: The five critical components of a VNA.

5. What is our Target Market?

6. How can Hitachi Clinical Repository meet the needs of a VNA.

7. Where to find HDS resources to support your VNA opportunities.

8. Q&A.
HITACHI LTD & HITACHI DATA SYSTEMS
HITACHI COMMITMENT TO HEALTHCARE

HITACHI DATA SYSTEMS
Essential services from the data center: Reliable, efficient storage designed for clinical and workflow data applications to provide information at the point of care.

HITACHI AIR CONDITIONING
Maintaining a clean, constant environment.

HITACHI OPTICAL TOPOGRAPHY
Viewing activity within the brain.

HITACHI PLANT TECHNOLOGIES
Testing and analyzing in the laboratory and surgery.

HITACHI CONSULTING
Advice on management, and change in the organization.

HITACHI RFID
Track, trace and monitor with integrated RFID technology.

HITACHI HIGH TECHNOLOGIES
Control and monitor access to buildings, equipment and confidential patient records: Hitachi VeinID biometrics.

HITACHI SOFTWARE ENGINEERING
Training and presenting to staff, digital signage: ultrathin displays, projectors and Hitachi Starboard.

HITACHI CONSTRUCTION MACHINERY
Building new facilities.

HITACHI MEDICAL SYSTEMS
- Advanced diagnostics: Hitachi MR, CT and ultrasound
- Specialist solutions for elastography and sonography.

HITACHI AMERICA
Advanced cancer treatment Hitachi proton beam therapy.
GLOBAL 500 PENETRATION

- Top 6 Healthcare Payers
- 9 of Top 10 Life Sciences
- >280 Healthcare Providers
- Top 7 Electronic and Scientific Equipment Manufacturers
- Top 9 Communications Carriers
- Top 4 Communications Equipment Manufacturers
- Top 8 Aerospace Manufacturers
- Top 5 Airlines
- Top 7 Depository Institutions
- 4 of Top 6 Media Companies

SOURCE: 2010 FORTUNE GLOBAL 500 AND HDS CUSTOMER DATA
THE HEALTHCARE MARKET
THE HEALTHCARE AND LIFE SCIENCES ECO SYSTEM

HLS LANDSCAPE & FORCES

Regulators
Taxes, regulation, reimbursement and incentives

Accreditation and Quality

Life Sciences
- Medical Equip/Devices
- Pharma / Biotech
- Analytical Instruments

Providers
- Independent Hospitals
- Health Systems
- Outpatient
- Long Term Care

Patients & Consumers

Payors
- Commercial
- Public

Regulatory Approval
IT Laws

Pressure on Reimbursement

Deliver Care

Finance Care

Service Rendered

Flow of Money

Strong Forces

Payors
- Commercial
- Public

Providers
- Independent Hospitals
- Health Systems
- Outpatient
- Long Term Care

Patients & Consumers

Life Sciences
- Medical Equip/Devices
- Pharma / Biotech
- Analytical Instruments

Regulators
Taxes, regulation, reimbursement and incentives
GLOBAL HEALTHCARE TRENDS

Population Growing
- By 2050 the world population will exceed 9+ Billion people
- Population is ever mobile
- Healthcare demands are different i.e. Health Tourism

Population is Aging
- There will be 1.2 bn people aged 60+ by 2025 and over 2 bn by 2050
- In the developed world, the very old (age 80+) is the fastest growing population group

Increased Costs
- Treatment of chronic conditions
- Administration of care delivery
- Fragmented process & infrastructure
- Lifestyle changes & population mobility
EXPLOSIVE DATA GROWTH

HEALTHCARE PROVIDERS DATA DRIVERS

- Digital Imaging Files: 26%
- Scanned documents: 25%
- Files in EHR: 20%
- eMail: 12%
- Business productivity files: 9%
- Media files (audio, video...): 8%
MULTI-DEPARTMENT ENVIRONMENTS

- Multiple departments involved in the treatment of a patient
- Hundreds of applications with multiple data formats
- Cross discipline treatment of the patient
- Access to the patient data from anywhere
MULTI-FACILITY ENVIRONMENTS

- Multiple hospitals connecting to central repositories
- 1000s of applications with multiple data formats
- Patient mobility between local hospital and centers of excellence
- Access to the patient data from anywhere
WHAT IS A VNA?
Medical imaging market has become saturated in many countries.

Moving in new directions.

As radiology, cardiology and pathology imaging take off, it is only logical that departmental PACS systems look to consolidate components.

They are looking for not only infrastructure consolidation, but also content consolidation to enable access to medical images across multiple facilities.

Vendor Neutral Archives are the evolution of this movement.
WHAT IS A VNA ANYWAYS?

**DEFINITION**

**vendor-neutral-archive** /venDoor-neutralt-arkeyev/

*Industry Catch Phrase:*

1. Standards-based archives that store and exchange non-proprietary (DICOM) files

2. Enable facilities to get closer to Meaningful Use in the USA by sharing data between applications

3. Simplify migration of data as all data is stored in a standards based format

**Synonyms:** PACS II, Diagnostic Imaging Repository (DIr), Medical Imaging Archive
WHAT IS A VNA ANYWAYS?

InMedica defines a VNA as a comprehensive solution with a minimum feature set that includes:

<table>
<thead>
<tr>
<th>Minimum Feature Set</th>
<th>Does HCR Include This?</th>
</tr>
</thead>
<tbody>
<tr>
<td>DICOM and HL7 Communication</td>
<td>YES</td>
</tr>
<tr>
<td>Support for Multiple PACS</td>
<td>YES</td>
</tr>
<tr>
<td>Non-DICOM Data Sharing</td>
<td>YES</td>
</tr>
<tr>
<td>Clinical Lifecycle Management Capability</td>
<td>YES</td>
</tr>
<tr>
<td>Security, and Long-Term Archive and Disaster Recovery</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional Feature Set</th>
<th>Does HCR Include This?</th>
</tr>
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<tbody>
<tr>
<td>XDS Registry and Repository</td>
<td>YES (Repository)</td>
</tr>
<tr>
<td>Web-based Access and Zero-Client Viewer</td>
<td>YES (via Partners)</td>
</tr>
</tbody>
</table>
WHAT IS A VNA ANYWAYS?

5 LEVELS OF A VNA

- VNA solutions are segmented into five levels based on architecture (**HCR can meet all 5 levels**):

  - **Level 1.0** - Single-department DICOM
  - **Level 2.0** - Multi-department DICOM
  - **Level 2.1** - Multi-Site DICOM
  - **Level 3.0** - Multi-department XDS
  - **Level 3.1** - Multi-site XDS
WHY IS IT AN IMPORTANT MARKET TO TARGET?
WHY IT’S AN IMPORTANT MARKET TO TARGET?

TOP REASONS FOR CONSIDERING A VNA PURCHASE

WHY IT’S AN IMPORTANT MARKET TO TARGET?

HOW PARTICIPANTS VIEW THEIR NEXT PACS PURCHASE

WHY IT IS A GOOD MARKET TO ENTER

STATE OF THE VNA MARKET

- Of the 1.4 billion new radiology studies captured by PACS in 2011 worldwide, 75 million were stored by VNA, representing a **5.4 percent VNA to PACS attach rate**

- In 2016, this is forecast to grow to 568.6 million, or a **31.0 percent attached rate worldwide**

Source: The World Market for Medical Enterprise Data Storage \* 2012, InMedica
http://imsresearch.com/report/Medical_Enterprise_Data_Storage_VNA_World_2012
WHY IT IS A GOOD MARKET TO ENTER

FORECASTED REVENUE BETWEEN NOW AND 2016

- VNA sales revenue for software and related services in 2011 was estimated to be $29.9M, with $160.9M in sales bookings.

- By 2016, VNA revenue for software and related services is projected to be $237.4M, with $1.5B in sales bookings, showing healthy market growth for VNA software and maintenance.

- Length of VNA contracts is expected to increase as cost reductions from ongoing use of a VNA are realized.

- VNAs will experience between now and 2016 a CAGR of 49.9%, compared with only 5.2% CAGR for PACS.

http://imsresearch.com/report/Medical_Enterprise_Data_Storage_VNA_World_2012
WHY IT IS A GOOD MARKET TO ENTER

FORECASTED REVENUE BETWEEN NOW AND 2016

- 11.3 Pb stored in 2012 projected to be 114.9 Pb stored by 2016
- 27.5% single departments; 38.2% multi-departments; 1.8% single XDS; 2.1% multi-XDS
- Hosted models: 12%; Non-hosted models: 64%; Hybrid: 24%

Source: The World Market for Medical Enterprise Data Storage, 2012, InMedica
http://imsresearch.com/report/Medical_Enterprise_Data_Storage_VNA_World_2012
WHAT IS OUR TARGET MARKET FOR HCR AS A VNA?
WHAT IS OUR TARGET MARKET?

1. **New/Replacement PACS:**
   - Many healthcare organizations have had PACSs in place for at least five years.
   - Clinical requirements and the PACS vendor landscape have changed.
   - Providers are now looking to replace existing systems and invest in new environments that meet evolving clinical requirements:
     - Allow sharing of images across the organization and regionally
     - And facilitate consolidation of images in a vendor neutral form.
2. Archiving Technologies For PACS:

- Growth in storage demand results from the increased numbers of imaging studies and the increased size of individual studies.

- The expansion of storage needs for PACS results in the need for archiving solutions, as the storage investment requirement becomes unsustainable.
3. **Vendor Neutral Archives:**

- VNA technologies are maturing, and providers are increasingly using electronic health records (EHRs).

- As a result, they are demanding greater availability from these systems, leading to increased investment in vendor neutral archives.

- VNAs allow the consolidation of images across multiple PACS while making them available within an EHR system.
HOW HCR MEETS THE NEEDS OF A VNA
A HOSPITAL ENVIRONMENT

- **APPLICATIONS**
- **STORAGE**
- **NOTE**
  - **NEW HDS APPROACH**
    - Clinical Benefits
  - **Virtualize Your Information With HCR**
  - **Virtualize Your Storage With VSP**
  - **Financial Benefits**

**A HOSPITAL ENVIRONMENT**

- **Ingest** the data as a secondary source—no database integrations required.
- **Index** the appropriate metadata, removing the different formats from the equation.
- **Access** the data from a single point, reducing the number of point-to-point integrations required, and accessing the entire patient record.
- **Leverage** the new functionality of VSP with older, legacy equipment.
- **Tier** the storage to optimize performance.
- **Reclaim** storage allocation through virtualization of the existing storage devices.
- **Defer** storage purchases through more efficient use of existing storage.

**NOTE**

**TRADITIONAL HDS APPROACH**

**APPLICATIONS**

**STORAGE**

**FINANCIAL BENEFITS**

**NEW HDS APPROACH**

Clinical Benefits
HCR IS A VNA AT THE CORE

- Full clinical repository for all departments supporting all image and data types
- Data transformation metadata indexing
- Highly scalable, vendor-neutral, long term repository
- EHR implementation and adoption enabler
HCR IS A VNA AT THE CORE

- Support for over 400 MIME types
- No database integration required
- Integrates into the existing workflow
- Native applications maintain their functionality
HCR IS A VNA AT THE CORE

- A single point of access to the longitudinal view
- XML based index is easily represented to any application
- REST Web Service API for integration
- Remove complexity/risk of application upgrades

Hitachi Clinical Repository

Electronic Health Record and Physician Portal
HEALTHCARE AND THE CLOUD

Infrastructure plumbing
- Converged solution stacks
- Rapid and on-demand provisioning and deployment

Data intelligence
- Data lifecycle management
- Index, search and discover across

Information analytics
- Data re-use for new business
- Data independence from applications

Intelligence

Content Cloud

Information Re-purposing

Information Cloud

Single Virtualization Platform
– Hitachi Storage and Servers –
HDS HLS CHANNEL PARTNER RECRUITMENT REQUIREMENTS
# HEALTH & LIFE SCIENCES CPR

## CHANNEL PARTNER CHARACTERISTICS

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<tr>
<th>ATTRIBUTE</th>
<th>CHARACTERISTIC</th>
<th>PRIORITY</th>
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<tr>
<td>Classification</td>
<td>ISV, SI, VAR</td>
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<td>H</td>
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<tr>
<td></td>
<td>$1-5M</td>
<td>M</td>
</tr>
<tr>
<td>Number of Employees</td>
<td>10+</td>
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<tr>
<td>Years in Business</td>
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<tr>
<td>Geographic Coverage</td>
<td>Not Relevant</td>
<td>-</td>
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<tr>
<td><strong>MARKET</strong></td>
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<tr>
<td>Target/Niche Markets</td>
<td>Healthcare providers; modality, IT, software or hardware business</td>
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<td><strong>TECHNOLOGY</strong></td>
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<tr>
<td>Competitive Technology Experience</td>
<td>EMC, HP, IBM, Dell, NetApp</td>
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<tr>
<td>Complementary Technology Experience</td>
<td>ERP, CRM, Database, Data Management, Data Migration, Document Management, Records Management, Content Management, Healthcare applications, Email, Workflow, Information Systems, Compliance, Business Intelligence, Portals, Information Governance</td>
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<td>Partnerships</td>
<td>Microsoft, SAP, Oracle, Symantec, VMware, Brocade, Cisco, CommVault, HP, IBM, EMC, Citrix, McKesson, Epic, OpenText, NetApp, Siemens, Agfa, Fuji, Phillips, Carestream, GE Healthcare</td>
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HCR RESOURCES
WHERE TO GO AND WHO TO TALK TO

- Documents and discussions located within HLS page on Sales Hub (The Loop)
- HLS documents/academy modules on Partner Xchange
- Global resources:
  - Dave Wilson (Business Development - Global)
  - Darryl Kraemer (Business Development – Global)
  - Renee Stacey (Solutions Marketing - Global)
- Regional resources:
  - Kevin Brode and team (Sales - Americas)
  - Johnny Ma and team (Sales - APAC)
  - Eva Reichl (Sales - EMEA)
QUESTIONS?