

NEXT GENERATION OF DOCUMENT ARCHIVING SOLUTIONS ARE WORKFLOW & CUSTOMER DRIVEN

Background

Throughout the 80's and 90's, the solutions available for long-term document archiving for MEDITECH hospitals were based on closed proprietary technology, and allowed data to pass from transaction-based systems into third party systems for later retrieval. For the most part, these systems required expensive hardware and a large staff for scanning documents, and the systems were more hardware driven than workflow driven.

In the last couple of years, a new breed of document imaging, scanning, and archiving solutions have emerged that are customer and workflow driven. These systems are designed from the ground up with workflow and process automation in mind to eliminate manual and repetitive tasks. Unlike the systems of the past, which started with a paper chart/folder that was scanned into the main system after a patient's discharge, today's new generation of document imaging systems work at the point-of-service. This point-of-service system, with distributed scanning, digitizes paper documents as these are collected or generated. The system allows the staff to replace mundane copying and filing tasks with merely a scanning task. The notion behind this workflow driven technology is to capture the paper image error-free, and make it available instantly to all appropriate users across the continuum of care. Missing documents are taboo in this system, which is also a great benefit to the patients, who are not repeatedly requested for previously submitted information.

Where to Begin

The key to successful selection and implementation of a new generation of document archiving solution is to develop a



good knowledge of workflow automation. Healthcare management must research on what the current and proven technologies are that enhance an organization's effectiveness, and select the technology that can deliver robust solutions. As experts note, when selecting information technology for document archiving, the key goal to achieve is workflow - it should not be about hardware. Developing the right approach to the selection process, and asking the right questions can strategically position the healthcare organization to reap massive savings across the continuum of care. Following are some key components to keep in mind when evaluating the right solution for document archiving.

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Database Architecture

In order to have a smart workflow automation solution, it is crucial to have robust foundation class technology upon which the indexing, scanning and imaging solutions can be built. Therefore, a solid relational database like MS SQL is recommended due to its open architecture, robustness and ease-of-use. It is important to ensure that the database architecture selected does not become obsolete when market changes take place. Many MIS directors were recently reminded of the importance of selecting an archiving solution with reliable database architecture. A vendor company had to drop its archiving solution to the dismay of client healthcare facilities. Perhaps, had this solution been based on an open relational database architecture, the situation would have been different.

Application Architecture

The arms, legs and body of a document archiving solution might be scanning, indexing, and retrieving, but the soul of a document archiving solution is workflow. Workflow allows an organization to implement its

policies and procedures using powerful, yet easy to use rules rather than programming codes. Workflow empowers organizations to model best practices, and drive each user to achieve a stated objective in the most customer-focused and cost effective manner. Workflow can also streamline processes, and by using automatic rule triggers for reminders, a task tracking software ensures that vital information is collected in a timely manner.

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Application Robustness

The burning issue here is to determine whether the organization has a strategic view of document archiving, or whether it relies on a fragmented approach. If the strategy is to provide an enterprise-wide document archiving solution, then organizations must make sure that the adopted IT solution is robust enough to meet the needs of the entire organization, and not just selected departments. As depicted in Table 1, administrative, financial, Medical Records, Human Resources, Materials Management and so forth are key functional areas for a robust document archiving solution.



Table 1: Departments that can benefit from an enterprise-wide document archiving solution

- ◆ Administrative and Financial Areas, for instance, Scheduling, Admissions and Business Office, Accounts Receivables, Accounts Payables
- ◆ Medical Records to include all remote facilities and even home care for a longitudinal record
- ◆ Human Resources
- ◆ Materials Management etc.

Another important aspect of a robust archiving solution is the ability to support both MEDITECH

and non-MEDITECH platforms. This is crucial to fulfill an organization's vision to create a truly open and global archiving solution with workflow in mind.

Application Usability

It is common knowledge that the old document imaging and archiving solutions were hardware-centric, with no capability for point-of-service scanning to enhance workflow. In this hardware-centric environment, most of the scanning was done after-the-fact using expensive batch scanners. Hence, the organization started with paper and continued to have a paper-driven process with high costs and

much inefficiency associated with manual copying, filing and storing tasks. In this scenario, when a new patient registered, the staff started clinical and financial paper charts, accumulated documents in the chart throughout the patient's stay, and scanned the chart after the patient's discharge. This approach is still utilized in many healthcare facilities, even though it is extremely labor intensive, costly, ineffective, and does not enhance the quality of care.

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Now imagine a scenario where inexpensive point-of-service scanners exist across the healthcare organization. Information collected on paper can be immediately scanned/digitized and made available for viewing across the healthcare enterprise. There are no restrictions or limitations as to the type of paper documents that can be scanned. As depicted in Table 2, driver's licenses, assignment of benefits, authorizations documents, insurance information, and consent forms etc. can all be scanned in and made available for viewing across the different departments of a healthcare facility. Paper documents from other departments of a healthcare facility can also be made available for clinicians and other users

using the same point-of-service approach. Imagine the myriad benefits of an enterprise-wide access to nursing notes, ER notes, lab results, advance directives, living will information, physician orders and so forth. In another scenario, during an inpatient stay, handwritten clinical orders can be immediately routed to alert a pharmacist, who can then view the order online and fill the order, thus reducing the drug delivery time in half.

Table 2: Examples of paper documents that can be scanned and made available for viewing across a healthcare enterprise using point-of-service scanning:

Department	Documents That Can Be Scanned
◆ Admission	◆ IDs, Driver's License ◆ Assignment of Benefits ◆ Consent Forms ◆ Payment Authorizations etc.
◆ Billing	◆ EOBs ◆ Insurance Correspondence ◆ Financial Statements etc.
◆ HR	◆ Annual Reviews ◆ Employee File Documentation
◆ Nursing	◆ Nursing Notes ◆ ER Notes
◆ Lab	◆ Lab Results
◆ PCI	◆ Advance Directives ◆ Living Will Information
◆ Pharmacy	◆ Physician Orders

Security

Security is a key issue that must be addressed by a robust document imaging/archiving solution. Since the system stores patient and other critical information, in order to comply with the upcoming HIPAA requirements for privacy, confidentiality and security, healthcare organizations must ensure that the solution offers enhanced security and audit trail features. Yesterday's audit trails will not cut it. Today's audit trail must reside in a

high-end SQL relational database to ensure flexibility of data management, and be smart enough to offer alerts and other exception reports so that administration can quickly identify any breach in security.

Redundancy/Disaster Recovery

Depending on what contingencies the organization has established for data viewing and redundancy during downtime and for disaster recovery, a workflow driven data and document archiving solution, if implemented correctly, can go a long way in meeting major portions of an organization's disaster recovery needs. Some healthcare organizations plan to put their document and data archiving servers in a separate building that is not connected to the building that houses their data center. In this way, if there is a disaster, the organization will have another system, which will have most of the patient-related data and documents available for viewing. Some vendors even offer an option where during downtime, users can enter admission data into a pseudo-admitting and MPI module. When the HIS system is up again, this information is automatically uploaded and synchronized with master patient index (MPI).

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Key To Success

At the end of the day, all solutions mean little if your vendor just drops the software and runs. In order to have a successful and robust solution, management must do a thorough analysis of the marketplace, and select a vendor who will be their partner, an experienced vendor who understands open technology and workflow-based document archiving. Management must also consider whether the partner/vendor provides on-site administrator/end-user training, and teaches users how to deploy the solution in the most efficient and effective manner. It is very important that the vendor understands healthcare workflow, and that the vendor's archiving solution is based on best practices.

Invariably, the key to success with a document archiving solution lies in the combination of open and robust technology and workflow-based implementation. In order to get the return on investment from information technology, healthcare organizations must select the solution that addresses these two vital issues.

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