Preparing for a digital future in healthcare

Digital health information systems help doctors and healthcare providers deliver better quality care. With electronic health records, healthcare providers have a comprehensive, digital view of a patient’s health history, which improves efficiency, collaboration and safety.
Expanding reach without compromising the core application

Data breaches have become a hot button issue across many industries and the healthcare sector is no different. Various security processes have been set up to deal with this issue in healthcare, including the HIPAA information security directives.

HIPAA's information security directives are not limited to clinical data. The directives are designed to protect patient accessibility to their own information that is held, used or managed by a healthcare organization. This may include the patient’s billing information or phone numbers and email addresses used to confirm appointments, which could be used to access the patient portal and expose patient information.

As a service provider, healthcare organizations look to you to provide the technical system to ensure their digital readiness across all of their information needs. It is difficult to build a single product that can control all document and content types, as well as provide the healthcare-specific tools that are the core value for your customers. Adding in an additional module for content while controlling all the possible ways that clinical data could be used, as well as the related documents, makes development and upgrades complicated.

OpenText™ ApplicationXtender™ is a content service product that can be embedded within your product as an add-on module to handle documents. It creates a searchable digital repository that can hold scanned documents and extract appropriate information.

What if you could separate the clinical data and the documents?
Why not take advantage of purpose-built applications that can manage the documents while extracting and moving the information into a core application?

The challenge:

Healthcare organizations of all sizes need to move to digital. Many hospitals are still transitioning from paper to digital. Paper-based processes drain dollars from the healthcare system and reduce profitability for small clinics and hospitals. They slow healthcare organizations from extracting value from clinical data.

Digital readiness varies widely among healthcare organizations. While some clinics and diagnostics companies started in the digital age and have never had paper files, older practices may have filing cabinets overflowing with paper records. In the middle, there are organizations that have moved new cases and much of their data to computerized systems but still rely on paper for most of their patient interactions.

But the process to digitally transform, is more complex than just digitizing paper. While organizations have may have taken the steps to digitize their data, their information is often still managed using traditional tools and methods. The difference between data and information is crucial and a nuance that many miss. Data is the facts and figures, the 1s and 0s that are contained in a database. The adoption of EMR technologies has largely tamed the data problem. Information, on the other hand, is more complex. Information, provides the unstructured context for the data, in this instance it can include PDFs, email, images or complex file types, such as an MRI or CT scan image and patient hand-off notes. By definition, unstructured information does not fit nicely in a structured database, such as an EMR, and requires an Enterprise Content Management (ECM) solution.
While the EMR/EHR database will always be the central repository of patient data, there is a clear need for a digital system to house old records and patient-related documents. For many healthcare vendors, the problem is that adding content services that can handle Microsoft® Word documents, text notes and PDFs does not simply involve expanding the documents the system supports, it means adding a whole new set of features and functionality. The question is, how is this best supported by healthcare vendors?

The healthcare community has been clear that it is not enough to simply have file storage of scanned documents, legacy images and other types of digitized physical content. Health information systems need to be able to both collect and manage information. Healthcare organizations need a live archive for these documents, which can be searched based on criteria that may not have been stored as metadata but is within the document itself. This type of content service; optical character recognition and full-text index of a scanned document is not a simple service to build.

**Taking advantage of best-of-breed technology**

ApplicationXtender can be used to extract information from faxes, emails and scanned documents. The information itself can then be made available within an organization’s application via the robust REST services and SDK. This means that core users can access all vital information regardless of where it comes from, while ensuring the documents are stored in a separate repository and handled appropriately. Figure 1 represents a repository broken into categories that guide a user to the right piece of information.

Figure 1: OpenText ApplicationXtender’s search-based view allows for easy search of patient files based on document contents, as well as any extracted data from scanned documents.

Figure 1 shows the user view. It is simple and focused on information the user needs to do their job. It mirrors the terms and types of easily scanned information to make it easier to find items and help new members of the care team understand the process. The solution is configured to show a unique view to each user based on their role in the workflow. It can be easily configured to recognize documents and apply the metadata, ICD-10, Medicare and other codes to enable billing, patient routing and compliance.
In Figure 2, the series of information capture points looks like the forms that doctors and nurses are used to scanning, making it easier for them to focus on the patient rather than a screen. Whether team members capture the information on a desktop or mobile device, they will have the same experience and data capture capabilities. The solution also auto-completes codes and provides tips on drug dosing and route of administration.

In today’s complex care management environment, organizations are looking for a technology partner that cannot only handle the clinical data, but can extend the usability of the EMR through a simple workflow that presents information to the right person at the right time.

**Bottom line**

Any organization that manages or has access to personally identifiable information, including insurance numbers or medical history, must be able to provide auditable processes to confirm that all access to patient information has conformed to standardized operating procedures that ensure its integrity and inter-operability. Healthcare vendors partner with OpenText because they recognize the value in embedding a single service platform that can manage all legacy sources and ensure that information can be combined, shared and delivered to any patient, partner or user.
The value of ApplicationXtender in meeting healthcare’s digital needs

Choosing content services to create an aligned system

In a perfect world, several different information management functions would be combined in a single, enterprise-wide health information management system with the flexibility to manage various use cases. But many customers still use multiple systems to handle a variety of information sources. For example, financial information may be managed by the ERP or CPOE application while imaging is handled by DICOM systems. To remain your customers’ preferred partner, the system must ease the movement of information across the various administrative and clinical systems.

Controlling administrative workflows and easy data sharing within your product offering

Many healthcare organizations will still have documents and processes that simply do not fit within today’s EMR system. In this case, using industry-standard software is simpler than attempting to modify or customize their core system to meet additional functional requirements. Developing and deploying an additional system is time-consuming, requiring dedicated resources that essentially duplicate feature functions. These are readily available in content service platforms such as ApplicationXtender.

Three areas where adding ApplicationXtender as a white-labeled content service provides value versus building extensions to a product offering:

1. **Cost of licensing.** ApplicationXtender has a flexible pricing model to ensure that OEM partners can build a full business model that incorporates the additional functionality without harming revenue potential.

2. **Maintaining permissions.** Most healthcare organizations have a complex cross-departmental connection of admission, transcription and billing administration that is difficult to model without an additional layer of document and process-based security.

3. **Reducing the cost of innovation.** OpenText maintains a robust API and SDK kit for ApplicationXtender, taking the cost out of maintaining back-end connectivity between the document management repository and your system. As an OpenText partner, you have access to the larger portfolio of integrated products for managing information.

Advantages of embedding ApplicationXtender into your offering

Records management framework

- Audit control for document access
- Audit of who was involved in processes
- Access control management
- Access and audit controls for changes made to processes, documents and system settings

Integrated process/workflow management module can:

- Provide reporting on instances of each process
- Tie information access to process steps
- Link document creation to workflow steps
- Integrate with the document library for document access management
- Integrate with data management (as opposed to content/document management) systems
- Automate the compilation of process information into a document ready for submission
What ApplicationXtender brings to your product

Quickly expand the ability to manage information sources and provide content services with:

1. A strong records management core that can be managed by a single compliance or records manager
2. A BPMN-based workflow/process management module
3. A well-described set of tools to integrate the content into a user’s preferred work application, API and/or SDK, and additional methods to use new XML/HTML-based screen scrape technology to connect systems
4. Granular access management that can be tied to existing tools, such as Microsoft® Active Directory®, with an internal system for when Active Directory settings and information management needs diverge
5. General system requirements and ease of use so that any department can find value; Metadata can be added, mixed, changed to ensure that any document can be appropriately accessed or deleted based on document relationships or user permissions

ApplicationXtender expands your solution in managing information across different departments, in key areas including:

1. Clinical to compliance—As the same person rarely manages the data, builds the compliance package and submits it. Multiple people in different departments require access to the same data to revise documents and approve the final copy.
2. Finance to clinical—Purchasing and getting paid for medical products requires appropriate approvals, documentation and codes that usually are not maintained by finance or compliance.
3. Human resources—Hiring and maintaining core clinical staff is difficult. It is often handled by managers on the clinical side but the documentation is managed and updated by HR.

An effective ECM solution captures unstructured information to improve collaboration, regulatory compliance and, most importantly, patient care. Finding the right solution will help healthcare organizations thrive in the digital future.
Web sources used for regulations and technical standards for compliance management


3. Electronic Code of Federal Regulations http://www.ecfr.gov/cgi-bin/text-index?SID=3ee286332416f26a91d9e6d786a604ab&mc=true&tpf=ecfrbrowse/Title21/21tab_02.tp


9. Food and Drug Administration, FDA Forms http://www.fda.gov/AboutFDA/ReportsManualsForms/Forms/default.htm


11. Food and Drug Administration, Submit an eCTD or Standardized Data Sample to the FDA http://www.fda.gov/Drugs/DevelopmentApprovalProcess/FormsSubmissionRequirements/ElectronicSubmissions/ucm174459.htm


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