

BUYER CASE STUDY

Delivering Patient-Centric Care: Swedish Medical Content-Enables Its Electronic Medical Records with Oracle

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IDC OPINION

Swedish Medical's journey into enterprise content management began with the implementation of Epic — together with Oracle's Universal Content Management (UCM) and Imaging and Process Management (IPM) products — to deliver a content-enabled electronic medical record (EMR) system. Swedish's story illustrates how the need to optimize key business processes can trigger enterprisewide adoption of content management:

- ☑ Making content management an integral part of its EMR implementation is paying off for Swedish as it rolls out its new system across its many locations: Complete patient information will be available to all who need access, from any location, and patients will feel better served by its patient-centric business processes.
- ☑ Swedish has also built an innovative, dynamic publishing application using Oracle Content Management that addresses the enterprisewide training needs of its 7,000 employees. The custom Pick-and-Pack application helped Swedish keep its EMR rollout on schedule.
- ☑ By taking an architectural approach, Swedish is well positioned to leverage its Oracle Content Management investment in several new areas for additional process improvement and cost savings. Content management applications are continuing to proliferate atop the Oracle Content Management foundation that Swedish has put in place to support its EMR system.

IN THIS BUYER CASE STUDY

This IDC Buyer Case Study discusses Swedish Medical's enterprisewide implementation of Oracle Content Management. Swedish Medical's journey into enterprise content management began with its implementation of Epic, together with Oracle's UCM and IPM products, to provide a content-enabled electronic medical records system. Content management applications are proliferating atop the Oracle Content Management foundation that was put in place to support Swedish Medical's EMR system.

SITUATION OVERVIEW

Organization Overview

Founded in 1910, Swedish Medical is the largest nonprofit healthcare provider in the Greater Seattle area. Swedish operates three hospitals in Seattle, an additional free-standing emergency room and specialty center in Issaquah, and about 70 ambulatory clinics. Swedish takes pride in its excellence in medicine and its compassionate care and is continuing to expand its services: It's planning to build out its Issaquah center into a fourth hospital over the next few years.

Swedish Medical has 7,000 employees, including 2,300 physicians on staff, and has 1,245 licensed beds. Some facts and figures that help to convey the scope of Swedish's operations include:

- ☒ Swedish handles 97,000 emergency room visits, 43,000 in-patient admissions, and 74,000 medical/oncology/treatment center visits per year.
- ☒ Swedish performs 36,000 surgeries each year, including 600 open-heart surgeries, and it provides home care services to 4,700 patients.
- ☒ More than 7,500 babies are born at Swedish each year.

Swedish Medical is also very active in clinical research: It takes part in more than 600 studies each year.

Challenges and Solution

Because Swedish is decentralized and geographically dispersed over four major hospital locations and multiple clinic locations, a key challenge for Swedish is managing patient records. Different facilities offer different specialties, and patients may receive care at more than one location. To ensure that complete patient information is available wherever and whenever a patient needs care, Swedish embarked on a strategic, multiyear initiative to put in place an electronic medical records system.

EMR implementations require significant changes to many existing business processes, and they also typically require significant staff training. Swedish had more than 700 applications to support, and a complementary benefit of the EMR system is the consolidation of many of those applications. A key concern during implementation was minimizing the potentially disruptive impact of these changes on ongoing medical record and business activities.

Strategy and Product Selection

Swedish embarked on its EMR project using standard project management methodologies, starting with defining scope and establishing needs and priorities. Swedish's new EMR system needed to support current and future services and locations because Swedish continues to grow both organically and by acquisition. The EMR system also needed to support both its near-term and long-term goals.

According to Nancy Richards, content and document system architect, Swedish envisions providing Web-based portals in the future to let clinicians access patient information and confer with providers in a compliant environment; portals would also give patients online access to their medical information such as test results and enable them to communicate with care providers, set their own appointments, and so on, in a secure and personal manner.

Technology choices also needed to fit well within Swedish's overall IT architecture. Swedish has established clear IT directives that focus on the use of standard tools and technologies that are robust enough to support multiple business objectives — rather than one-off, unique implementations of diverse tools — whenever possible.

Swedish had selected Epic as its EMR solution, but it also needed a content management system to capture and manage all of the additional document-based information that is external to the EMR database — information that is provided in a variety of electronic and paper-based formats. Swedish needed a broad set of content management services, including strong support for document management, capture and image management, and workflow. The content management system also needed to be scalable, reliable, and highly available — the EMR system is a mission-critical application — and it needed to integrate tightly with Epic.

After evaluating various content management alternatives, Swedish chose Oracle's content management solution (formerly Stellent), including Oracle Imaging and Process Management for the capture and management of documents that are faxed or scanned and Universal Content Management including Web content management capabilities.

Implementation

Swedish worked with ImageSource to implement its new content-enabled EMR. The project team identified and documented the specific business processes that would need to be addressed. These processes are different for in-patient and ambulatory care. In the emergency room, for example, the process starts with providing care — not insurance verification. In ambulatory care, it's the other way around: Insurance coverage and pre-op qualification may be done up to a week ahead of an appointment. Swedish's project team sat down with the business users to go over these processes in detail and determine how best to meet their needs.

Swedish knew that it needed to address cultural barriers to adoption of an electronic system and minimize any disruptive impact on the staff. For example, its clinical staff typically didn't use email, or a keyboard, for most of their business processes; they relied instead manual processes using printouts, handwritten notes, and paper charts. Swedish took pains to ensure that clinicians would perceive the new capabilities as positive and helpful and made sure that its new information capture processes wouldn't adversely impact the staff's willingness to adopt the EMR.

These concerns also extended to patient care. Swedish walked through a typical day with clinical staff to identify important details in patient interaction and design a positive experience. For example, it's a lot friendlier for patients if staff members asking for their information can scan in their insurance card — while facing them and interacting with them — instead of turning their back to walk down the hall to a

photocopier. Information can be validated with one or two clicks, and patients perceive they're getting a higher level of care.

Results

Swedish Medical's careful planning has paid off with relatively smooth adoption of the new EMR system, which began to roll out in February 2007 at the first hospital. Swedish is bringing a clinic online every three weeks, and its other hospitals are slated to go live in April/May of 2008. Swedish also rolls out different functional modules in succession, for example it rollw out Registration and Admit/Discharge/Transfer (ADT) functionality first, and then Computerized Physician Order Entry (CPOE).

Because Swedish's implementation of Oracle Content Management is part of its broader project to implement an electronic medical records system, there isn't a separate ROI metric for the content management piece. The content management piece was critical to the overall success of Swedish Medical's new EMR system. Anecdotally, one of its clinics had a rudimentary patient records system in place that managed documents. That old system required about 12 steps to bring in information received via fax, attribute it to a specific patient, and incorporate it into the patient's record. The new system, which integrates Epic with Oracle Imaging and Process Management, accomplishes that in just four steps.

Swedish's Oracle Content Management system runs 24 x 7, on 16 servers, in a completely redundant configuration that shares a single sign-on with Epic. With the Epic/Oracle implementation, patient charts are readily available and accessible from any location. There's no need to wait for charts to move around from location to location, and there's no need for "shadow charts" (local copies that inevitably are incomplete).

Richards points out that Swedish Medical has realized some unexpected benefits from its content-enabled EMR. Swedish has many staff members who work broken shifts, sometimes working at different locations. Before, each location had its own peculiar processes, and staff needed to learn those processes to communicate and perform their work effectively. Once implementation of the Epic/Oracle system is complete, Swedish will have standardized processes across all of its locations, and that makes it easy for staff to move around and provide care in any setting.

Pick-and-Pack Content Application Addresses Enterprise Training Need

As part of the rollout of its new EMR system, Swedish had to undertake a major staff training project: Everyone, from doctors to nurses to transport staff, needed to be trained on Epic. Knowing how to use the new system is core to being able to work at Swedish, and Swedish needed to validate that staff members were trained appropriately. Further, training needed to be role based: Swedish had to match training content to staff members according to the processes they were involved with and the roles they played in those processes.

Swedish's project team worked with its training department to understand the size of the training effort and identified 72,000 learning opportunities — such as how to log

in, change a password, check an inbox, or write an order and make sure it was received. The estimate for classroom training: 90,000 hours! Swedish knew from its Oracle PeopleSoft system that it had 120 different job roles. But it had only 10 education analysts and 11 training rooms.

Swedish built an innovative content publishing application atop its Oracle Content Management implementation to address this overwhelming training need. Swedish worked with Wasser Studios, experts in technical writing, to break down concepts and chunk the information into components and fragments, using FrameMaker. Then, Swedish worked with ImageSource to design and build a completely dynamic publishing system, dubbed Pick-and-Pack, which lets content owners check in components and fragments and then builds training manuals on the fly that are role specific. The Pick-and-Pack application automatically pulls in the right learning and self-help materials, practice guides, and testing modules. These custom manuals give staff members the specific information they need to do their job, pulling from the most up-to-date content.

Its ImageSource-built custom Pick-and-Pack application helped Swedish to keep the rollout of training activities for the new Epic/Oracle system on schedule. Without using the Pick-and-Pack application, it took more than 24 man-hours to produce 35 manuals; with Pick-and-Pack, that same process took just half a man-day. And instead of needing documentation specialists to create manuals, an administrative assistant can generate them. The Pick-and-Pack application simplifies maintenance of the training content as well: Without Pick-and-Pack, Swedish would have needed 1/2 to 1 FTE just for ongoing tracking. Pick-and-Pack lets Swedish leverage on-demand printing, and Swedish can publish in any format — Web, CD, print, and so on. Swedish can also generate reports. As of December 2007, Swedish has fully trained more than 25% of its staff (about 40% of the staff have already had some training).

Finally, Swedish is using Oracle Content Management to manage hospital standards — for example, procedures for intubating a child, performing mitral valve measurements, scrubbing in a particular surgical unit, or bottle-feeding a newborn. Before Oracle, each clinical area stored its standards documents on its own drive, then used FrontPage to publish to the intranet. Swedish has imported all of these standards into Oracle UCM, so users no longer have to publish to multiple locations or manage the version control of the documentation, and everyone has access to content that is up-to-date. Oracle UCM also serves home health and training content to Swedish's extranet, all from one centralized, managed environment.

FUTURE OUTLOOK

Additional Oracle Content Applications

Richards notes that the priorities for Oracle Content Management at Swedish are in areas where either risks are great or there is a strong need for business optimization. These are typically areas that are touched by many people — that is, the need to manage and track information and interaction is highest.

Swedish has several additional applications in mind that will further leverage its Oracle Content Management investment. One area of opportunity is in HR. Swedish has 2,000 different job descriptions — due to compliance mandates (with both internal and external requirements, for example, union agreements). Managing job descriptions, including American Disabilities Act (ADA) compliance information, and employee policies is time consuming. Integrating PeopleSoft with its Oracle Content Management system will let Swedish update a small component and have that change automatically propagate throughout the system. And Swedish will be able to quickly publish up-to-date job descriptions for recruitment purposes, annual reviews, or performance plans.

Another area of opportunity is in contract management. Swedish has already begun to capture and manage contracts in Oracle. In the future, Swedish will be able to integrate this capability with its PeopleSoft application, so users will be able to retrieve contracts from the PeopleSoft user interface. Key to managing contracts is security, as there are many different domains — from physician contracts to vendor and facility contracts — and the information must be secure by role. Swedish will leverage Oracle Content Management's security model to grant access by group.

Swedish expects to use its Oracle Content Management system for facilities management — to help it manage the construction of its new hospital in Issaquah and make modifications to existing facilities. Drawings, certificates of occupancy, and as-built information can all be stored in Oracle and accessed as needed for work orders, audits, and planning.

Swedish can also take advantage of integration between Oracle Financials and Oracle IPM to accelerate accounts payable processes.

Finally, Swedish can leverage Oracle Content Management to provide new and innovative online information services to its patients over the Web.

ESSENTIAL GUIDANCE

The Swedish Medical case study provides a good illustration of how enterprise content management often starts with a single, important triggering event — in this case, the implementation of an electronic medical records system. Swedish had one small Oracle (Stellent) system in use prior to undertaking the Epic implementation, but it had very limited use. With its integrated Epic/Oracle EMR system, Swedish has embraced content management on an enterprise scale. Additional content management applications will continue to proliferate and will leverage the foundation that Swedish Medical has put in place to support its EMR system.

Absent the galvanizing force (and ROI case) of a major new enterprise application, enterprisewide adoption of a content management system is more challenging to effect. However, organizations that hope to pervasively adopt a unified content management approach across the company can build the business case by identifying a set of (usually compliance-oriented) use cases that will reduce risk and/or improve organizational efficiency. This is one of the reasons enterprise content management sales are often closely tied to compliance objectives.

We believe vendors like Oracle will begin to content-enable their applications, making it easier for customers to leverage the benefits of a content management system from within core business applications and reducing the amount of integration work and user training required to realize those benefits. Oracle has already begun to showcase integration between its financial applications and its content management solutions, especially its IPM product. We expect to see content services become a pervasive part of Oracle Fusion Applications.

As more consumers join the online world, we're seeing a profound cultural shift — a greater openness to communicating electronically, via email and other forms of electronic messaging, and increased expectations around access to information, including information about us that's managed by others. We believe Swedish Medical's vision of giving patients access to their information over the Web — and enabling interactions online — will resonate with those the provider serves. Already, we are seeing major IT providers and online information companies pursuing initiatives to help consumers manage their health information. We think healthcare providers that provide secure patient access to health information will be best positioned to participate in these initiatives.

LEARN MORE

Related Research

- ☒ *Worldwide Content Management Software 2006 Vendor Shares: Shakeout at the Top Sets the Stage for Market Evolution* (IDC #207518, July 2007)
- ☒ *Worldwide and Americas Content Management and Authoring and Publishing Software 2007–2011 Forecast by Vertical Market and Company Size Segment* (IDC #207058, May 2007)
- ☒ *Worldwide Content Management Software 2007–2011 Forecast: Continued Strong Growth as Market Stratifies* (IDC #206149, March 2007)
- ☒ *Worldwide Applications 2007 Top 10 Predictions: The Road to Applications 2.0* (IDC #205238, January 2007)
- ☒ *The Stars Align: Oracle Acquires Stellent* (IDC #204713, December 2006)
- ☒ *Oracle Ratchets Up Its Content Management Initiative with New Strategy* (IDC #202451, July 2006)

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