

Best Practices in The Healthcare Industry

The Critical Care of Information

- Andy Moore..... 2 **Overture Article: "Information Rich, Knowledge Poor"**
Trailing all the way back to the Wise Old Doctor Who Made House Calls (anyone remember that?), we have come to think of healthcare as the most knowledge-specific of professions. Practitioners of the medical arts are trained for years, decades actually, to recall and apply information that no layperson need ever understand. Doctors are information junkies, and the rest of us take it on faith more or less that our health is in good, well-informed and reliable hands.
"And that's fine enough for actual hands-on, make-you-feel-better doctoring. But increasingly, healthcare, the noble art, is groaning under the weight of healthcare, the modern business. Paperwork has erased the Country Doctor and replaced him with an information network . . .
- David Winkler, Cytura..... 3 **Enterprise Content Management Improves Lives**
When your industry is healthcare, Enterprise Content Management (ECM) becomes more than a way to improve processes and cut costs—it is an invaluable tool for directly improving the quality of care and safe-guarding human life. To win the war of online information, you need a strategic plan for managing online content and the processes that ingest all types of content from disparate sources (employees, legacy systems, third-party suppliers, etc.) throughout the healthcare ecosystem. How you deliver content to your customers, your employees and your partners can directly impact the success of those constituents and the ultimate success of your business. When thoughtfully and strategically employed, ECM is poised to transform the healthcare industry and positively impact the lives of the individuals providing care and, therefore, improving the quality of care all patients receive . . .
- Gary Travnicsek, Selectica..... 4 **The Advantages of Automation**
In the insurance industry, new information systems designed to automate processes such as underwriting, rating and enrollment can significantly reduce costs and streamline operations. Faster, more accurate quotes, better customer service and a more effective salesforce all are possible with today's selling and information management applications . . .
- 5 **Blues Plans Reap Benefits of Online Automation**
With the help of Selectica, Inc., two of the nation's leading Blue Cross and Blue Shield Plans have harnessed the power of the Internet to deliver dramatically improved service to millions of customers. Although the two plans are pursuing differing online strategies, both are confident the eBusiness solutions they've developed will generate benefits far into the future . . .
- Nigel Stokes, DataMirror..... 6 **Resiliency Solutions for HIPAA**
Healthcare firms face increasing regulatory pressures on all aspects of their day-to-day business operations. Regulations surrounding the management and availability of critical healthcare data including clinical trial data and patient and insurance claims information have led to sweeping changes both in the United States and abroad. Virtually all U.S. healthcare firms will need to implement data management strategies that ensure the integrity, resiliency and availability of critical information in order to meet regulatory mandates in the coming months and years. One of the most far-reaching of these regulations is the Health Insurance Portability and Accountability Act (HIPAA) . . .

Sponsored by



"Information Rich, Knowledge Poor"

By Andy Moore, Editorial Director, *KMWorld* Specialty Publishing Group

T railing all the way back to the Wise Old Doctor Who Made House Calls (anyone remember that?), we have come to think of healthcare as the most knowledge-specific of professions. Practitioners of the medical arts are trained for years, decades actually, to recall and apply information that no layperson need ever understand. Doctors are information junkies, and the rest of us take it on faith more or less that our health is in good, well-informed and reliable hands.

But increasingly, healthcare, the noble art, is groaning under the weight of healthcare, the modern business. Paperwork has erased the Country Doctor and replaced him with an information network.

In an article called "Managing Your Organization's Key Assets: Knowledge," J. Fitchett wrote that the healthcare industry is essentially knowledge based. "The quality and efficiency of work performed in healthcare institutes depends on their ability to both manage internally created knowledge about patients, i.e. healing practices, and available experiences as well as to enrich and integrate it with relevant external knowledge created worldwide by related institutes."

Get that? The quality of the healthcare you get depends directly upon your caregiver's ability to "manage" internal knowledge about the patient and "enrich and integrate" it with external knowledge from some network of expertise. Your health depends upon knowledge management. When you put it that way, I bet you take it a little more seriously.

My key resource in preparing for this White Paper was another white paper, one written by Xiaoyan Hao, University of Technology, Sydney Faculty of Business, Sydney, Australia. I owe much to this document.

In it, Xiaoyan notes: "Healthcare enterprises can be regarded as data-rich since they generate massive amounts of electronic medical records, clinical trial data, hospitals records, administrative reports, benchmarking findings and so on.... It is not only the basic and specialized medical knowledge a general

practitioner is expected to know, but also 'the content of various governmental guidelines, circulars, warnings of adverse effect of drugs the latest scientific findings in medicine and so on' (Smith 1996). It is reasonable to say that a doctor suffers from information overload.

"Furthermore, most of the information doctors use when seeing patients is kept unrecorded in their heads and unfortunately some of this information is out of date or wrong. 'New information may not have penetrated and the information may not be there to deal with patients with uncommon problems.'

"These problems have become more serious as the rate of change in medical knowledge has accelerated. There are new scientific findings everyday, and at the moment the amount of medical knowledge is estimated to increase fourfold during a professional lifetime (Healthfield and Louw 1999), which inevitably means that 'doctors cannot practice high-quality medicine without constantly updating their knowledge and finding information to help them with particular patients' (Smith 1996)."

The inescapable conclusion is that the healthcare industry—really a conglomerate of enterprises that produces and manipulates a vast spectrum of knowledge from mainly discrete and disconnected sources—is awash in information, and challenged badly to leverage it into useful, actionable knowledge. It is information rich but knowledge poor.

Worse Than Knowledge: Bureaucracy

And it's not simply medical knowledge and procedural expertise that is challenging healthcare. It's the damn paperwork.

In 1996, the U.S. Department of Health and Human Services enacted the "Health Insurance Portability & Accountability Act," known to us all as HIPAA.

HIPAA includes provisions for healthcare organizations to implement electronic transactions as well as new safeguards to protect the security and confidentiality of sensitive patient information.



Andy Moore

Andy Moore has often been a well-known presence in the emergence of new technologies, from independent telecommunications through networking and information management. Most recently, Moore has been pleased to witness first-hand the decade's

most significant business and organizational revolution: the drive to leverage organizational knowledge assets (documents, records, information and object repositories) and the expertise and skill of the organizations' knowledge workers in order to create true learning organizations. He can be reached at andym@mint.net and welcomes feedback and conversation.

On the upside, HIPAA encourages healthcare companies to eliminate paper records altogether, increasing the potential for cost savings and enhanced operational efficiency. On the large downside, however, the resource and efforts to comply with HIPAA will make Y2K preparation seem like a walk in the park. In fact, the cost to implement HIPAA is projected to end up being between two and four times what it cost the same participating organizations to get ready for Year 2000 only a few years ago.

But the prime intent of HIPAA is to protect the privacy of the patient; cost savings are simply a lucky byproduct.

Lurking just inside the dark corners of HIPAA, however, is the scariest threat of all: Business executives are now personally liable for any misuse of "personally identifiable, non-public information." Given that a healthcare organization's "non-public information assets" range from X-rays and MRI charts to lab results, prescriptions and even videos of consultations, the stewardship of that information is vitally important.

Luckily, there is help. In this White Paper you'll learn of solutions and best practices that help the healthcare information professional accept that stewardship. Solving the HIPAA challenge is a biggie, no doubt, but that is merely one of uncountable opportunities in healthcare to either accomplish great goals or flub up royally. It is our hope that this particular "information asset" can be turned into constructive knowledge for you and your organizations.

And if it doesn't, take two aspirin and e-mail me in the morning. ■

Xiaoyan Hao, University of Technology, Sydney Faculty of Business, November 16, 2001, "Knowledge Management in the Healthcare Industry"

H. Healthfield and G. Louw 1999, "New Challenges for Clinical Informatics: Knowledge Management Tools," *Health Informatics Journal*
R. Smith 1996, "What Clinical Information Do Doctors Need?" *British Medical Journal*, Oct. No. 313

J. Fitchett 1998, "Managing Your Organization's Key Assets: Knowledge," <http://www.healthforum.com/hfpubs/asp>

Enterprise Content Management Improves Lives

By David Winkler, Vice President, Corporate Development, Cytura

When your industry is healthcare, Enterprise Content Management (ECM) becomes more than a way to improve processes and cut costs—it is an invaluable tool for directly improving the quality of care and safeguarding human life. ECM becomes mission-critical in these key areas:

- ◆ Providing ANY-3 (Anyplace, Anytime and Any Device) access to information.
- ◆ Simplifying tedious yet critical methods of organization-wide communication.
- ◆ Empowering individuals serving or served by the healthcare organization to help themselves without requiring the assistance and time of healthcare resources.

To win the war of online information, you need a strategic plan for managing online content and the processes that ingest all types of content from disparate sources

(employees, legacy systems, third-party suppliers, etc.) throughout the healthcare ecosystem. How you deliver content to your customers, your employees, and your partners can directly impact the success of those constituents and the ultimate success of your business. When thoughtfully and strategically employed, ECM is poised to transform the healthcare industry and positively impact the lives of the individuals providing care and, therefore, improve the quality of care all patients receive.

Sentara Healthcare

Sentara Healthcare is a leading provider of healthcare services throughout Virginia and North Carolina and was recently ranked as the #1 Integrated Health Network in the United States. Sentara has six hospitals, 70 total

healthcare facilities, affiliations with 2,000 physicians and more than 14,000 employees.

In order to improve patient care, Sentara required a way for patients, physicians, employees and members to easily access targeted up-to-date information about services provided, policies, insurance plans and other relevant information. Sentara is implementing the Cytura solutions to empower their non-technical users to manage and target this information to their providers, employees, members and patients. Through Cytura's personalization capabilities, when a user logs on as a physician, employee, insurance member or patient, the portal will tailor the information presented based on that profile. Sentara is demonstrating return on investment through improved internal work processes, strengthened policy and procedure compliance, enhanced physician relationships and improved patient care.

Priority Healthcare

Priority Healthcare Corporation (www.priorityhealthcare.com) is a provider of patient-specific, specialty biopharmaceuticals and disease treatment programs to individuals with chronic diseases, and a national distributor of specialty pharmaceuticals and related medical supplies to the alternate healthcare market. Cytura was selected by Priority Healthcare (PHC) to launch several Web site neighborhoods dedicated to providing information on specific diseases and their respective treatments. Using traditional methods, PHC would have to code each site line by line. With Cytura, PHC rapidly built numerous communities—created and managed by a small, non-technical staff. Additionally, using Cytura's inherent enterprise taxonomy and extensible metadata classification capabilities, PHC knowledge workers customized sections of each site based on the site users' disease states and treatment information. Because site updates are made without a dedicated IT staff, the Cytura solution has drastically reduced long-term maintenance costs, while allowing for more personalized management of content by subject matter experts. "A project of this size typically requires extensive resources, time and money. With Cytura we can deploy and maintain sites using a significantly smaller staff, which not only minimizes costs but also allows us to closely manage the information presented on the Web site," says Steve Cosler, COO of Priority Healthcare. "Now that we can tailor content so that patients and physicians immediately see information that specifically addresses their particular needs, our Neighborhoods have become powerful tools to help improve the quality of care we provide our customers." ■

For more information, call 877-9CYTURA or visit www.cytura.com.

Cytura Contenuity

Based on the principle of demonstrating rapid ROI by empowering clients to quickly become self-sufficient, the Cytura Contenuity platform solution is easy-to-use, yet flexible enough for even the most ambitious healthcare implementation.

Hospitals, integrated health networks, pharmaceutical companies, physician organizations, and healthcare technology firms have all embraced the award-winning Cytura framework. The Cytura XML-based enterprise-class content management system is being used by leading healthcare organizations to build communication, community, and commerce for Web sites across the healthcare industry. Healthcare enterprises can benefit proportionally from the cost savings and accelerated deployment time that Cytura offers.

"Cytura was recognized as a finalist in the emerging technology category because it enables healthcare organizations to reduce costs and improve the quality of care," says David Lubinski, general manager for Healthcare and Public Sector, at Microsoft. "The unique XML-based architecture underpinning the Cytura solution framework, serves as a fundamental element of Microsoft's .NET vision of software that empowers users any time, any place and on any device. Its reliability, extensibility and scalability of the solution position Cytura as a valuable partner in the healthcare sector."

The Cytura XML-based architecture ensures long-term technical viability, lower cost of ownership, and infinite scalability. The Cytura framework finally provides a way to turn the strategic promise of the Internet into practical, usable, cost-effective solutions for healthcare. These case studies of real-world best practices demonstrate how Enterprise Content Management is changing the healthcare landscape today.

Cytura is a leader in assisting enterprise customers, independent software vendors and solution integrators, across all industries, solve the complex issues they have with managing distributed and disparate information. Cytura can help your organization deliver unique applications through the Web quickly and more profitably with its comprehensive solution that integrates content management, document management and digital asset management into a single enterprise platform.

The Advantages of Automation

By Gary Travnicek, Selectica eInsurance

In the insurance industry, new information systems designed to automate processes such as underwriting, rating and enrollment can significantly reduce costs and streamline operations. Faster, more accurate quotes, better customer service and a more effective sales force all are possible with today's selling and information management applications.

While these benefits are important, there is another, often-overlooked advantage that flows from process automation: improved decision-making. By collecting and aggregating previously inaccessible data on premiums and payouts, advanced automation systems can deliver a much more accurate view of a carrier's book of business. This, in turn, can help managers make better, more informed decisions about rating and underwriting strategies going forward.

Indeed, analyzing an aggregate book of business essentially involves the same processes that are followed when determining whether to renew an individual or group policy. Similar cost-benefit variables are considered:

- ◆ The projection of expected premiums.
- ◆ The projection of anticipated payouts on claims.

Hence, rolling up actual renewal information from individual policies into an aggregate financial view allows carriers to make more timely and far more accurate financial projections than previously had been possible.

Leaving Information on the Table

Even so, companies that have capitalized on automation systems and this kind of decision-support capability are few and far between. For many carriers, the risks of implementing new information systems appear to outweigh the benefits.

Most insurers, in fact, continue to base their financial projections on sample groups of active policies that are up for renewal. That is, carriers are betting that the

behavior of the sample group matches the behavior of a much larger number of policyholders. As many firms can attest, this can be a dangerous assumption.

That's why developing a more accurate picture of the entire book of business is vital in measuring risk and making decisions about premium levels. Of course, information automation provides other, important benefits for insurance carriers. Chief among them:

- ◆ Lowered administrative costs associated with renewals.
- ◆ Faster renewal decisions that can be communicated to field agents almost instantaneously.

These operational benefits generate a rapid return on investment and in so doing mitigate the risks associated with a new software quoting system. Advanced software applications also ensure the data entered by field brokers at the time of renewal is complete, accurate, timely and relevant.

Automation Done Right

Successfully automating the renewal process to help generate precise financial projections requires an online sales and enrollment system that provides agents and brokers with access to rating and quoting information quickly and accurately.

The system should be able to serve field representatives through any Internet-capable device. It also should be linked to back-end policy setup and renewal systems to ensure rapid enrollment and access to accurate price and product information.

Automation also should include a sophisticated analysis package that can capture and assess renewal information in near real time, as well as provide updated aggregate financial information on all renewals received to date.

Automation done right also requires systems that:

- ◆ Can be easily updated to reflect new calculation procedures or adjustments made in the underwriting and pricing processes.

- ◆ Allow financial managers to test the impact of different underwriting scenarios to form the most effective overall rating philosophy for renewals.

- ◆ Provide renewal knowledge to brokers and agents quickly and efficiently, and identify or suggest alternative or additional coverage options for renewing customers.

Other specific features that carriers should seek when considering automation systems include:

- ◆ The capability of eliminating redundant data and repeat entries.
- ◆ An advanced data architecture that allows for storage of vital information needed for decision support and financial planning.
- ◆ Automated audits to ensure the accuracy of data stored in the system.
- ◆ Simplified maintenance that allows insurers to quickly enter actuarial adjustments and other changes without damaging existing data.
- ◆ Integration with existing systems and data repositories.
- ◆ Secure, online access for agents, brokers, customers and executives.

Benefits Outweigh the Costs

Without question, automating the insurance policy renewal process with an advanced Internet-based selling application is neither an

"ECM is poised to transform the healthcare industry and positively impact the lives of the individuals providing care."

inexpensive nor simple proposition for any insurance provider. Yet the benefits of lowered administrative costs, faster, more accurate quotes, better customer service and the ability to develop more accurate financial projections make automation extremely attractive.

The bottom line: A well-implemented automation system can deliver a significant return on investment in a relatively short period of time, particularly when compared with the costs of continuing to do manual renewals and sample-based financial projections. ■

For more information please visit us at www.selectica.com.

Blues Plans Reap Benefits of Online Automation

With the help of Selectica, Inc., two of the nation's leading Blue Cross and Blue Shield Plans have harnessed the power of the Internet to deliver dramatically improved service to millions of customers. Although the two plans are pursuing differing online strategies, both are confident the eBusiness solutions they've developed will generate benefits far into the future.

Last spring, Blue Shield of California—the state's second largest non-profit health-care firm—deployed an online guided product advisory built on the Selectica Interactive Selling System platform. The application helps individuals and families choose the health plan that best meets their needs.

A continent away, Blue Cross and Blue Shield of Florida recently launched an enterprisewide system designed to power online quoting operations. The Selectica application is being used by internal sales representatives to simplify and accelerate the process of choosing, configuring and pricing complex, employer-based insurance products and services.

The different approaches underscore the flexibility of San Jose, California-based Selectica's industry-leading eBusiness software and reflect the range of enhancements available through online automation. Significantly, both Blues plans intend to eventually augment their existing applications with the capabilities the other now enjoys.

Helping Consumers Make Better Choices

In California, the primary objective in creating an online advisory system was to help customers make better decisions when it comes to choosing a health plan, says Brian Clinch, director of individual and family plan sales with Blue Shield of California (BSCA).

"Our research has shown that most consumers find choosing the right health plan to be a very difficult and cumbersome experience," Clinch says. "Too often, people have no idea what they're buying. And only when the time comes to use the plan do they realize it's not what they wanted."

To address the problem, BSCA and Selectica developed a guided product advisor within BSCA's mylifepath.com Web site that leads users through a series of questions to determine the type of health plan that best suits their needs. By factoring in the individual's family circumstances, life style, budget and healthcare preferences, the software points the customer toward the plan that most closely matches their requirements from Blue Shield's two HMOs and seven PPOs.

"Our goal is to provide a site that truly allows members and non-members to better manage their own health," says Alan Gellman, vice president of eBusiness for BSCA. "We not only provide important information fast, we've also created new ways for people to take meaningful action based on the knowledge they've learned."

Clinch says that use of the application has greatly exceeded expectations since the system went live in April 2001. The company initially anticipated that around 1,400 users monthly would access the system. In fact, nearly 7,000 consumers are using the advisory each month. And the conversion, or closure, rate on visitors who access the site has been running at between 20% and 25%.

"That's pretty darn good," Clinch says, adding that the site has unquestionably increased BSCA's sales "substantially," although he couldn't say by how much.

Currently, the guided product advisor is not linked to an online enrollment and quoting system. Once the online recommendation is made, the company follows up with an enrollment application sent through the mail.

However, linking the advisory to an enrollment system to create a seamless, end-to-end online system is a primary long-term objective for BSCA, Clinch says.

"We're extremely pleased with Selectica and the application," Clinch says. "It's easy to use, easy to maintain and it's providing an important service to our customers. Essentially, what this tool does is enable consumers to become much more engaged in the process of purchasing their health plan. We think that's an important factor in ensuring our members are satisfied with the choice they make."

Reducing Quote and Rating Errors

At Blue Cross and Blue Shield of Florida (BCBSFL), the objective is similar, although the approach differs significantly. In Florida, the Selectica application is powering a sophisticated enterprisewide system that sales representatives use to generate rates and quotes for employer-based products and services.

The application went live in early September. Jan Esposito, BCBSFL's director of information technologies, says that she's confident the system will dramatically reduce quote errors once it is fully operational and all sales representatives have become familiar with the application's capabilities.

"We wanted an application that would have a centralized storage of data and that would be accessible by external entities without requiring software on their desktops," Esposito says. "Selectica fit the bill. One of the software's most important benefits is that it is extremely easy to make changes in existing products and add new products. You don't have to take the application down."

BCBSFL officials estimate that Selectica's software will allow the company to provide potential customers with up to \$20 billion in online quotes annually, and help secure approximately \$2 billion in online sales. BCBSFL has annual revenues of about \$5 billion and insures approximately 2.8 million people in the state.

Joyce Kramzer, a group vice president with BCBSFL, says Selectica's solution, which is being used by company underwriters and sales reps for both new and renewal policies, will eventually be made available to external brokers.

"Healthcare insurance rating and underwriting are extremely complex tasks, and our large volume of sales compounds that complexity," Kramzer says. "We're extremely enthusiastic about the level of automation that Selectica brings to this process. They're a company that has the experience and resources to deliver precisely what we need." ■

Resiliency Solutions for HIPAA

Compliance and Beyond

By Nigel Stokes, CEO, DataMirror

Healthcare firms face increasing regulatory pressures in all aspects of their day-to-day business operations. Regulations surrounding the management and availability of critical healthcare data including clinical trial data and patient and insurance claims information have led to sweeping changes both in the United States and abroad. Virtually all U.S. healthcare firms will need to implement data management strategies that ensure the integrity, resiliency and availability of critical information in order to meet regulatory mandates in the coming months and years.

One of the most far-reaching of these regulations is the Health Insurance Portability and Accountability Act (HIPAA) which affects all healthcare organizations and other entities that process health-related data. Firms affected by HIPAA include healthcare providers, physicians' offices, public health authorities, life insurers, healthcare clearinghouses, billing agencies, information systems vendors, service organizations and universities. CEOs, CIOs and IT Directors alike cite compliance with HIPAA among the top business issues facing the healthcare industry in the next two years. IT departments within all types of healthcare related companies are being called upon to deliver cost-effective data management solutions for meeting the demands of HIPAA.

What Is HIPAA and How Does It Affect the Healthcare Industry?

The US Department of Health and Human Services' Health Insurance Portability & Accountability Act of 1996 includes provisions for healthcare organizations to implement electronic transactions as well as new safeguards to protect the security and confidentiality of sensitive patient information. One positive by-product of this legislation is that it encourages

healthcare companies to eliminate paper records altogether, increasing the potential for cost-savings and enhanced operational efficiency.

HIPAA has focused the entire healthcare industry on the security and integrity of relational databases containing patient information. One of the most important and challenging requirements for HIPAA compliance is contingency planning. Within a formal contingency plan, healthcare organizations must include the following critical elements:

- ◆ An applications and criticality analysis
- ◆ Data backup plan
- ◆ Disaster recovery plan
- ◆ Emergency mode operation plan
- ◆ Testing and revision procedures

Presently, HIPAA-regulated firms must have a solution in operation by October 2003. Healthcare firms that do not comply face the risk of serious criminal and civil penalties. These penalties may include fines of up to \$25,000 for multiple violations and fines of up to \$250,000 and/or imprisonment up to ten years for the knowing misuse of individually identifiable health information.

Interpreting the regulations and selecting solutions that best apply have posed numerous challenges for healthcare firms. Organizations must take into consideration a number of factors when selecting a solution that best meets their needs and computing environment.

HIPAA can also be viewed as a valuable opportunity for organizations to capitalize on the benefits that compliance brings. Healthcare firms with resilient and accessible data can ensure continuous business operations around the clock while gaining the ability to implement 24/7 e-Business initiatives. By leveraging a HIPAA-compliant disaster avoidance and recovery solution, healthcare firms can lower operational

costs, increase revenue, improve customer service and remain competitive in today's marketplace.

Creating a Highly Resilient and Accessible Data Environment

For healthcare organizations, data resiliency, or the ability to ensure that critical data and applications are thoroughly backed up and continuously available, is an imperative for HIPAA compliance. Beyond compliance with HIPAA mandates, there are many other business benefits to having a disaster recovery solution in place.

The need for high-availability business environments has never been greater. The Internet has created a new breed of customer that demands 24/7 service from web sites and customer-facing systems. If a healthcare organization's server isn't online, or its critical patient and healthcare data is unavailable for any period of time, its ability to conduct business is seriously impaired. Database crashes can also seriously affect a company's ability to do business effectively with employees, partners, suppliers and customers. A long outage can cause the business to grind to a halt.

In order to deliver superior service and achieve 21st Century competitiveness, organizations must have a proven high-availability solution in place in the event of planned or unplanned downtime. High-availability software products can provide an effective solution for creating resilient and accessible healthcare data for HIPAA compliance. Using a proven high-availability methodology, healthcare organizations can mirror critical data from primary systems to one or more recovery systems in real-time, ensuring high-speed operational switching and uninterrupted access to data during planned or unplanned downtime. Beyond HIPAA-compliant disaster recovery, a high-availability solution also allows for highly efficient distributed processing and workload balancing to enhance operational efficiency.

Components of a HIPAA-Compliance Resiliency Solution

A resiliency solution for ensuring HIPAA-compliant disaster avoidance and recovery must take into account the following components.

Mirroring

The most important element in any high-availability solution is the mirroring software that will synchronize the recovery system in real-time from the primary operational system. This software component must be fast, transaction-consistent and guarantee data delivery at the recovery site even in the event of a network or system outage. The software

must also be two-way to allow both the production and the secondary machines to act as a source and target to each other. Full two-way functionality gives the secondary system real-time capabilities to re-synchronize the production system while enabling users to continue working on the recovery system.

Switching

Switching mechanisms are also critical components of any high-availability solution. Switches handle operational role switching between primary and recovery machines. In today's sophisticated network environments, a virtual switchover to a new machine may be as simple as logging on to a second machine. Users and IT staff can be alerted to an outage at which time network traffic can be re-routed or users can click a different icon to establish a connection to the recovery machine. Switching mechanisms automate user and role switching. Switching software can either notify administrators of an outage or initiate other events after a user-defined delay. These types of switching facilities are designed to make system outages as seamless to users as possible.

Monitoring

The third component of any high-availability solution is an interface for tracking the entire mirroring process. The ability to monitor historical and current activities is important, as administrators need to know the performance of their solution. What is the time latency in moving data between primary and recovery systems? In any high-availability environment, performance equals availability. Administrators must have the means to monitor mirroring performance and latency for system backup.

What to Look For in a High-Availability Solution

Implementing a high-availability solution involves moving data in real-time between primary systems and recovery systems in order to secure operations from business interruption. The software used to enable such a solution should meet certain standards. Healthcare firms should consider the following elements when evaluating a high-availability solution to complement their contingency plan.

Transaction Consistency

The software should be transaction-consistent. This ensures that transactions are performed on the secondary machine in precisely the same order in which they occurred on the primary server. Transaction consistency ensures data and object integrity.

Fault Tolerance

The software should include fault tolerance or guaranteed data delivery at the recovery server. If there is a network, system or communication outage during replication, the secondary server should reflect the last

complete transaction. This eliminates the possibility of duplicate entries or partial transactions when it comes time to switch operations back to the primary server.

Ease of Use and Administration

The application should be easy to install and administer. The last thing companies want to worry about when setting up a high-availability solution is custom pro-

"IT departments are being called upon to deliver cost-effective data management solutions for meeting the demands of HIPAA"

gramming and other time-consuming, costly and resource-draining activities. Object and data replication software should install quickly and be ready for operation with minimal effort. Additionally, users should be able to administer all elements from a unified interface.

The Good News/Bad News Story

It is important to note from a systems manager's point of view that a high-availability implementation is never an "out of the box" install. There will always be some customization, monitoring and a good deal of elapsed time before you can consider your contingency project to be fully functional. If a vendor tells you that high availability works right out of the box, start to question the vendor's definition of high availability. That was the bad news. The good news is that resiliency products on the market are very sophisticated, robust and easy to install.

So what can you expect as a systems manager or customer? When you purchase high availability you are purchasing a type of insurance. You are purchasing a product that will allow you to sleep at night knowing that your critical data is safely backed up on a recovery system. If necessary you can switch users over to the recovery system and continue running your business if the production system fails. You can even keep your production users up 24/7 by running

backups off of your recovery system. These are strong long-term business benefits to purchasing high availability but to get there, you must build a long-term relationship with the high-availability vendor. A typical installation may only take a day, but the planning, configuration, monitoring, customization, training, implementing of new operational procedures etc. may take several months and could involve consulting.

High-availability vendors are very experienced in the planning and configuration of high-availability environments. High availability is not a product as much as it is a project. It will involve input from almost everyone from the CEO or upper management to applications programmers, network administrators and the end user.

The Total Solution

The challenges faced by IT departments responsible for ensuring that key systems comply with governmental regulations can be considerable. Moreover, the pressures of the current economic climate mean that IT decision-makers are continuously being asked to do more with less. Healthcare companies can often rapidly achieve compliance through a combination of pre-packaged software solutions and professional services specifically targeting the technical challenges faced by the healthcare industry. By leveraging the high-availability expertise of third party vendors and established consultants, the technology challenges faced by the healthcare industry can be easier and more cost-effective to manage.

Most analysts recommend packaged solutions over custom development solutions for helping companies quickly and cost-effectively create highly resilient environments for HIPAA compliance. In addition to offering proven solutions to thoroughly back up patient databases, high-availability experts can help customers develop or review disaster recovery policies for their organization and implement technical solutions and high-availability methodologies to protect all health information. Beyond the immediate issues of regulatory compliance, revamping their information infrastructure can empower healthcare companies to maximize operational efficiency, enhance service levels and ensure their competitiveness in today's economy. ■

Nigel Stokes is CEO of DataMirror, a leading provider of enterprise application integration and resiliency solutions. Over 1,500 companies worldwide use DataMirror software. DataMirror has been ranked in the Deloitte and Touche Fast 500 as one of the fastest growing technology companies in North America. Mr. Stokes can be reached at nstokes@datamirror.com or by calling 1-800-362-5955.

For more information on any of the companies who contributed to this white paper, visit their website or contact them directly:



Cytura Corporation

250 International Parkway
Heathrow, FL 32746

PH: 888.9-CYTURA or 407.246.7300

FAX: 407.246.5575

E-mail: info@cytura.com

Web: www.cytura.com



DataMirror

3100 Steeles Avenue East, Suite 1100
Markham, Ontario L3R 8T3

PH: 800.362.5955

FAX: 905.415.0340

E-mail: info@datamirror.com

Web: www.datamirror.com



Selectica, Inc.

3 West Plumeria Drive
San Jose, CA 95134-2111

PH: 408.545.2648

FAX: 408.570.2160

E-mail: info@selectica.com

Web: www.selectica.com

Produced by:

KMWorld Magazine
Specialty Publishing Group

Kathryn Rogals
207-338-9870
kathy_rogals@kmworld.com

Paul Rosenlund
207-338-9870
paul_rosenlund@kmworld.com

Andy Moore
207-236-0331
andym@mint.net

For information on participating in the next white paper in the "Best Practices" series, contact:
kathy_rogals@kmworld.com • 207.338.9870

KMWorld
www.kmworld.com

 **Information Today, Inc.**
www.infotoday.com