Off the Record
Volume 43, Issue 2
January 27, 2006

Meeting: Friday, January 27, 2006, 11:30 to 2:00
SDSC at UCSD
Reservations - Contact Linda Maczko @ (858) 534-3995
On-line RSVP: http://www.sandiegoarma.org/arma_registration.htm

Special Tour Event:

San Diego Supercomputer Center

Founded in 1985, the San Diego Supercomputer Center (SDSC) enables international science and engineering discoveries through advances in computational science and high performance computing. Continuing this legacy into the era of cyber infrastructure, SDSC is a strategic resource to science, industry and academia, offering leadership in the areas of data management, grid computing, bioinformatics, geoinformatics, high-end computing as well as other science and engineering disciplines. The mission of SDSC is to extend the reach of scientific accomplishments by providing tools such as high-performance hardware technologies, integrative software technologies and deep inter-disciplinary expertise, to the community.

Reagan Moore
Director of the Knowledge and SRB Lab at SDSC

Twenty years ago, San Diego Supercomputer Center began using what was then the world's most powerful computer. Now, its data-crunching successors worldwide are vital not only in cancer research and gene studies, but also in making sense of the flood of defense intelligence from Iraq and Afghanistan. They're needed to simulate nuclear explosions and monitor the nation's aging nuclear warheads. They contribute to the latest forecasts of global warming. And major retailers use them to keep production going so their shelves don't become empty.

Our Special Tour Guide: Dr. Reagan Moore is Director of the Knowledge and SRB Lab at the San Diego Supercomputer Center. He coordinates research efforts in the development of massive data analysis systems, scientific data publication systems, and persistent archives. Reagan Moore joined the SDSC staff when the center started, and managed production systems for 8 years. He was then asked to develop a research group, pick the research topic, and acquire the funding support. He recognized that automation of data management was a critical need, and focused the new research group on developing generic data virtualization software, the basis of the Storage Resource Broker.

Funding was provided by NARA in 1999 to build a prototype persistent archive. SRB demonstrated the preservation of a 1-million e-Mail collection using workstation technology. The prototype persistent archive now manages over 1 Terabyte of data, including records from web crawls, records for the EAP collection, and records from presidential libraries. SRB now supports multiple preservation projects. Dr. Moore will personally lead us on a tour of the San Diego Supercomputer machine room. After the tour he will host a question and answer session in the auditorium.

MEETING AGENDA
11:30 - 12:00 Registration and Networking
12:00 - 1:00 Lunch
1:00 - 2:00 Tour

Mark your calendars for Friday, January 27th, 11:30am at the San Diego Supercomputer Center.

Please register early, as seating is limited. RSVP to Linda Maczko via phone 858-534-3395 or email: lmaczko@ucsd.edu.

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Off the Record

Association of Records Managers & Administrators San Diego Chapter

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Off the Record is a semi-monthly newsletter of the San Diego Chapter for the Association of Records Managers and Administrators.

This newsletter is published to inform the members of activities of the Chapter, and disseminate news and opinions of Board Members, or Chapter Members. Opinions are those of the author, and do not necessarily reflect official policy or opinion of ARMA, the San Diego Chapter of ARMA, or its members. Your statements and articles are solicited.

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Records Management: What to do about it now

Are you ready for enterprise records management? Are the technologies? We say, "Probably not," and outline a strategy for what to do in the meantime.

The recent flurry of high-profile litigations has demonstrated the extent to which organizations now rely on electronic documents to do business, while also shedding light on the dismal state I which most companies now manage those documents as corporate records. Cases involving Morgan Stanley, WorldCom/MCI, and Credit Suisse First Boston have made corporate counsel and compliance officers sit up and take notice. Organizations are now coming to realize that the information housed in their systems, if not properly managed throughout its entire lifecycle, can represent a significant liability.

These companies are quite right to be concerned with the burgeoning volume of electronic records. To judge from our consulting clients, however, many organizations are trying to decide whether the time has come to throw some technology—and considerable chunks of their technology budgets—at the problem.

The question is one of readiness—on the part of both the end-user community and the records management (RM) technology. Too many organizations have had only minimal policies and practices for managing their paper records—and therefore no culture in place for moving forward with managing their electronic records. On the technology side, we would argue that the software products to enable RM on a truly enterprise level are not quite ready for prime time. So what's a responsible, compliance-oriented organization to do?

Get Your Act Together First

As many companies with less-than-successful software implementations have learned, the technology can take you only so far. If an RM initiative is to succeed, a number of cultural considerations must be addressed—and this goes double for those organizations that have weak (or close to non-existent) policies and procedures for managing their paper records. Accordingly, here are some suggestions for how to get rolling with RM in your organization.

Make an organizational commitment. In our experience, the organizations that have been able to put in place a solid RM program are those in which the practice of RM has been endorsed by management at the highest levels. These companies recognize RM as a fundamental business activity, with a well-defined mission and foundational principles for ensuring that company records are properly classified, retained, protected, and destroyed. This level of organizational commitment is imperative—not the least because company-wide implementation of RM policies and procedures is likely to require considerable cultural change.

Aggressively pursue your enterprise program for RM policies, procedures, practices, and audit. Get your act together without buying RM technology. This includes such best practices as achieving the proper balance between centralization and decentralization of the components and responsibilities of your program, creation of the master records retention and classification plan, and orchestrating the significant training and communications program. Further addressing such organizational components

(Continued on page 16)

Sad State of Data Security

Businesses and government agencies seem inept when it comes to protecting personal information, as the list of mishaps keeps getting

How does this keep happening? Companies have been publicly humiliated, slapped with audits, and threatened with prosecution, but sensitive personal data continues to be compromised. The U. S. Department of Justice is the latest to demonstrate its information—security incompetence. The mistake: exposing Social Security numbers on its Web site.

It's the IT problem that just won't go away. From the time early last year that ChoicePoint Inc. admitted it had been duped into revealing personal data to identity thieves, dozens of other businesses, government agencies, and schools have followed with their own admissions of ineptitude. In most cases, victims can't do much more than keep a watchful eye on their financial statements and credit reports—and hope for the best. Not surprisingly, fraud is on the rise and consumer confidence on the decline.

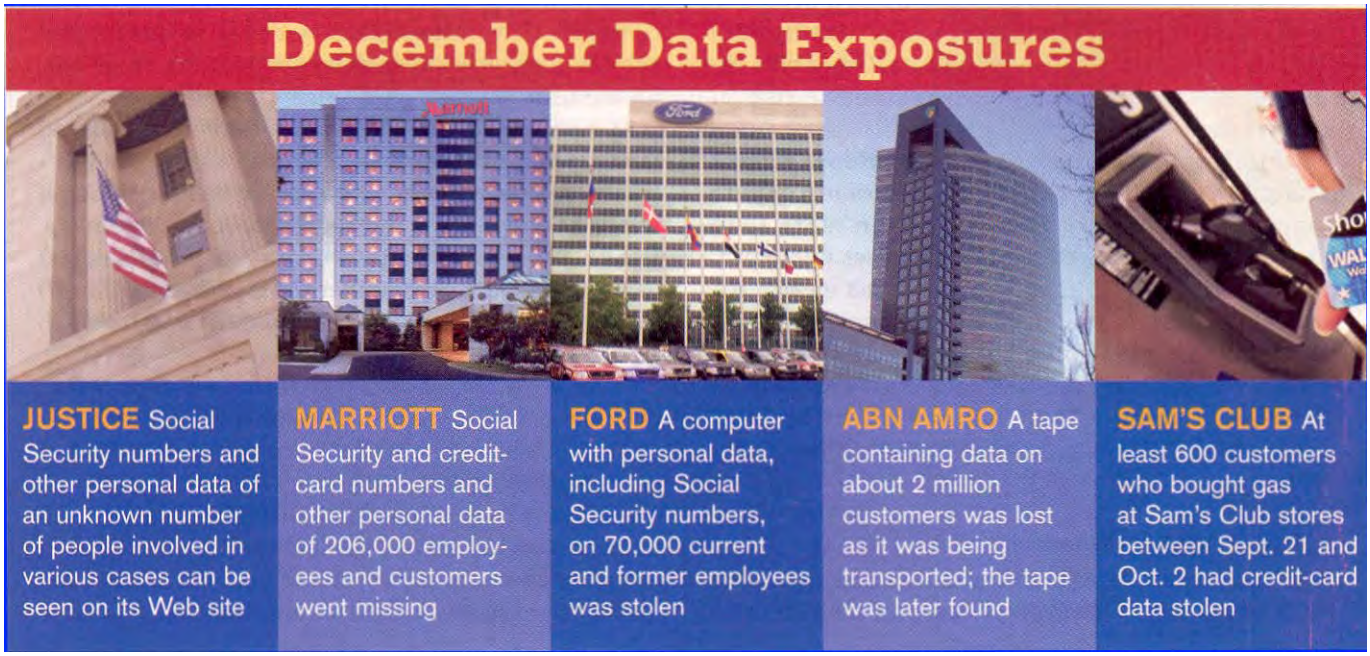
The Justice Department's blunder came to light when *Information Week* investigated the concerns of Nick Staff, a systems security manager at a large bank, who had grown frustrated when Justice failed to remove several Social Security numbers from its Web site, *www.usdoj.gov,* after Staff contacted the agency directly. In one case, the Social Security number of a woman involved in a 2003 immigration-review case was included in documentation about the case. Additional site searches yielded other peoples' numbers if a half-dozen other places.

It's not clear whether the Justice Department broke any laws or regulations in exposing Social Security numbers. It's bound by the Privacy Act, which sets terms for how federal agencies use and disclose personal information, and by its own privacy policies. The Privacy Act, however, is frustratingly fuzzy and comes with a dozen exceptions.

A spokesman for the Justice Department's Executive Office for Immigration Review acknowledged last week that Social Security numbers shouldn't be available to the public and said the information would be removed from the site. He added that, in the 2003 immigration-review case, the affected person would be notified about what had happened.

But cleaning up is harder than it sounds. A subsequent search of *www.usdoj.gov* showed that the PDF document on the 2003 immigration case had been blocked from public view, but Google and Yahoo searches provided a link to a text version of the blocked PDF, and the Social Security number continued to be visible. The spokesman said his office still was looking into how to have the documents removed from Google's and Yahoo's search caches. The department was unable to provide further information last week, as many employees were out of the office during the holiday week.

Staff cane across the Social Security numbers while looking for FBI comments on phishing and notified the Justice Department by E-mail on Nov. 12 that the numbers were displayed on its site. He followed up via E-mail three weeks later and was notified on Dec. 6 by the site's Webmaster that this E-mail had been forwarded to a "responsible component" within the department. Staff contacted *Information Week* almost two weeks later, on Dec. 19, when he saw that the name and number were still on the site. "I would not have gone public with this had the DOJ acted accordingly," he says.



Sad State of Data Security

(Continued from page 3)

DARK DECEMBER

The Justice Department's screwup is just one in a string of year-end data fiascos. Earlier in December, Sam's Club, a division of Wal-Mart Stores Inc., revealed that at least 600 customers who bought gas as its stores between Sept. 21 and Oct. 2 had their credit-card data stolen by hackers. On Dec. 16, ABN Amro Mortgage Group, a subsidiary of LaSalle Bank Corp., reported that a backup tape containing data on 2 million people had been missing for a month; it subsequently was found Dec. 19. Ford Motor Co. informed 70,000 current and former white-collar employees that a computer with personal data, including Social Security numbers, had been stolen from a company facility, according to The Associated Press. A few days after that, confidential information on Florida Gov. Jeb Bush and several other high-ranking state officials was made public because of inadequate safeguards on a new stat personnel system.

But that wasn't the end of it. On Dec. 28, Marriott Corp. revealed that a backup tape recently recalled from an off-site storage facility was missing, potentially exposing the Social Security, credit-card, and bank-account numbers of 206,000 employees, time-share owners, and rental customers of its Marriott Vacation Club International time-share unit. The company says it sent letters to affected customers and employees, offering free credit-monitoring services for a year. Marriott's public statement echoes what other companies have said in similar situation: It's conducting an internal investigation, working with state and federal law enforcement, and "re-evaluating our process to make sure we're taking any additional steps to have it not happen again."

That doesn't satisfy Vic Christensen, a Marriott time-share owner since 2002 who also happens to be a software engineer with a background in data security. "You would expect someone of their caliber to do a better job of protecting customers' information, " he says. Christensen says he'll have a hard time believing anything the company says from this point forward—especially if he gets a letter saying he wasn't affected and thus doesn't qualify for free credit monitoring. The incident, he said, "will make me raise my eyebrows forever" when it comes to correspondence from Marriott.

The risks posed by the nonstop stream of data losses and exposures are worrisome. In a recent survey by Deloitte & Touche, Harris Interactive, and Privacy & American Business, 20% of respondents said they had fallen victim to identity theft or fraud, suggesting a total of 44 million victims nationally. The Federal Trade Commission puts the number at 10 million, but even that conservative estimate translates into damages of $5 billion for individuals and $48 billion for businesses.

WHAT TO DO

Security professionals must reorient themselves if they're going to slow or stop this growing problem. "I think of data loss as the whole reason the profession exists," says Pete Lindstrom, research director at Spire Security. "We get caught up in lots of flotsam and jetsam janitorial activity with worms and viruses. But it's the data that really matters."

IT professionals are giving the problem increased attention. Data security and protection is the top IT spending priority for 2006, according to a survey of 1,700 readers of *Network Computing,* a sister publication of *Information Week*. Perhaps the threat of new laws and penalties has convinced their companies finally to act.

California started the legislative trend in 2003 when in enacted a consumer-notification law that has forced many of the public corporate confessions of data loss and theft. Since then, 21 other states have put similar laws on the books, and another 17 are considering legislation. Some dozen states now allow consumers to freeze or place fraud alerts on their credit reports so their identities aren't stolen after a breach.

Congress has been trying to write a federal law to override the different state rules, though efforts have stalled. At one point earlier this year, 30 different identity-theft bills were circulating on Capitol Hill. Some of the bills lake teeth, requiring consumer notification only when a breach is thought to present a "significant risk" of identity theft and if a "third party" has seen the data. Other bills require notification when there is "reasonable risk" of identity theft.

A bill introduced last summer by Sens. Patrick Leahy, D-Vt., and Arlen Specter, R-Pa., would require companies that store information on more than 10,000 people to formally train employees in security practices, perform vulnerability tests, and ensure adequate security is practiced by third-party service providers. A similar plan backed by Sens. Charles Schumer, D-N.Y., and Bill Nelson, D-Fla., would create an Office of Identity Theft within the Federal Trade Commission, funded to the tune of $60 million a year for five years.

(Continued on page 5)

Security Checklist

SET A DATA-PROTECTION POLICY Too many companies still don't have one

INVENTORY DATA What do you have? What's most at risk?

USE ENCRYPTION It protects data that might fall into the wrong hands

AVOID "BAGEL DEFENSE" A hard exterior isn't enough if your network interior is soft

THINK OUTSIDE THE BOX Policies should extend to laptops and cell phones

INVEST Good security requires more than a single system upgrade

AIM HIGH Consult standards such as ISO, the British Standards Institution, or the credit industry's Payment Card Industry Data Security Standard

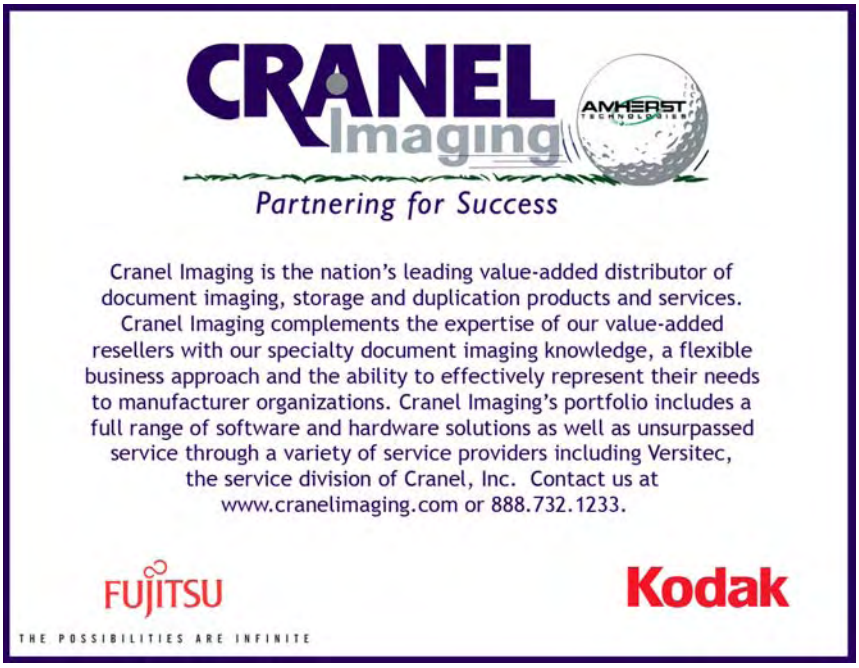
Sad State of Data Security

(Continued from page 4)

ALL TOO COMMON

As the Justice Department situation highlights, the government has its own problems with data security. Two reports by the Government Accountability Office in the last 14 months have found that agencies aren't doing enough to reduce the public display of information like Social Security numbers in public records. A November 2004 report found that 63% of court records and 59% of the records of recording officials made Social Security numbers available to the public. A second report said that Social Security numbers were available in public records in 75% of U.S. counties and 41 states and the District of Columbia.

IT managers shouldn't need laws to force them to protect the personal data of customers and employees. But it's a difficult job. Data can be compromised I many ways: absent-minded posting of data on Web sites, lax controls in handling backup tapes, failure to encrypt, deployment of new systems before security is adequately tested, and the hacker practice of "skimming" data from magnetic strips when credit cards are slid through readers, a technique thought to be used in the Sam's Club incident.



A breach can have long term consequences for a company, beyond damage to its reputation. BJ's Wholesale Club and DSW Inc., both of which were facing FTC charges for failing to adequately protect consumer data, agreed to implement comprehensive information-security programs and subject themselves to security audits every other year for the next 20 years.

At ABN Amro, the scare caused by its misplaced tape convinced it to replace backup tapes with electronic data transfers across a secure network when it needs to move data to credit-reporting agencies. Health insurer Empire Blue Cross says it has stopped using Social Security numbers as health-care plan ID number and has shipped cards with new numbers to all of its members.

Other businesses better take their own steps before they become the next data-security headline. Security 101 is to write a formal security policy and take a data inventory to determine what's most at risk. . Firewall traffic must be monitored for suspicious activity, and managers should get very familiar with all the ways data can leave company networks and systems. It also can't hurt to establish access controls, ensuring that only those who truly need sensitive customer data can get at it.

And then there's the most obvious technical solution: data encryption, making it nearly impossible for the bad guys to use any data that's stolen or lost. Yet 99% of companies still don't encrypt backup data, says Greg Shipley, chief technology officer at Neohapsis, a security consulting and IT product-testing company. The reasons IS execs give for shying away from encryption range from cost and complexity to performance and efficiency issues.

Encryption of backup tapes is "one of the few areas in information security where both the industry and the vendors are woefully behind," Shipley says. The ideal approach is to deploy tape drives that have encryption built into the hardware, which would help protect the data on tapes, even if they fall into the wrong hands. Several vendors, including Cybernetics, Quantum, and Sun Microsystems, plan to introduce such products this year. Software-based encryption can also go a long way to protect data. Vendors like Decru, Kasten Chase Applied Research, and NeoScale Systems sell products that let companies encrypt data en route to tape devices. Businesses also can encrypt subsets of data at the operating system level before specific files are backed up, but this approach is often hard to deploy in transaction-oriented database environments that haven't been designed for it.

The most important policy companies can put in place is one that protects data at rest, as well as data that's transported over networks or on tapes. "The fact that companies haven't factored this in as a potential threat is scary," Shipley says. "As a community, we've got a lot of work to do in 2006."

That may just be the understatement of the new year.

This article appeared in *Information Week*, Issue 1,070, January 2, 2006, Page 18 and was written by Tony Kontzer Larry Greenemeir with Elena Malykhina and J. Nicholas Hoover.

Storage & Servers

Bigger disks, fatter pipes and disk backups are all the rage in the storage market. On the server side, multicore processors, blade servers and virtualization are hot, hot, hot.

A constant stream of mergers and acquisitions, new technologies and new products make in an exciting year in the storage and server market, yet finding the dollars to buy new equipment remained a challenge. An until the major upgrades come and go another cycle, we don't expect that trend to change much, so in the upcoming year, again, you'll be asked to do more with less.

How can you squeeze more out of something you've been squeezing for years, particularly when that something is a huge chunk of your IT budget? By shopping intelligently. You now what our environment needs; don't get sole an ill-fitting solution that requires too much of your time. Focus on increased automation to save valuable work hours, and justify every infrastructure purchase—not because infrastructure is expensive, but because each piece of hardware adds to your maintenance and administrative costs. For 2006, pay attention to bigger disks, pipes, disk-based backups ad virtualization when making key storage decisions. As for servers, multicore processors, blade servers and virtualization deserve your attention.

iSCSI & 10 Gig: Perfect Together?

We've been waiting years to see whether iSCSI can compete with FC (Fibre Channel). We're likely to find out in 2006. 10 Gigabit Ethernet switches are becoming more readily available and affordable; we're just waiting to hear about those brave early adopters who can find both an iSCSI connection initiator and a target to support 10 Gigabit Ethernet. Meanwhile, companies such as Force 10 Networks are working with iSCSI vendors to run Gbps to the target (the server or array that serves up data) and 1 Gbps from the servers. Since iSCSI will move to 10 Gbps just when FC moves from 4-Gbps Ethernet to 8 Gbps, iSCSI has a chance to become the faster platform. The old arguments about iSCSI being too slow will go out the window, and FC vendors will have to find a different excuse.

Now's the time to prepare for iSCSI. Consider it when you're making your infrastructure ad storage decisions. Set-ups by many vendors give you faster than 1-Gbps total speed, and 10 Gigabit will just expand your options. However, the technology won't be right in every situation. If you own an FC SAN, for example, you shouldn't run to iSCSI automatically. You've got a lot of infrastructure tied up in that SAN. Consider what you would for any other storage technology-speed, infrastructure impact, vendor road map, cost per gigabyte, management and add-on applications.

SATA II and SAS

SATA (Serial ATA) II and SAS (Serial Attached SCSI) also show promise. SATA II products were released to the public in 2005; SAS was released to OEMs. Both will become readily available in 2006, and both address shortcomings of previous disk communication technologies.

Products that support SAS for data-center use will proliferate in 2006. This isn't necessarily because the technology is better than existing options (though our tests have shown it is), but because it's designed to work in with existing options. OEMs can purchase a single chip set or expansion card and support multiple drive types. Expect to see products that mix SAS with FC and SAS with SATA II, where the box is exactly the same, but the disks vary. The chipsets and controllers are ready from Adaptec, Broadcom, LSI Logic and others; watch for OEM products that implement the technology in 2006. This is all good, because OEMs won't have to support two or three separate lines. With any luck, some savings will be passed on to customers. Your high-end and low-end arrays' hardware and software can look identical and come from the same vendor, a simplification that can help reduce errors and

Companies to Watch

AMD *www.amd.com/us-en*	This larger, more established company is making moves against Intel. Next year, look for it to take on the desktop and multiprocessors.
DYNAMIC NETWORK FACTORY *www.dynamicnetworkfactory.com*	This small company is offering encrypted and secured NAS products.
KASHYA SYSTEMS *www.kashya.com/index.jsp*	Another small company with big connections. It offers replication with support for high-end NAS gear and long distances.
MICROSOFT *www.microsoft.com*	While rolling out a new server and client OS, Microsoft is also making moves in the storage space.
ORION MULTISYSTEMS *www.orionmulti.com*	This start-up is putting massive multiprocessor systems on the desktop.
VIRTUAL IRON *www.virtualiron.com*	As its name suggests, Virtual Iron is all about virtualization on commodity hardware and SAN connectivity across multiple servers.

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training time.

But what about speed? Both SAS and SATA II can support higher sustained throughputs than the technologies available today, but few products will take advantage of these speed changes in the coming year. Disk subsystems will require major changes to realize these technologies' full potential.

Monday Morning Quarterback
Storage & Servers

In 2005, we predicted the iSCSI market would hit the mainstream. Announcements by EMC, Network Appliance and a host of others proved us right. Sales of iSCSI devices have continued to grow throughout the year, and show no signs of weakening.

Feature-rich iSCSI SANs were on our watch list, too, and companies like LeftHand Networks and EqualLogic have built some advanced storage management functionality into their iSCSI systems.

We told you low-end SANs weren't the answer, and though they have sold better than we expected, they are not taking the midtier by storm. Many customers—even ones to whom we would recommend a Fibre Channel SAN—do not want to take apart every machine that needs access to install and maintain FC HBAs (Host Bus Adapters).

We also said Intelligent FC switches were coming of age. Here, we were almost right. These devices are available but underutilized because many people are cautious about putting too much into one place. The intelligent FC switch market has shrunk to just a few players, with at least two start-ups (Maranti and Sandial Systems) meeting their demise in the past year or so, and a third being bought outright (Troika Networks, bought by QLogic).

We advised not to bet the farm on ILM (information lifecycle management), and we hope you listened. A complete ILM solution is a morass of policy and procedure most of you don't have time for. We said to pick and use the easy pieces of ILM, and we stand by that call.

We were also right when we said 64-bit computing would be possible in 2005, but many apps would not be ready. Many Microsoft-focused application developers are waiting for Vista and Server 2006 to come out. Of course, since the Digital Alpha we've had noncommodity 64-bit computing, but it's not mainstream.

Finally, we said disk-to-disk technology would come of age, and tape would become the archive format. We were dead-on. Now we predict nearly all tape will be encrypted by the end of 2006. Check back with us next December.

Time for Disk Backups

In 2005, some big-name hardware and software vendors threw half-completed products at you, claimed no one else did replication or continuous data protection for their target market and asked you to swallow that lie whole. In 2006, those vendors will catch up to the rest of the disk-based backup and continuous data protection markets and offer products worth buying.

Consider implementing near-real-time replication or continuous data protection. These technologies have two important advantages. First, moving data between disks shrinks the backup window. Second, the right products keep tape usage at a reasonable level, as you can choose which data is important enough to go from replica to tape.

Replication from vendors such as XOsoft and DataMirror provides discrete, point-in-time, disk-to-disk backups. The frequency of those backups differs wildly among products - some replicate every few minutes, others every few hours - so limit your choices to the backup products whose replication options are right for you. Continuous data protection, on the other hand, offered by Revivio, StoreAge Network Technologies, XOsoft and others, offers real-time or near-real-time copying of each data change - a serious amount of traffic that can drag down performance if thousands of users are on the network. With continuous data protection products, you must choose between asynchronous and synchronous replication. Asynchronous won't slow your applications, but is slightly less reliable than synchronous. Meanwhile, synchronous replication, poorly implemented can bring your entire storage infrastructure to its knees as it waits for a response for each copied write. If you setup is designed to coy across the Internet, you'll encounter massive delays. Find out what your vendor has to offer to maximize reliability and performance, but realize that there's a trade-off between the two.

Say No to Virtualization - Unless. . .

2006 will not be the year of disk virtualization, no matter what EMC, QLogic and other vendors tell you. The number of customers with so much disk space that they need to virtualize is tiny. And even in such cases, many customers have been reluctant to move based on the problems this technology introduces in data recovery scenarios. With a normal SAN, you can always plug directly into a storage array if your switch dies. With virtualized

HOT	NOT
Blade servers for multisystem solutions	Minicomputers, except for massive virtualization
Ubuntu Linux	BSD and Fedora
Secured storage	Unsecured storage
Disk-to-disk backup	Tape backup

Storage & Servers

(Continued from page 8)

SANs, this often isn't the case, because the switch decided where to put your data. You should have a strong business case for virtualization before you let vendors tell you what you need.

That said, disk virtualization makes perfect sense in some cases. If you have a large SAN implementation that uses heterogeneous arrays, for example, your research might shoe virtualization is a good idea. Check out the virtualization offered by your array or switch vendor. Generally speaking, the more data you have, and the better you are at classifying it, the more disk virtualization makes sense.

Multicore is Here!

Multicore processors are making a splash. The CPU vendors believe this arena is so hot they are regularly updating their product road maps and plans.

Advanced Micro Devices and Intel inundated us with news releases about new lines, new names and new chips

to continue. These processors join two or more CPUs to take multiprocessing to a new level. They do process more, and can speed our applications, but remember to question the increase I heat dissipation, and how much processing power your application really needs. Although the marriage of virtual servers and multicore will be a major win for users, most standalone applications that can run on a single serer won't benefit too much from these processors.

To determine your need for multicore processors, consider whether your applications are CPU-bound, or if you're running many applications on the same server. If your app relies most heavily on storage, memory or the network, multicore isn't likely to benefit your setup.

This technology has added a new twist to an old nightmare: multiple CPU licensing fees for software that runs on multicore systems. This per-CPU pricing model has a flaw: Vendors that charge extra for installing an application to a multicore machine get bad buzz, but if they chare the single-CPU fee for a multicore installation , they lose revenue. We expect multicore technology to force software vendors to change their pricing models from per-CPU to per-application per-user or per-network.

Per-user pricing works well within an enterprise, while per-application pricing works well for applications open to unlimited users on the Internet. Per-network pricing doesn't exist but would make sense as midway between user and application licensing.

Blades: Slice of Heaven or Rusty Knife?

Like all technologies, blade servers have a place in the enterprise, but it helps t know the likely benefits for your organization, since different circumstances determine whether they'll save you space or improve availability. Blade servers are best-suited to replace minicomputers. As long as your apps run on commodity OSs, blades are a strong option for this purpose.

Upshot

STORAGE:
The channel is choking the high end, as are pricing and complexity. Watch what happens at the midtier to understand the market's direction.

iSCSI will continue to grow in popularity, but is not yet poised to take over the world. Keep an eye on it as it matures.

SERVERS:
Multicore will slow the adoption of blade servers as it meets the needs of many customers.

Virtualization will continue to grow in both Linux and Windows segments as a way to host many low-utilization applications on a single server without tainting the other's operating system environment.

Blade servers don't necessarily save space compared with 1U servers. Because vendors are building in redundancy, control and processing, blades often take up more space than equivalent 1U servers. On the other hand, these machines take up less space than IBM iSeries or Sun Microsystems midtier servers. Blade servers don't necessarily7 use more power per unit than 1Us, but you must consider the amount of power required to fuel a rack and the amount of air conditioning you'll need to cool it.

For centralized management and provisioning, blade servers fare better against 1U servers than against high-end Sun and IBM boxes, the original - and still best - provisioning and server virtualization systems. But 1U servers fight vendor lock-in. If your 1U vendor makes poor business decisions or a shoddy product, you can always stop buying its products. With a blade server, it isn't so simple. You'll have blade frames lying about that might need servicing. You can't just throw out a bad box and buy a new one if that box is the entire blade frame.

Finally, determine how to achieve the highest availability - whether by using a blade or a 1U server with third-party load-balancing products from vendors such as F5 Networks or NetScaler. Blade server pricing is becoming competitive with 1U servers for the same number of CPUs, but availability and load balancing remain the more important factors. Blades still offer more of both than 1U servers, but less than 1U servers with third-party products fronting them.

Operating Systems Re-Revisited

In the coming year, you can look forward to Round 12,000 of The Great Operating Systems Shoot-Out. Novell, Red Hat and IBM are pushing Linux, while Microsoft is continuing to do what it does best: sell Windows.

Our reader polls have shown a strong willingness to adopt Linux, with 49 percent of respondents now considering Linux as a viable replacement for Windows in large and small data centers. We expect this change to stoke some competitive fires. With Windows Server 2006, Microsoft will attempt to show you the benefits of integration with other Microsoft products, while the Linux vendors will show you viable point solutions that work, but aren't so integrated.

In places with high exposure to public networks and heavy-duty security requirements, we recommend going with Linux. IT managers who value ease of use and MOM (manger of manager) style management will want to choose Windows. In every case, ask yourself, "What's cheapest for the organization?" And beware of vendor-sponsored analysis. Get independent third-party information about costs. With less at stake than vendor-sponsored data, third-party sources are likely to produce less-biased information.

Server Virtualization and You

Server virtualization will continue to mature in 2006, yet it will not develop into what we really need: accurately allotted resources and a system that warns us when CPU, memory and disk space are low. Still, the new year will bring more versatility, even though we won't make it to complete data center virtualization. The server side has come close, but the storage side still has a way to go.

There are two major uses for server virtualization: con-

solidating servers and running a single app on multiple servers. Server consolidation will undergo few changes - little more than some support for new hardware and operating systems. Running one large application on multiple servers presents difficult problems. What if the information needed by a CPU on one machine is stored on another? Such problems have dogged virtualization vendors for a long time.

The answer might lie with solutions like Virtual Iron, which virtualizes commodity hardware, or IBM, which has discussed expanding mainframe virtualization technology to commodity hardware. Whoever supports the most hardware with the most solid solution will win this race, because database and e-mail server requirements are growing at an alarming rate, and clustering is just a stop-gap measure.

Don MacVittie is a senior technology editor at *Network Computing.* Previously, he worked as an application engineer at WPS Resources, a Green Bay, Wis., utility-holding company. Write to him at dmacvittie@nwc.com. Post a comment or question on this story at www.nwd.com/go/ask.html. This article appeared in *Network Computing*, Vol. 16 No 26, Page 24, 12/15/2005.

Basic Records Management Course

A course in basic records management is open for enrollment at City College. This course is appropriate for records managers, assistants, clerks, and those considering a career in the field.

Classes start on February 6th, 2006.
This is an on-line, distance education class, so assignments can be completed from home or the office.

Registration is open **NOW**
To register go to www.sdccd.net
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Course – Records Management 205
Course number - CRN93618
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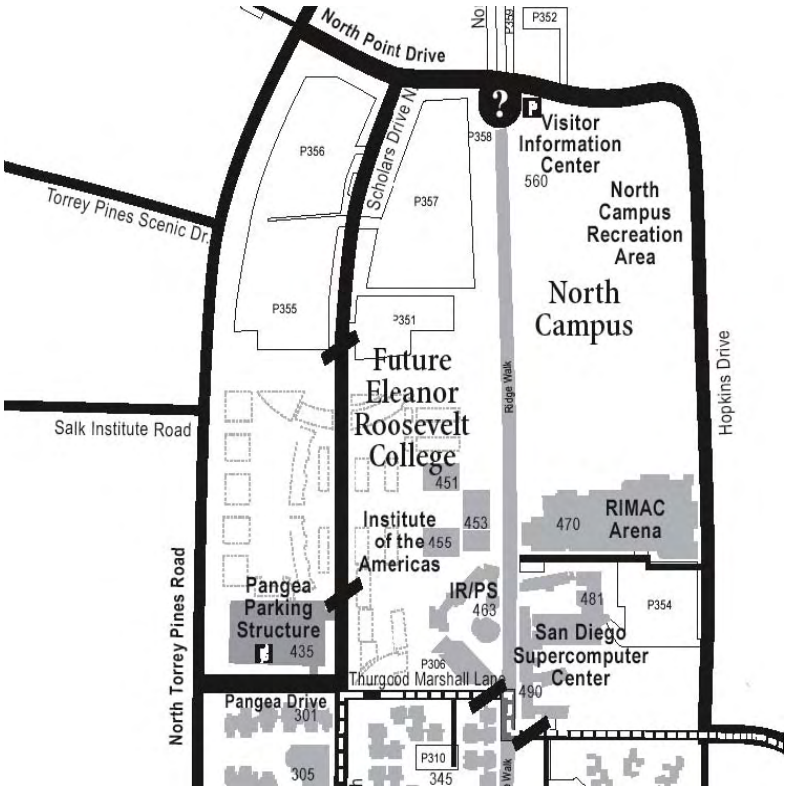

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Directions to SDSC at UCSD

- Take Interstate 5
- Exit Genesse, turn West off exit. (From south, turn left. From the North, turn right.)
- At the top of the hill, turn left at North Torrey Pines Road.
- At the first light, turn left on Northpoint Drive into UCSD.
- Follow Northpoint Drive to the campus Information Booth.
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Check out vital information you might have missed!
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This is a link to ARMA Audio and Web Seminars that you might have missed.

Basic Records Management Course

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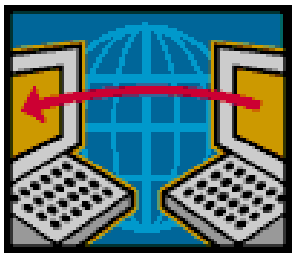

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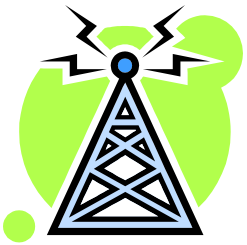

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By Linda Maczko

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Every member counts and every member makes a contribution. If I missed anybody, please let me know so that I can make sure you are included.

If you have questions about membership, please send your comments, questions, suggestions to myself at lmaczko@ucsd.edu or Tracee Hughs at thughs@rdblaw.com.

ARMA - San Diego Chapter

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San Diego ARMA Board Meetings

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COR-O-VAN

of your enterprise RM program is far beyond the scope of this article, but they are necessary to the success of your initiative.

Identify first-phase opportunities for electronic RM. Likely candidates include applications within your organization whose content is already being managed in an enterprise content management (ECM) system—such as administrative applications in accounting or HR, or your highly unmanaged and thus possibly highly exposed shared drives, or email. Addressing one of these areas first will allow you to deploy technology to address RM, but without running too far ahead of your long-term ECM or RM enterprise architecture strategy.

Establish an RM steering committee and departmental records liaisons. The steering committee should be responsible for periodic review of both policies and procedures and the master records retention classification plan, to ensure that the RM program continues to meet organizational needs. Within individual departments, managers who ""own" records should be made responsible for their proper management, identifying a records liaison to perform record functions within their department. Individual employees can then recommend revisions of record classification and retention schedules to their record liaisons as a way of ensuring that the schedules continue to meet ongoing business needs.

Fit RM into your enterprise architecture planning. All of these actions discussed above can help lay the foundation for a future program managing both paper and electronic records throughout their lifecycles. At the same time, however, you can begin to prepare for the eventual roll-out of the technology that will enable your organization to properly—and efficiently—manage all documents that constitute corporate records. It starts with architecture planning—preparing the infrastructure for your RM program.

Architecture planning today centers upon the concept of the enterprise reference architecture (ERA) - essentially, a framework that functions as a set of guidelines and practices for an organization's technology infrastructure, which can serve as a baseline on which to base technology decisions. Records management should be included in your ERA, as part of your overall architecture for ECM. But it's probably not included right now, and doing so will take some time—more time than you probably have.

So we suggest that you get rolling with RM in the following way by pursuing the longer-term strategy of including RM in your enterprise's ERA-based ECM architecture. Again, your first focus should not be to buy or implement technology for RM, but rather on getting your act together. In our opinion, most organizations would be better served by doubling their efforts on the non-technological, cultural components of RM while perhaps holding back on implementing technology for this purpose.

Do the Math

For executive management who are now trying to determine whether to deploy RM technology, we recommend management doing a cost-benefit analysis of four basic strategic option: (1) continue what you've been doing, (2) implement an aggressive document destruction program, (3) implement an aggressive retention program, or (4) implement an electronic RM system (with all the organizational changes that such an implementation entails).

For some organizations, such an analysis will correctly determine that they are ready to implement RM. But our consulting experience with proactive CIOs and organizations has shown, somewhat surprisingly, that for many others who have undertaken this same analysis, "keeping everything" is the most prudent strategy—for now. They've calculated the cost and risks of all four alternatives, including the probable costs of discovery, possible fines and other penalties, and probable costs and risks of making the necessary change for full retention versus implementing an RM software solution and making the appropriate organizational changes.

They've calculated the cost and risk of deploying RM technology, given a realistic assessment of the state of the

Records Management: What to do about it now

industry today and their own organizational readiness—and they have concluded that the best strategy for them is full retention (as a default), coupled with aggressive ramping up of their existing RM program, i.e. getting their act together first, as outlined above. We believe it's an option worth considering.

So What about the Hot New Records Management Technologies?

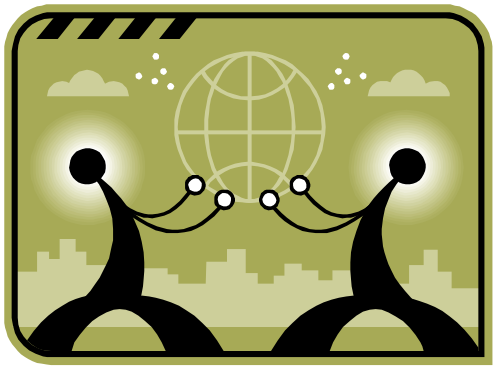
Today, the hottest areas in enterprise RM are information lifecycle management (ILM), remote or "federated" RM, and auto-categorization. These three technologies are necessary for RM to become a mainstream technology, effectively deployed across enterprises, for each of them provides an effective solution for problems that have hindered enterprise RM.

However, as we said upfront, none of these technologies are ready for prime time. Rather, they should be part of your long-term strategy (with a placeholder set aside for them in your ERA), but should not be part of your first-phase implementation.

Information lifecycle management: ILM solves the fundamental problem that many of the things required by enterprise RM (things such as guaranteed security, retention, and disposition of records) are very difficult to do with traditional combinations of RM software and magnetic, optical, or tape storage systems. ILM basically weds ECM and records management with storage management to effectively carry out those functions.

Remote of "federated" RM: This technology solves a fundamental problem of most organizations, since most organizations must manage documents that reside in many different repositories. For such organizations, it's unrealistic to move all of these documents into a single repository in order to manage them as records. So remote or "federated" RM lets you manage as records those documents that are in other repositories, such as other ECM systems, or email systems, or network drives, or ERP system.

Auto-categorization: The auto-categorization piece solves the fundamental problem of getting documents into the RM system. Documents must be declared as records and classified as to what kind of record they are. But it's unrealistic to expect that the people who create the vast numbers of documents in any organization are going to be effective in performing such classification for every record they produce; envision, if you will, employees squinting over lengthy "picklists" of record types. If we've learned anything in the last 10 years, it's that such initiatives almost always fail to adequately ensure both sufficient participation and accuracy: either they are too much of a hassle for end users to perform, or they generate too many errors to be practical. Auto-categorization auto-mates such classification, using rules engines to place each document in the appropriate record bucket.



These three technologies will be essential for your enterprise RM program to succeed, and you should plan to use them in the long term. But—to reiterate—the products are not yet mature enough to outweigh the substantial risk and cost they will likely entail. Your first-phase RM projects should not depend on them, although you should plan to introduce them in later phases—in a year or more—at which time both the products, and your organization, will be ready.

Richard Medina and Linda Andrews are analysts with *Doculabs,* a research and consulting firm that helps organizations reduce the risk of their technology decisions. Reach them at 312-433-793, info@Doculabs.com, or www.doculabs.com.
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