

# The Doctor Is In

*Treating the storage pains of healthcare organizations*

**F**aced with tightening budgets and escalating demands on data-storage resources, IT professionals in healthcare organizations worldwide are finding themselves in a pinch.

“Of course, budgets don’t go up quite as fast as the demand for services increases,” says John Halamka, M.D. and CIO of CareGroup Health System, Beth Israel Deaconess Medical Center, and Harvard Medical School in Boston, Massachusetts.

By Jim Carr

“Every healthcare CIO in America generally feels like no matter what their budget is, it is too small.”

Dealing with budgetary constraints is part of the job, says Halamka. “I’m an emergency physician, so it’s all about triage,” he says, explaining how he justifies technology spending, including storage-management assets. “For every project and purchase, I use objective criteria of quality and compliance, return on investment, and impact factor to help me triage what we do and what we don’t.”

It’s a similar story for health insurance providers such as ARGE AOK-IS Mitte, one of Germany’s largest health insurers with about 4 million subscribers. “Because we are government ruled and politics are involved, we are very much under pressure to reduce costs so that patients’ premiums do not rise too much,” says Siegfried Baaske, ARGE AOK-IS Mitte’s chief information officer.

That pressure for Baaske has led to centralizing the organization’s IT operations, in particular the storage infrastructure used to archive emails. This centralization was critical in terms of ensuring that the insurer can meet stringent e-discovery laws that regulate the archiving and retrieval of email messages for litigation purposes, Baaske says.

## New solutions, new challenges

If this all seems as familiar as the old doctor-patient saw, “I’m not sure what’s worse, Doc, the disease or the treatment,” it’s because when it comes to treating what ails healthcare IT these days, it seems that every new solution brings with it a new challenge.

Halamka says there is good news, too. “I haven’t used film since 1998. Every X-ray, mammography—they’re all captured digitally.” The less-than-good

news: All that digital information costs money to store. With data storage needs growing more than 25 percent annually, managing storage resources has become a hot-button topic for CareGroup. According to Halamka, the Beth Israel Deaconess Medical Center generates five terabytes of medical imaging data annually. New technology inevitably leads to questions for him and his IT colleagues. “How do I back it up?” he asks. “How do I provide disaster recovery? How do I even afford the cost of that much storage? What about information lifecycle management?”

## Tiered architecture

To keep pace with data stores currently in the 100-terabyte range, Beth Israel Deaconess Medical Center has implemented an information lifecycle management solution that relies on a three-tier storage architecture.

At the top tier is a Symmetrix DMX Fibre Channel array. “I put all of my most important medical information there,” says Halamka. “An X-ray taken today goes to that storage. But what’s the value of an X-ray that’s a year old?” he asks. “It’s a little less, so I take it off the most expensive storage and move it to a CLARiiON, EMC’s less-expensive system. The value of a five-year-old X-ray is even less, so I’ll move it to EMC Centera storage.”

Halamka and Michael Passe, the hospital’s storage architect, rely on NetBackup 6.0 to provide data backup and recovery services. They’ve also deployed Symantec’s Storage Foundation on a subset of their Microsoft Windows platforms for volume virtualization. “This aids in volume expansion and migration from storage platform to storage platform without service disruption,” explains Passe. “Our enterprise email and file services archival software is Symantec’s Enterprise Vault, although we’re not in production with the archiving solution yet.”

The project’s goal, says Halamka, is to deliver “a virtually ‘bottomless’ mailbox and eliminate the use of archived Outlook .PST files where possible. This will reduce the number of end users calling technical support asking for larger mailboxes and eliminate reliance on Outlook’s email file—which is easily

corrupted—as a source for email backups.

“For file services, our goal is to decrease the weekly load on our backup systems by migrating lesser-used files to passive storage,” he adds.

Managing EMC storage hardware with the Symantec software dramatically reduces what Beth Israel Deaconess spends on data-storage arrays, says Halamka. “I go from US\$44 a gigabyte to US\$22 a gig to US\$11 a gig by moving files from Tier-1 to Tier-2, then Tier-3 storage,” he says. Moving backup data to Tier-3 storage, in particular, has led to considerable savings in backup costs for the hospital “because we store the same data five to 10 times on backup tapes,” Halamka says.

With the Enterprise Vault capabilities, “We’re implementing storage of backups on our lowest cost serial ATA drives,” explains Halamka. This “eliminates many man-hours in the management of backup tapes. We have not yet calculated this savings.”

### Critical care for email

In Schwalmstadt, Germany, storage management has the attention of Siegfried Baaske, too. Because many of the insurer’s 10,000 employees exchange emails with important attachments (such as invoices to vendors), Germany’s e-discovery compliance laws require ARGE AOK-IS Mitte to archive original copies of every correspondence.

Each of those emails “becomes a legal subject,” Baaske says. “If we have a court case or a negotiation with our vendor, we must be able to make sure that the email we have in hand is the original.”

Until Baaske deployed Symantec’s Enterprise Vault, however, guaranteeing that level of compliance was virtually



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impossible. With the company’s employees managing their own individual Microsoft Outlook email clients, they “could do all of the functions that Outlook allows them—they could delete or change emails.”

In addition, Baaske found himself dealing with “the tremendous number of emails that we send and receive. Each employee gets about 30 to 50 emails a day.”

That adds hundreds of thousands of messages—many of which contain attachments—daily. The insurer’s ability to manage disk resources on each end user’s PC was strained.

Baaske says developing a centralizing email repository was critical for lowering the costs of disk storage space by eliminating duplicate archival copies of employee email folders. With workers scattered across about 500 locations, Baaske also wanted to automate email backup, and that, too, could only be performed from a central site. To do that, he’s currently in a phased

deployment of Symantec’s Enterprise Vault, with a pilot in company headquarters. Baaske plans to roll it out to “the 500 locations we serve over the next year.”

Like CareGroup, ARGE AOK-IS Mitte will deploy Enterprise Vault within a tiered architecture. It will maintain recent emails on a three-terabyte disk array for three or four weeks before archiving to tape.

Baaske expects his disk array will expand to “10 to 20 terabytes in the next three years.” Because he must maintain emails for only seven years, he believes ARGE AOK-IS Mitte’s storage needs will begin to level off after that. “After seven years, email has no legal value, and we can start to delete it,” he explains. ■

*Jim Carr’s work has also appeared in Network Computing, InfoWorld, VAR Business, and SC magazines.*



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