



Making the Grade With Storage Area Networks

Drexel University faced increasing data storage demands. A Storage Area Network from OSSI moved it to the head of the class.

Challenge: Design and implement a robust data storage system that meets the needs of a growing community of instructors, students and administrators.

Solution: A multi-campus Storage Area Network from OSSI that combines hardware, software, network infrastructure and support.

Benefits: Improved data availability for all users, greater reliability of storage hardware, integration across heterogeneous platforms, and complete data redundancy for disaster protection.

The academic world is built around data. From research and library resources to class schedules and student information to financial and business systems, colleges and universities amass vast stores of data.

That's particularly true for institutions like Drexel University, which has built its reputation on excellence in science and technology. Instructors, students and administrators rely daily on data storage to be reliable, accurate and scalable to grow with their needs.

So when Drexel decided to invest in a new Storage Area Network to keep pace with its rapidly expanding data requirements, it turned to OSSI for the hardware, software, network infrastructure and ongoing support that would help it remain at the forefront of academic excellence.

"Drexel is a tech-savvy place, and our users have high levels of expectations," says Kenneth Blackney, director of core technology infrastructure for Drexel. "IT projects often ratchet up performance behind user expectations. We wanted to stay ahead of the curve."

Technology Leader

Situated in the heart of Philadelphia, Drexel has long been recognized as an academic and technology leader, offering well over 100 bachelor's, master's and doctoral programs. During the past five years, enrollment has increased 33 percent to more than 12,000 students. Along with that expanding student population came a dramatic increase in storage needs.

What's more, Drexel recently combined educational efforts with MCP Hahnemann University, the nation's largest private medical school. In doing so, Drexel took charge of the entire IT infrastructure for the two institutions. That meant dramatic

increases in storage requirements, plus the need to integrate storage across disparate platforms and multiple campuses.

It was clear that Drexel needed not just more storage, but an entirely new storage solution – one that would provide increased performance, greater reliability, and the ability to protect the university's information resources against disaster.

After evaluating systems from several leading providers, Drexel chose OSSI. "OSSI was the only provider that could meet our demands for service-level agreements and provide us with the support we needed," says Blackney.

Working with LSI Logic Storage Systems, a leading maker of data storage systems, OSSI enabled Drexel to deploy a sophisticated Storage Area Network (SAN) that combines the LSI MetaStor E4400 storage array, the LSI ContinuStor™ Director storage management system, high-speed Fibre Channel connections, and ongoing service and support.

Three Steps to Success

Drexel implemented its new storage solution in three phases. In the first phase, the E4400 provided increased performance and additional storage capacity. Testing went smoothly, reports Blackney, and OSSI helped Drexel identify and resolve a performance slowdown in one area. "When we talked with OSSI about how to configure and optimize the solution, it was immediately clear that they knew what they were doing," he says.

In the second phase, ContinuStor Director enabled Drexel to significantly reduce the time needed for data backup. In the past, the university shut down its databases for four hours each night to back up data. That was a problem, as current and prospective students across the country and the globe access Drexel's network around the clock. With ContinuStor Director, Drexel was able to trim backup to 1 hour.

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The third phase focuses on disaster recovery. By mirroring its data to the MCP Hahnemann data center, Drexel will have complete redundancy to protect against disaster. Plus, the university can shrink backup even further, from 1 hour to only 10 minutes. "By the end of the year, we'll have lots of fast disk, a backup window reduced from 4 hours to 10 minutes, and mirrored data several miles away," says Blackney.

Creating Value

The OSSI solution is providing Drexel with clear business advantages in five key areas:

Reliability - Drexel's old storage system crashed and lost data on several occasions – an unacceptable situation. Worse, Blackney was unsatisfied with service and support.

With the new solution, says Blackney, only one disk drive has failed in the first six months of operation, with no loss of data. "That's not bad, considering we have a total of 236 drives," he notes. "And the new drive was in our hands within two hours."

What's more, service-level agreements (SLA) ensure that Drexel continues to benefit from the reliability it needs. "We wanted a 'lemon law' that said if the hardware failed repeatedly, they would give us a replacement while they fixed the original unit," says Blackney. "Only OSSI would step up to the plate and promise that."

Availability - The E4400 addressed Drexel's reliability issues. But with only one path to the data, a simple cable failure could still render data unavailable to users.

The SAN addresses this issue, providing redundant connections with no single point of failure. "Even if we cut a cable, we wouldn't lose access to our data," says Blackney. It also ensures better overall performance, and the results speak for themselves: "Before we moved onto the SAN, we heard regular complaints from users about performance," Blackney explains. "But in the months since we've been using the SAN, we haven't had a single complaint."

Disaster Recovery - The "merger" with MCP Hahnemann means that the Drexel data center handles operations for two universities. It also means Drexel can use MCP Hahnemann's data center as a disaster recovery site.

ContinuStor Director enables Drexel to mirror all data to the MCP Hahnemann data center. "Even if we lost [the Drexel] data center, all of our operating data would be preserved," Blackney points out. "While other storage vendors could offer ways of doing that, no one else could offer a single-vendor, nearly transparent solution in which interoperability and support aren't issues."

Integration - The SAN facilitates integration across the heterogeneous platforms of Drexel and MCP Hahnemann. "It also allows us to make changes without bringing the system down," says Blackney. "That's increasingly important, because we have multiple academic calendars to work around – one for Drexel, one for the School of Medicine, and one for the rest of MCP Hahnemann."

Support - One of the key reasons Drexel chose OSSI is because OSSI acts as a single point of accountability. "We were concerned about finger pointing," says Blackney. "We chose OSSI because they promised to take responsibility for any problems. They understood that it's important to me as a customer to avoid a prolonged storage outage."

Blackney concedes that he was skeptical at first. "I was initially concerned about buying from an integrator and not a manufacturer," he says. "But the support has been terrific."

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Continuous Improvement

The SAN handles all of Drexel's business operations. That includes the university's intranet, where students can view classes being offered, register for classes, access grades, and more.

Next will be e-mail. Drexel houses 30,000 e-mail boxes for faculty and students, who each have up to 100MB of e-mail storage. By next year, most academic data will also be on the SAN, including course materials, faculty presentations and student files.

Today, Drexel has 10TB of storage in its data center – 4TB of standalone storage and 6TB on the SAN. "Over time, the standalone storage will decrease, and storage on the SAN will increase," predicts Blackney. "The SAN just makes more sense in terms of performance, reliability and management."

Concludes Blackney: "OSSI understands that a complete storage solution is more than just a disk array. It also includes switches, controllers, the Fibre Channel network, plus the software and management and maintenance. By working with OSSI, we didn't just install a SAN; we implemented an entirely new storage strategy."

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