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## Out with the Old, In with the New

Data center migration isn't for the faint of heart, but with the right planning, it's well worth the effort.

By Karen D. Schwartz

11/11/2010



Photo: Matthew Furman

"We knew we would be spending a lot of money for the data center migration," By Design's Ahmad Shaheen says, "but we also knew that we couldn't grow without it."

As a relatively small women's clothing manufacturer, By Design must be careful with its money. Over its 16-year history, despite significant growth to nearly \$200 million in revenue and more than 100 employees, it has done just that, making do with aging servers and other equipment in its data center. But as the New York-based company positions itself for further growth, Operations Director Ahmad Shaheen has made the challenging decision to spend what it takes to bring the company's data center into the 21st century.

"As we grew, uptime and reliability became more important than ever, but we had a data center full of old servers that had constant problems with overheating and downtime," he explains. What's more, "as we added servers, we were running out of room." Thus came the decision to transform the company's data center into a more productive, efficient, scalable structure.

Those who have been through a data center migration know it isn't easy, cheap or quick. But with the right approach, the right technology and a lot of common sense, it will quickly prove its value.

By Design's migration began with an upgrade to HP BladeSystem c-Class servers and blades, along with virtualization via VMware. For this phase, Shaheen sought redundancy and the ability to reposition servers as necessary to ensure uptime.

In November, the company began upgrading its routers and switches to Cisco Catalyst 4500 Series switches, which Shaheen says will provide better speed, security and stability. Once the networking and servers are in place, the company will install a more reliable and full-featured enterprise resource planning (ERP) system designed for the manufacturing industry, as well as product lifecycle management (PLM) software — components Shaheen says wouldn't have been possible in the old environment.

"We knew we would be spending a lot of money for the data center migration, but we also knew that we couldn't grow without it," Shaheen says. "That's my advice to others: Do the ROI calculations and what-if scenarios, but be pragmatic. The entire cost of the data center can pay for itself if servers are down and you lose business."

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## Focus on Business, Not Technology

Apptix, the largest provider of hosted Microsoft Exchange e-mail, had a different set of challenges when deciding how to migrate its data center to best suit its needs.

Beginning in the mid-2000s, the Herndon, Va.-based company acquired several companies, each with its own data centers, technologies and applications. As a result, the IT department had to think long and hard about the best way to migrate all of its holdings into one cohesive unit.

"We had seven different platforms with seven different billing systems, self-service control panels and other features. It was a nightmare to upgrade and manage each one," says James Bond, vice president of product and software development. "But it was very important to the business that

everything be integrated and manageable. And we couldn't launch new products and services across our customer base without the integration, because we would have had to write code for each unique platform."

Over the past two years, Apptix has worked hard to consolidate its various data centers, with the goal of creating one primary data center in Austin, Texas, and a disaster recovery center with full redundancy in Miami. The company chose to standardize on existing clustered HP server technology, with load balancing from F5 Networks. The infrastructure for firewalls, routers and switches is standardized on Cisco Systems technology, while the storage setup relies on technology from EMC, including redundant CLARiiON CX4 model 480 and 960 SANs, and EMC RecoverPoint for real-time data replication between Austin and Miami. Apptix also added additional circuits and bandwidth between data centers for inter-data center transmission.

In addition to creating redundancy, synergy and better customer service, the migration has paid off financially. Bond says the company saves about \$50,000 per data center per month in bandwidth and data center costs alone (not including cost savings related to personnel).

## Test, Test and Test Some More

For SGI, a sales collateral fulfillment and marketing company in Indianapolis, information access is a competitive advantage. For years its IT team added IBM AS/400 servers to the data center as needed, mainly to support warehouse management and other shop floor systems, but as the company grew, it began to rely more heavily on non-AS/400-compatible technology, such as Microsoft Exchange, Microsoft SQL and Microsoft Dynamics.

"From a budget perspective, it became clear that we were investing in a silo of hardware, software and support for our AS/400 platform independently of the rest of our operating environment," says Forrest Adam, SGI's chief operating officer and CIO. "For [an environment of] our size, it cost \$75,000 to \$110,000 every three years to maintain the AS/400 infrastructure." But the AS/400 technology was important to the company's supply chain and web hosting.

When IBM introduced the AS/400 iSeries blade, Adam knew he'd found his solution. The data center now includes an IBM BladeCenter H chassis with seven HS21 blade servers, one IBM BladeCenter HS12 blade server, and a BladeCenter JS23 blade server running the IBM i and Microsoft Windows operating systems, along with VMware software. In addition, the data center now includes HP core switches and IBM DS4700 SANs.

But that's just one part of the upgrade. Adam stresses that with such drastic changes to a data center, testing of the hardware, networking and applications is critical. "Before every step, we did a simulation that includes a test and migration plan," he says. "It's easiest to do a proof of concept in your existing environment before moving to the new environment so you know what works and what doesn't, and you don't have any surprises."

Although the concept of testing often frightens even data center managers, Adam says it's not so bad if you approach it the right way.

"You don't have to test every application in your software stack. If you had to do that, you would never get anywhere," he says. "As long as you can test your entire server stack and move it, you don't have to worry about the applications, because they are served by the servers. Just make sure everything works at the infrastructure and transportation level."

In a survey of 515 midsize companies, **39%** reported having more than three data centers or server rooms.

SOURCE: "2010 IT Spending Intentions Survey" (Enterprise Strategy Group, January 2010)

## BizTech Quick Poll

What is the greatest benefit to a business when consolidating its data center?

**48%** Easier management  
**38%** Reduced operating costs  
**11%** Increased workload efficiencies  
**3%** Don't know

SOURCE: CDW poll of 354 BizTech readers

## Migration Pitfalls to Avoid

- **Unrealistically assessing your ability to handle the migration internally:** If your IT staff doesn't have the experience to handle unexpected glitches well, acknowledge it up front and look outside the company.
- **Not planning thoroughly:** To reduce risks, interview everyone who will be affected by the migration and use that information to prioritize tasks and develop workarounds.

- **Assuming everything will be done on time:** Despite best intentions, deliveries are delayed, people get sick and problems occur. Build in a lot of extra time.
- **Leaving communication by the wayside:** During something as complex as migrating a data center, communication is critical. That means regular team meetings, status checks and task reviews.
- **Scheduling the migration on a weekend or holiday:** Sure, it impacts fewer people, but if something goes wrong, you probably won't be able to find the right people to deal with those problems.

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