

Grow your data center with colocation

It's quicker and a lot less expensive than building your own facility.

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Brian Burch knew the moment had arrived. Two of his data center's key services -- availability and business continuity -- needed fast and dramatic improvement. Design and location limitations meant that his company's existing data center couldn't be upgraded to the levels necessary to provide the improvements in functionality and performance that he required.

So Burch, senior worldwide infrastructure director of Kemet Electronics, a capacitor manufacturer headquartered in Simpsonville, S.C., decided it was time for his data center to split.

Even in today's challenging economy, enterprises are facing rising internal and external demands for IT services. When an [existing data center can no longer handle an organization's IT burden](#), or when it becomes necessary to establish a secondary site to provide enhanced disaster recovery capabilities or regional network support, an important decision point has been reached.

For a number of enterprises, the obvious solution is to add another data center, and for many of those it means partnering with a colocation service provider instead of building a new facility of their own.

If you're considering colocation -- or colo, for short -- it's essential to do your homework, experts say. "You absolutely need to do the buy-vs.-build analysis," says Jeff Paschke, an analyst at Tier1 Research. But having said that, he suggests that "buy" may often be the best choice. "I am a former enterprise data center manager, and from what I know now, more should be using [colocation facilities]," he says.

Financial considerations may play the biggest role in colocation decisions. "Do you want to go to your board and ask for \$50 million in capex [capital expenditures] for another data center?" Paschke asks. "The alternative is to go to a provider and use opex [operating expenses] and not have to spend money upfront."

Given the massive investments of time and money required to build a traditional data center, "fewer organizations are deciding to build their own satellite data centers," says Lynda Stadtmueller, a data center analyst at technology research company Frost & Sullivan.

In a trend that's especially prevalent among operations that use time-sensitive applications that require a local presence, more and more organizations are leasing space from a colo or hosting provider rather than building and managing their own data centers, she explains.

Outer Limits

Most organizations begin thinking about adding a data center as soon as their existing facility starts maxing out its physical space or support resources, Stadtmueller says. "Once you see you're beginning to run out of space, run out of server capacity, [or] when you're looking to add or upgrade an application, that's when you begin to look outside."

Sometimes the push comes in the form of a business need -- a new initiative that, for instance,

requires a lot of extra computing capacity, or enough to force your existing data center to use a lot of extra electricity. Power is usually the gating factor in many older data centers: Enterprises tend to run out of power options long before they run out of space.

For many organizations, the idea of building a second site often arises from a desire to create, enhance or cut the cost of a business continuity strategy. "With our new site, we really wanted to improve on the [recovery] time from any kind of failure," Burch says. Kemet also wanted to get out of a costly relationship with a disaster recovery services provider, he adds.

Licking Latency

Another motivation for creating a new data center is to boost system responsiveness for employees and customers in remote locales. Organizations running latency-sensitive network applications -- those that power retail and travel websites or financial services, videoconferencing and content distribution systems, for example -- usually like to place their applications as close to end users as possible to improve response times. By splitting a data center into two or more sites, an organization can more efficiently serve people scattered across a wide area -- even if they're on multiple continents.

Dayton, Ohio-based LexisNexis, known for its legal research and workflow services, decided in 2009 to establish a colo data center in Scottsdale, Ariz., to better serve customers from a location that's relatively immune to storms, earthquakes and other natural calamities. "We wanted something that was in the western region of the U.S.," says Terry Williams, the company's vice president of managed technology services. "Location was a huge part of our decision." The company already had a data center in Dayton.

Not surprisingly, network availability and performance were essential considerations for LexisNexis as it went about choosing the new site. "The key for us is network connectivity," Williams says. "That was something that couldn't be compromised on."

LexisNexis is hardly the only organization that wants to set up data centers closer to end users for better service, says Darin Stahl, a data center analyst at Info-Tech Research Group. "There's a definite move toward decentralization, and that's helping enterprises that want to open additional data centers," he says.

Williams says that turning to a colocation provider -- Phoenix-based IO Data Centers, in his case -- didn't require LexisNexis to compromise on any services or amenities. "We expected all of the normal things that a high-tier data center would have in terms of backup power, generators and all of those things, as well as network connectivity," he says.

Primer

Colo 101

By one analyst's count, there are more than 400 providers of colocation services offering a huge range of options and prices.

Colocation is different from traditional hosting, which IT folks may be more familiar with. In a hosting situation, usually the service provider owns the hardware, software and other infrastructure that serve up your applications. Providers can specialize in different types of services -- application hosting, website hosting, database hosting and the like. In contrast, colocation customers own their servers,

routers and other hardware and often have their own employees tend to this gear.

Some colo providers specialize by going after small and midsize businesses, financial services firms or other categories of customers.

There are two general types of colocation providers: wholesale and retail. Wholesale colocation providers maintain large facilities -- big enough to handle 10,000-square-foot data centers, for example. Except for the power and cooling infrastructure, it's essentially empty space. The customer, or tenant, does the work of rolling in the servers and racks, cabling up the gear and making sure it all works.

On the retail side, spaces are usually smaller -- down to "cages" that hold individual servers, for example -- and the vendors offer more setup help, for a price. In general, says Jeff Paschke, an analyst at Tier1 Research, you can expect to pay more for retail colocation than a wholesale offering.

Also, be on the lookout for the ever-present upsell. Darin Stahl, an analyst at Info-Tech Research Group, says many vendors are eschewing "straight" colo and will provide only managed services, where the vendors service and support the customer's equipment. They do that because managed services can yield margins of "at least" 25%, he explains.

The bottom line is this: Make sure to look for a colo partner that's going to give you what you want -- no more and no less.

— *Johanna Ambrosio*

For his part, Burch feels that using a colocation service -- Kemet Electronics chose Columbia, S.C.-based Immedion -- allowed a faster, less costly deployment without sacrificing convenience or functionality. "We were able to get everything set up within a two-month period, and that included the building out of office space, even converting some office space into raised-floor data center space, which is pretty amazing."

Finding a suitable colocation provider can be just as challenging as scouting a site for a traditional data center. "We looked at taking a building and converting it ourselves," Williams says. After deciding that overhauling a stand-alone building wouldn't be cost-effective, LexisNexis started looking for a colocation provider. "I would say that we probably spent six months searching for a site, and we probably looked at no less than 30 different locations and providers -- it was a very extensive search," he says.

Space at a Premium

Of course, colo space can be tight in some locations, so expect to pay a premium in those areas. Tier1's Paschke explains that the economic slowdown and resulting credit crunch put the kibosh on a lot of data center capacity build-outs. Many enterprises put their own data center construction plans on hold, and colos reined in their expansion activity as well. So nowadays, organizations considering turning to a colo may find that the vendors don't have as much data center space as they need.

Of course, the market for data center space varies from location to location. A recent Wall Street Journal article, for instance, talked about an oversupply in the New York-New Jersey area. In general, though, many analysts say there's an undersupply of colo space in key locations.

One reason this is important is because some shops opt to have their second data center near their main facility so they can stay close to their gear. Paschke calls the people who run these

shops "[server huggers](#)" -- IT executives who want to be able to reach out and touch their servers, even though the goal in most data centers is to automate much, if not all, of the systems management. If your main office is in a high-demand area, it might be difficult to find a nearby colo facility.

More factors to think about when going colo include deciding upfront what you're willing to pay for. Some customers need mega-bandwidth for instant response times and require stringent service-level agreements, and some choose to have telecommunications links to several providers for backup purposes, in case one telecom vendor goes black. Others aren't so concerned. "Some people don't care; milliseconds don't mean that much to them," says Jonathan Hjembo, senior analyst at TeleGeography Research. "Customers just need a ridiculous amount of different things," he notes, adding that such diversity is pushing the market forward.

Other considerations include security -- both physical and virtual -- and backup infrastructure, including power, cooling, fire suppression and the like. Customers also need to discuss their future needs with their would-be colo partners, to make sure the vendors will have enough space for the customer's anticipated needs for the next few years. And be sure to do a financial analysis.

Staffing Issues

When somebody mentions "colocation," a lot of IT staffers hear "outsourcing" -- and naturally begin to worry about losing their jobs or influence, analysts say. "People are resistant to change," says Tier1's Paschke.

If you choose to go the colo route, your staff will probably need some time to get comfortable with the idea. Info-Tech's Stahl suggests an evolutionary approach in which you begin by using a colo facility as a backup data center and later use it to handle more critical, first-tier kinds of hardware, storage and applications. "Once that happens, customers start to wonder whether it's the best use of a server admin to go to the colo facility and mess around in the cage for a day," he says. At that point, the company may be ready to consider managed services for some of its IT functions.

A staffing issue that's often neglected until the last minute is the need to hire qualified people to work at a secondary data center, says LexisNexis' Williams. Sometimes enterprises opt to use the colo vendor's on-site experts, but other times they simply lease space within the facility and staff it themselves.

"Obviously, you're going to do local hiring," Williams says. But he notes that a remote data center has different staffing needs than a primary site. Since secondary data centers generally don't have as many management and administrative jobs as main sites, hiring tends to focus on technical individuals who can easily move between multiple tasks. "You want a small staff that can actually do a number of different things," he advises.

Still, Williams notes that LexisNexis had no shortage of Dayton data center staff members volunteering to transfer to the new location. "If it's in a nice location like Scottsdale, everybody is raising their hand to move out there," he says.

For most enterprises, adding a colocated data center is usually a significantly easier task than creating a primary site from scratch. In most cases, established platforms and practices can be replicated fairly painlessly at the new location. Kemet used its main data center as a staging area for the new site.

"To ease the transition, we actually built all the new equipment in our primary data center," Burch says. "We synchronized all the data that was going to be replicated at the new site and conducted

some tests to make sure everything was going to work the way it was supposed to." The equipment was then transported to the new data center. "We then simply turned it on and just let it catch up on what it had missed in the eight hours it had been in transit," Burch says.

To complete the job, the Kemet team conducted a series of tests to make sure that the new business continuity system would work flawlessly. "Once we had confirmed that, we basically declared it in production and then, a month later, we let our traditional [disaster] recovery contract expire," Burch says.

Planning carefully and paying close attention to detail are vital to a successful deployment, Burch says. "Most of all, look carefully at any contracts that might be involved with the new data center, particularly any disaster recovery or hosting contracts," he advises.

LexisNexis' Williams says that finding a competent and trustworthy colocation partner is essential to the success of a secondary data center, since the provider will be responsible for delivering essential infrastructure services, including power and cooling. "The key thing," he says, "is to find a partner that can provide what I would consider to be that intimate level of service -- meaning that you feel that you're the only client there."

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