

Know Your Building Needs

What To Look For When Seeking A New Data Center Building Or Land Site

by Christian Perry

JUST AS YOU WOULDN'T throw a fine-tuned automobile engine into an old jalopy, organizations aren't likely to move new or existing IT architecture into a decrepit, poorly equipped building. But even if your intentions are good when seeking a new data center building or land site location, it's easy to overlook key elements that could mean the difference between an efficient, well-running environment and an enduring nightmare. However, by covering all the primary bases in your search, you can ensure your new space will be the right space.

"In my experience, evaluating data center locations is a multi-disciplinary corporate effort," says Brian Greenberg, founder of General System Dynamics (www.gsysd.com). "It is important to include input from IT, corporate real estate, the system owners, and other key constituents. The selection process should consider a series of factors."

Know The Area

Selecting a location for a new data center or land site isn't just about proximity to enterprise headquarters. Experts recommend avoiding natural disaster areas, because if you decide to buy or build in a risky location, you're simply inviting potential trouble. For example, Greenberg helped evaluate sites for a company based in the Seattle area that required a remote location for data storage services.

"We found several sites that fit most of the requirements, but none were perfect," he explains. "One of the requirements was to have the facility outside of the Seattle-area fault zones by going east of the Cascade mountain range but being within a few hours of Seattle, particularly to address the event of an earthquake or volcano eruption. The one site that we were able to identify had a very low impact effect of an earthquake and a moderately low effect of a volcano."

However, he adds that there were problems finding anyone to staff this facility because it was so remote, so a new site was found that had an acceptable risk tolerance without sacrificing adequate staffing. Other issues also affect data center site selection, including total cost of ownership, the robustness of the regional electrical center grid, time to market, and latency issues, says Ham Southworth, a corporate managing director with Studley (www.studley.com). As such, most companies focus on big-ticket items such as power costs, incentive packages, tax

structures, grid configuration, power availability, and location, he says.

Power, in particular, has become a top-line concern for organizations looking to build new data centers. Greenberg recommends ensuring good access to power and telecommunications infrastructure, which comes from good physical access to disparate power and telecommunications paths so there is physical redundancy in both power and telecom capabilities. He also recommends that organizations seek inexpensive power sources.

"Power consumption is one of the largest operating expenses of a data center," Greenberg says. "Different regions of the country will have significantly different pricing, dependent upon those energy sources such

as coal burning, nuclear, or hydro-electric. Additionally, some companies choose to have their data centers in cooler climates to take advantage of the naturally cool air to help reduce energy costs."

Consider Physical Access

Plans for a new data center are never complete without accommodations for physical access and current and future capacity requirements. For example, Greenberg says there must be adequate ability to bring in large industrial equipment easily via loading docks and freight elevators to avoid cutting holes in walls to bring in equipment—even via helicopter to the top floors. Floor loads also must be able to accommodate increasingly dense computer equipment.

"Some time ago, I was able to evaluate a new high-density data storage array that we were very excited about," Greenberg relates.

Don't Overlook Taxes

A location might have the perfect mix of resources for your new data center, but it's easy to overlook sales taxes and personal property taxes when considering locations, according to Ham Southworth, a corporate managing director with Studley (www.studley.com). These factors can play a huge role in a data center's total cost of ownership and should always be included in the planning.

"A \$50 million data center typically has \$100 million in servers, which must be replaced every three to four years," Southworth says. "Every 1% of sales tax means \$1 million more in costs every three to four years. Given the value of this equipment, property tax millage rates and computer equipment depreciation schedules also have a material impact on costs."

Key Points

- Experts recommend avoiding areas prone to natural disasters when choosing a site for a new data center or land acquisition.
- Researching the local power and telecommunications infrastructure and availability is key to ensure these resources will meet your needs.
- Never assume that the physical access and capacity of a new data center will accommodate anything you need now or might need in the future.

"We had a very modern and fairly state-of-the-art data center in our downtown office building, but once the array arrived, our facilities manager wouldn't allow us to bring it in the data center because it exceeded the floor load capacity."

Along with floor load requirements, organizations should also keep space requirements in mind when considering a new data center. Greenberg says that some customers need only part of a rack, while others will need an entire rack or a cage space, while still others will need entire floors for expansion and growth. To help properly gauge your needs and anticipate growth, Greenberg recommends that IT, corporate real estate, and human resources work closely together to establish the requirements.

Know Your Business

According to Greenberg, an organization needs to first know its business before considering a new data center or land site location. At the beginning, it's wise to team with the disaster recovery coordinator, who should already have a business impact analysis completed that details the requirements of the availability for systems that help drive the business. He notes that these requirements will set forth the minimum availability requirements for choosing the best data center site and establishing the baseline architecture moving forward. Also, it's best to seek the input of all system owners, including server administrators, storage and backup administrators, networking teams, and operations staff.

"Keeping them actively involved will make transitions to—and within—the data center and management of your computer resources efficient and provides a sense of involvement within the organization," Greenberg says. "You must [also] keep the legal department informed of your plans. There may be legal issues with international law, privacy, and security by housing data in other countries or even other states within the United States."

Finally, Southworth advises creating a checklist that includes issues such as the presence/absence of natural and manmade hazards; the availability of incentives, tax credits, or other financial benefits; the proximity to labor markets and transportation links; and site scalability. "[The] checklist thus becomes an invaluable tool that allows our clients to compare various sites using apples-to-apples criteria selected and weighted by them," he says. ■

Ovum Survey Reveals Cloud Uncertainty Among Government CIOs

Although cloud computing is being received positively by more and more enterprises, there is still a pocket of CIOs in the government sector that don't necessarily believe cloud-based data centers will save money in the long run. In fact, according to a recent report released by research firm Ovum, 46% of U.S. government IT officials don't think moving to cloud computing will save them enough money to be worth the investment.



"The move to shared services does involve upheaval and invariably means changing software applications, which in turn can require system and data migration and all the complexity this entails," said Jessica Hawkins, an analyst at Ovum and author of the report, in a release from the firm. "Many agencies have the perception that there is not enough money to be saved to make this worthwhile."

Behind The Reluctance

The report, titled "Cloud Computing in the U.S. Federal Government," surveyed a sampling of CIOs and found that a number of cloud concerns still persist in data centers. Chief among them—listed by 68% of respondents—is the fear of giving up control over business functions by hosting processes in someone else's data center. Another major stumbling block is CIOs' loyalty to their own work and existing systems.

"Changing the dynamics of service delivery is an emotive issue for public sector bodies and can cause them to fear that they are losing control of their key business operations," Hawkins said. "This is compounded by the prospect of job losses and the legal complexity of transferring staff to a shared services model."

The CIOs' reluctance to move to the cloud stands in contradiction with recommendations from U.S. CIO Vivek Kundra (who, incidentally, announced late last month that he will be leaving his CIO position to take a fellowship at Harvard University). Kundra testified before the Senate Committee on Homeland Security and Government Affairs that he believes a government-wide move to cloud computing would save taxpayers about \$5 billion per year in procurement savings and gains from better efficiency.

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