

Simplified Data Center Construction

Keep Your Construction Project From Becoming Too Complex Or Too Costly

by Cynthia Harvey

ALBERT EINSTEIN ONCE SAID, "Everything in life should be as simple as possible, but not more simple." That advice is particularly appropriate for companies that are beginning the process of designing and building a new data center.

Constructing a new data center is complicated. You have to find the right site, make sure you have sufficient power and bandwidth available, plan for adequate cooling, and find the best technology for your needs. You have to plan to deal with disasters and security threats. And you have to do all this while accurately predicting what you'll need in five or 10 years and while keeping costs under control.

The process can quickly become overwhelming for small to midsized enterprises that don't build new facilities very often. However, experts offer a few tips that can help simplify the process and reduce both your short-term construction

Key Points

- Many data center construction projects become more complicated than they need to be because companies haven't adequately budgeted for the project.
- Experts recommend that companies plan to grow their data centers incrementally with a modular approach.
- Standards-based solutions are generally easier to manage and less costly than their proprietary counterparts.

costs and your long-term costs for operating the data center.

Start With A Reasonable Budget

One of the quickest ways to complicate a data center construction project is to budget too little money. Steve Borley, vice president of sales and

marketing for Data Specialties (www.dataspecialtiesinc.com), a data center design and build firm, says the most frequent mistake that he sees is "lack of capital investment and lack of review of return on investment."

When companies don't budget enough money for the data center, they sometimes cut corners or make poor decisions that end up costing far more than they saved. "We find people sometimes don't have the budget to build the data center correctly, and later on, once they've built the data center, they don't get the performance they were hoping to get out of it," Borley says.

Carlton Griffis, senior product manager for data center design and construction company Alcatex (www.alcatex.com), explains that businesses are accustomed to estimating construction costs based on the number of people in a facility. But because of the special requirements of a data center, companies that try to budget this way often find that they only have "about a tenth of what they need," Griffis says.

Do Your Homework

Like insufficient funding, insufficient understanding and insufficient planning can also lead companies to make mistakes that increase complexity and expenses. Before you begin a project, "do your own homework," Borley recommends. "Don't rely on contractors and engineers to know everything."

Doing your homework is particularly important when it comes to site selection. "The No. 1 mistake that we see is, unfortunately, lack of due diligence," Griffis says.

That due diligence involves first properly estimating your future needs for power and bandwidth. Rudy Rangel, senior account manager at Rackmount Solutions (www.rackmountsolutions.net), recommends that companies plan for what they think they'll need and then add a little bit more to their projections.

Second, companies need to make sure the local utilities and network providers

can actually support those future needs. If not, they need to select a different site for the data center.

Plan Ahead For Modular Growth

Taking a modular approach means having an orderly plan for expanding your data center. That could mean buying actual prefabricated, self-contained modules or it could simply mean having extra space, bandwidth, and power capacity that you can turn on when you need it. In either case, a plan that allows for scalability greatly simplifies matters when the company experiences growth.

"Focus on a modular, scalable solution," Borley advises. "Make the room easily expandable, make the UPS service easily expandable, make the mechanical system easily expandable. The last thing you want to do is build a data center and then have to turn it off, causing major disruption, in order to expand it."

Rangel echoes that advice, recommending that companies decide on a yearly budget for adding capacity to the data center. However, Rangel notes that it's equally important to stick with the plan. If you have empty space in your data center that's set aside for future server cabinets, "don't let stuff pile up in it," he says. He adds that his company frequently hears of data centers where empty space has been filled with filing cabinets or desks. Then, when it comes time to expand, the company has to head back to the drawing board.

Stick With Standards

One final way to simplify the plans for your new data center is to adopt standards-based technology. "One thing we preach strongly is 'Stay away from proprietary products,'" Griffis says. "Don't get caught up in the trends. Stick with the proven technology, regardless of the manufacturer."

Standards-based solutions are generally easier to manage and maintain. They also usually cost less and give companies the option of sourcing products from more than one vendor. ■

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Lowest Price vs. Best Value

If you're building a new data center, it can be tempting to select the lowest bidder or the lowest-priced equipment. But despite its appeal, that approach can be more costly in the long term, experts warn.

Steve Borley, vice president of sales and marketing for Data Specialties (www.dataspecialtiesinc.com), says, "Because of the recession, we've seen an awful lot of general contractors say to clients that they can build a data center and then find it's a little more difficult than they had first anticipated. So they—the customers—end up being charged far more than they had anticipated, and far more than a data center expert would charge them."

Rudy Rangel, senior account manager at Rackmount Solutions (www.rackmountsolutions.net), says that companies also frequently make the same mistake when it comes to purchasing equipment for the data center. For example, companies will buy the cheapest racks for their servers, only to find that they don't hold up and need to be replaced within a couple of years, costing more than if they had purchased a high-quality rack in the first place. "The best bang for the buck is what you need in a data center," Rangel says.