



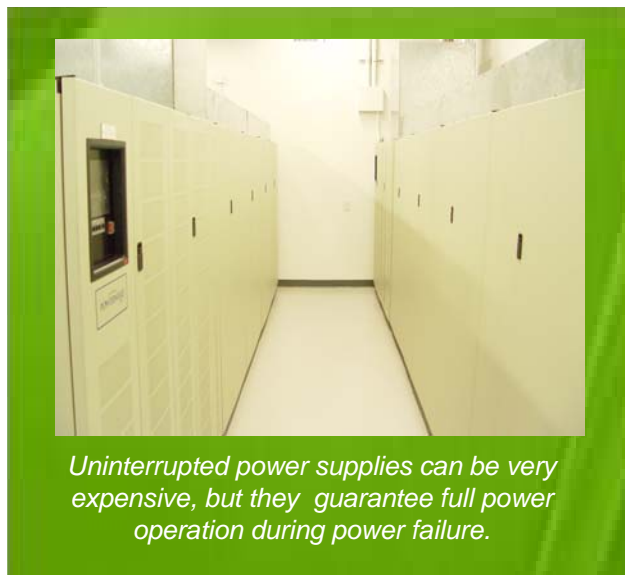
Disaster Recovery, Power among Crucial Data Center Issues for 2007

Regulatory compliance also can't be overlooked by enterprises at a time when storage, protection of information is becoming more important.

By: Rich Lee, Founder and CEO, Hosted Solutions

The rise in technology and a changing corporate landscape have presented data center operators new challenges. Operating a Data Center not only requires a comprehensive skill set, but also a little forethought into the overall industry

landscape. Based on discussions with our clients and our ongoing reviews of laws and regulations pertaining to the data and networking industries, we have identified five issues IT managers must consider to ensure smooth data center operations in 2007. Regulatory compliance, disaster recovery/business continuance, power, cooling, and IT as a service will be dominant themes in the coming year as companies work to manage their IT assets to support business goals. Every business relies on information technology, but managing that technology to extract the best return on investment is a complex task. Most line of business managers take for granted 100 percent IT uptime, instant access to trained support personnel, uninterrupted access to data, and are dependent on top-flight management of IT assets in data centers. In-house data centers can be a business's weak link if proper attention isn't paid to power use, cooling capacity, disaster recovery preparedness, running IT to support compliance initiatives, and staffing flexibility to support utility computing initiatives.



Uninterrupted power supplies can be very expensive, but they guarantee full power operation during power failure.

These five issues are checkpoints that businesses looking to outsource their IT services should be aware of:

Compliance – Recent changes to the Federal Rules of Civil Procedure put IT on the front lines for ensuring a business is complying with regulations, notably Sarbanes-Oxley and HIPAA. Not only is it necessary to store key data for longer periods, but being able to retrieve information at a granular level – right down to specific emails – is now an IT responsibility, one that if not handled properly could result in a vacation with the local municipal system.

Disaster Recovery – Statistics are abound about the harm done to businesses by data loss in a disaster, with one report from Eagle Rock Alliance suggesting that nearly 50 percent of surveyed companies report each hour of downtime could cost up to \$50K. Beyond backup and recovery protection, ensuring maximum data center availability and uptime is clearly crucial to a business's success. Business Continuity seldom goes beyond the planning stage at most companies, however, until downtime or data loss hit.

Power – Power continues to lead as a concern for data center operations. Data centers are designed to a specific power density - watts per square foot – with a typical cabinet of equipment occupying 14 sq. ft. of space. Per-cabinet power consumption has steadily increased over the past several years as pedestal servers drawing 1KW/rack have given way to 1U/2U pizza box servers at 3.5KW/cabinet and blade implementations at 10KW/cabinet. Faster CPUs, larger memory chips, and smaller disk drives also continue to increase power demands.



Disaster Recovery, Power among Crucial Data Center Issues for 2007 Continued

Per-rack power requirements constrain the number of racks a data center can support. A typical 10,000 – 20,000 sq. ft. facility designed for 50 – 100 watts/sq. ft requires ½ megawatt to 2 megawatts of power. Availability and cost of utility power in the megawatt range is expensive and difficult to obtain. Supporting infrastructure such as generators, automatic transfer switches, uninterrupted power supplies, and distribution equipment can also be very large capital expenditures. Careful planning and growth projections must be maintained to ensure power requirements can be met.

Cooling – Approximately half of the power consumed by a data center is required for cooling. As heat load increases, more floor space must be reserved for cooling equipment. Without high ceilings (20' or more), the hot exhaust air of servers is likely to become in-take air for servers mounted in the upper portion of a cabinet. How exhaust air is returned to the cooling units within the data center is as important a consideration as the distribution of cool air to the servers. Hot aisle and cold aisle techniques must be extended to include evaluation of airflow dynamics. At higher power densities the amount of space required to house cooling equipment will overtake the number of cabinets. Alternate approaches, or a reduction in the amount of equipment housed in each cabinet, must be considered.

IT as a Service – Clients will continue to leverage the compute and storage infrastructure Managed Hosting operators have made large investments in, and derive

increased cost savings and benefits by utilizing shared, highly available infrastructure.



Cooling towers are a critical component of a data center's cooling infrastructure.

