The next big thing in data centers

We must keep on top of the latest trends and technologies to ensure that we provide high value to data center clients.

The next "big thing" in the mission critical market will be evolution of data center infrastructure management (DCIM). Much of what we call DCIM today is comprised of discrete systems for electrical monitoring, airflow simulation, load and server tracking, and the native knowledge of data center operators.

Today's data centers are no longer just a part of day-to-day business; they provide companies with a competitive advantage. DCIM can be leveraged to increase efficiency, utilization, and availability of data center assets.

While both IT and facilities have invested in resources to manage these facilities, they typically do not work collaboratively to achieve the promise of DCIM. The components of a good DCIM system include:

- Real-time data tracking to determine the true capacity of the data center "real time"
- Identifying the important interdependencies between logic and physical layers
- Holistic management capabilities
- Visibility of IT and facility infrastructure
- Good visual views and guidance on design changes
- Change management.

The cutting-edge and future of DCIM embraces all of these separate pieces of information and integrates them into a single integrator. The DCIM systems available today can allow the data center operator to actually use critical separate pieces of information for the following functions:

- Load monitoring
- Asset management
- Load balancing
- Power usage effectiveness (PUE) analysis
- Future scenario analysis
- Dependency analysis
- Failure and recovery analysis
- Workflow management
- Security.

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There needs to be a closer association between designers, facility managers, and IT personnel in order to reap the benefits of true DCIM. Data center strategies in the past were fairly simple. Mission critical facilities' lifecycles are approximately 15 to 20 years. As IT and business strategies evolved during this time, data center infrastructure management has historically been a slow-moving objects. Good planning software tools typically perform the following:

- Display the pending impact of moves, adds, and changes
- Give graphic location of IT equipment in the rack
- Make recommendations for future racks and servers
- Simulate the failure of power and cooling components
- Provide management of rack and floor tile weights
- Simulate cooling scenarios with computational fluid dynamics (CFD).

DCIM includes the management of IT systems. These components include servers, network systems, and storage. The critical management tools include inventory management, asset management, change tracking, workflow tracking, dependency analysis, feasibility analysis of anticipated facility modifications, and future scenario analysis.

The traditional method of planning and crisis prevention has historically been based on manual calculations and tribal knowledge and is not effective or reliable. DCIM is a great modeling tool for possible failures and can simulate how the it will react to electrical and/or mechanical component failure and the interdependencies between the systems.

A good, well-integrated DCIM system can allow mission critical facility managers to reduce energy usage and costs. As mission critical facility engineers and designers, we must keep abreast of the latest trends and technologies in order to ensure that we provide the most value to our clients. **|cse|**

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