Data Center World Attracts Global Interest

by Phil Britt

IT professionals crowd into Orlando to capture a sense of emerging data center trends, listen to industry leaders and learn from their peers.
While the rest of the world was still coping with the global recession, hundreds of AFCOM members from every continent traveled to Orlando to hear the latest industry trends and associate with their peers at the Data Center World fall conference, Oct. 4-7. "AFCOM has endured a number of economic cycles, including the aftermath of 9/11, in its almost 30 years in business," said Jill Eckhaus, AFCOM CEO. "While attendance at this conference dipped below last year's record level, conference participation remained strong because members recognize the value of these educational events."

This was the first conference for Bernard Scheckelford, operations and data center manager for Lockheed Martin, King of Prussia, Pa. He attended sessions on virtualization, consolidation, efficiencies and hardware systems. His conversations with others were invaluable, and he said the strategies he learned would help make his data center more efficient.

In her opening conference remarks, Eckhaus talked about the power of peer education and utilizing AFCOM's membership services. "Technology makes our lives easier. Only this isn't necessarily true when it comes to managing the data center. In fact, I'd be so bold as to say technology has made your life harder. Over the past few decades your role as a data center management professional has changed dramatically," she said, pointing to the evolution from mainframes to today's environment of multiple servers, the Internet, hackers, power issues and budget constraints.

"The answer to this conundrum is peer education. Sharing information with your peers is by far the best way to overcome your problems," Eckhaus said. She encouraged the more than 600 attendees to share their experiences during the conference and learn from one another.

Mark Duplessie did just that. He is the data center manager and director of corporate real estate and critical infrastructure for the Phoenix office of Charles Schwab. He said the conference provided a way to stay in touch with industry developments. "I attend one event a year to keep a pulse of what is going on," said Duplessie. "I attended the facilities track."

Keynote speaker Andy Parham, CEO of the Bick Group, introduced the idea of the value curve during his address. The Bick Group leads more than 1,000 private and third-party data center improvement projects each year by helping managers improve balance sheets, control expenses, improve energy efficiency, manage capacity and outline disaster plans.

The centerpiece of the improvement projects is the concept of the value curve. "The value curve maps the ideal infrastructure for each major application," said Parham. "This tool, which we adapted from the business strategy world, is a powerful interpreter for the business and IT. It force-ranks a series of data center attributes, including availability, resiliency, responsiveness, security, scalability, sustainability, capital intensity and operating costs and frames up the ideal profile for each application category."

Case Studies

Virtualization and consolidation were among the most popular topics at the conference, which included 62 education and product information sessions, tutorials and virtual tours. At the spring conference, attendees voiced an interest in hearing more case studies and how real-world managers coped with their situations. As a result, six case study scenarios were added to the fall conference schedule.

IT Manager Joe Ng shared his motivation for implementing a lights out strategy in Vermont's department of information and innovation. He is being asked to deliver more, improve efficiency and reduce costs. "We are working on many initiatives, such as server virtualization, equipment modernization and consolidation of services," he said. "Next evolution in data center management is a lights out facility."

"Also, in the area of data center automation, we can reduce energy consumption, improve security, lower labor costs, lessen geographical dependence, better allocate IT talent and reduce space needs," said Ng.

In his case study presentation, Jack Schwab, an IT infrastructure practice leader in Seattle, discussed the role leadership played in the successful migration of a data center at Point B. "About one-quarter of the way into the project," he said, "the executive responsible realized that the technical teams lacked common vision, requirements and timelines." The migration would not meet its objectives unless these teams operated as a cohesive unit.

"The project was reorganized so that there was an executive sponsor, a project sponsor and a project leader," said Schwab. "The project leader provided clear and actionable direction to the technical teams, held individuals accountable, identified critical faults and acted as both a friend and a devil's advocate." The project leader communicated with all levels in the organization and the project was completed with a minimum of downtime.

Six round-table sessions led by a panel of experts in an open-forum style helped to facilitate frank discussions. They ran concurrently with conference educational sessions. Topics included maintaining efficiency during a recession, what people should know about going green, virtualization, backup and recovery, storage management and how to get involved in a local AFCOM chapter.
Popular Sessions

Among the most popular sessions was “Best Data Center Practices” presented by Mark Levin, senior partner, Metrics Based Assessments LLC, a firm that does data center benchmarking and feasibility studies.

“Data center and server consolidations are major trends,” Levin said. Yet most data centers do not have the physical infrastructure required to support new hardware technology. In many cases, particularly in those where the data center is in an office building, there is not adequate space to meet current needs or for future expansion. Even if more space can be acquired, the site configuration may not allow for the air flow necessary for additional cooling. Some data center managers dealing with these obstacles do not have the budget to build a new data center, so they move into colocation facilities, said Levin.

Another data center best practice is the concept of centers of excellence to support key processes, (e.g., SAN management). “For years, data centers were organized based around platforms (Unix, Windows, Linux). Now best practice data centers are organizing around specialities like storage, which is done across all platforms. If you do something consistently, you tend to get good at it,” said Levin.

“Data centers are increasing capacity and workload but are not adding staff,” he said. “As a result, a number of data center functions are understaffed.” Adequate staffing leads to better automation and better efficiencies throughout the data center.

Data center managers would see this correlation between staffing and efficiency of the overall operation if they had better monitoring. But in examining data centers, Levin has found very few have adequate reporting systems. “Data center reporting and metrics are critical to operations excellence. But most data centers do not have a comprehensive measurement program.”

Matt Lane of RLE Technologies, a firm that provides Web-based monitoring systems, agreed that many of today’s data centers do not have adequate measurement systems. “A lot of people talk about it, but they’re not sure what they should be monitoring,” said Lane, who discussed data center infrastructure best monitoring practices in another popular session. “It all comes down to reducing downtime. In most businesses, 98 percent uptime would be great.”

But a data center that has a 98 percent uptime will lose millions of dollars, according to Lane. The actual amount of money lost depends on the industry. The industries with the most costly downtime are supply chain management ($11,000 per minute) and e-commerce ($10,000 per minute), said Lane.

Even 99.999 percent uptime means a data center will be down more than 30 minutes during the course of the year, which can be quite costly. To reduce downtime as much as
possible, Lane recommended that data center managers become proactive in their monitoring.

“There's been an evolution of monitoring systems in the last few years,” Lane said. “It used to be you didn't have any information until an alarm went off. Now there are additional sensors and remote monitoring that alert you when systems hit certain thresholds so that you can be proactive in managing systems. We're just now moving into predictive monitoring that identifies the root of the problems and tells when you will run out of capacity, cooling, etc. That can give you forewarning and foreknowledge that will enable you to reduce downtime.”

Too much monitoring can lead to too many data points to be meaningful. Data center managers should develop a set of key performance indicators for their data center and monitoring systems capable of tracking them.

Better monitoring is also necessary to limit fires and related damage in data centers particularly now that many of them are unmanned, said Scott Wilson, director of market development for Xtralis, Norwell, Mass., who discussed best practices in data center fire protection. Fire damage is hard to detect, particularly the damage that comes from smoke. Additionally, new hot and cold aisle configurations mean that systems may no longer be as close to fire suppression systems as they should be.

To better detect smoke and related damage, Wilson recommended that data centers use newer monitoring systems that can detect even low levels of smoke.

Monitoring needs to evolve because data centers continue to evolve. This trend was discussed by Mark Evanko, principal engineer for BRUNS-PAK, Edison, N.J. Data centers are getting more complex with the integration of computer hardware, software, telecommunications and facilities, said Evanko. “Combined with that, you have greening. By being green, you're not only being friendly to the environment, but you're also saving dollars for the company.”

The greening effort goes hand-in-hand with the deployment of the higher density computing trend, according to Evanko. “High-density computing increases electrical demand and corresponding airflow and static pressure requirements. With increasing electrical demand, you want to deploy the power in the most economical manner. Data centers historically have not been energy conscious.”

Energy consciousness is not only popular from an environmental standpoint, it is necessary from a business perspective. “There are four major components for data center efficiency: computer hardware, software, telecommunications (both data and voice) and facilities infrastructure. Data center managers used to just look at watts per square foot; now they have to look at all of the hardware and software,” said Evanko.

The evolution theme continued in the popular "Build for
Today and Expand on Demand” session when Andy Hungria, an application engineer for EATON, Raleigh, N.C., told the audience to build and consider a data center as an evolving organism. “You have to plan for systems and adding systems at different times,” said Hungria. “This is a way to give yourself more time. Once you have more demand, then you can add through modular components.”

Hungria recommended considering the data center as an outer shell. The floor space should be divided into a zone for immediate use and areas for future use. In addition to limiting the initial cost outlay for building the data center, this approach also enables a company to expand with more efficient, more powerful systems when they become available in the future rather than adding unneeded hardware now that would be inefficient based on future standards.

Hungria likened the development of a data center to that of a blade server, which adds more capacity (blades) as necessary. “People have overlooked how quickly data centers have evolved,” said Hungria, pointing to the development of more powerful, but more power-hungry computers.

Attendee Response
Thibaut Simeon designs data centers for Critical Building in France. He is intrigued by the thought processes of Americans. His colleagues in France approach problems differently than do Americans, and he enjoyed the opportunity to compare the two methods. He traveled to Orlando to “smell the trends” and learn what is happening in the United States so he can anticipate what will be coming to France.

Carl Shelton is facility manager for Maui High Performance Computing in remote Kihei, Hawaii. He is building a new data center and went to Orlando to obtain the latest information. He attended the tutorials and virtual data center tours, which triggered thoughts in his mind that he had not previously considered. He was also impressed with Eaton’s UPS.

Jiro Fukuda, chief researcher and senior planner for Mitsubishi Research Institute in Tokyo, Japan, was mostly interested in green technology and cloud computing. “I can read everything in Japan, but it is very static and one-sided,” he said. Attending the conference allowed him to get “behind the scenes” and alerted him to trends that are missing in the Japanese market.

Lisa Beaufait, business development manager for Secure Transportation Solutions in Ohio admitted that networking opportunities with others benefited her the most as did the wealth of knowledge she acquired about data centers.

Make plans to attend the next Data Center World conference and expo, which will be March 7-11, 2010, at the Gaylord Opryland Resort and Convention Center in Nashville, Tenn. For more information, visit: www.datacenter-world.com.