Digital Power

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LEEDing the Way

Good data centers bring environmental benefits

When I first began my career in the mission-critical industry, business resiliency was in its infancy stage, and clean energy strategies were an afterthought. Twenty-five years later, we live in a digital world of our own creation with close to a trillion applications connected to the Internet and growing. Now the challenge is to figure out how to provide power for our increasing energy needs without polluting our environment and that of neighboring countries.

Historically, efficiency and conservation methods were not a priority in data centers because reliability and business continuity issues steered the ship. Well, things are heating up. According to the *McKinsey Quarterly*, about 2 percent of total global emissions are produced by data centers and IT infrastructure, and within 10 years this will increase to 3 percent, even with strategic energy plans in place.

Clearly, we have put ourselves in an uncomfortable position and need to develop an executable strategic plan that can be implemented immediately.

Organizations such as the U.S. Green Building Council (USGBC) and the Building Research Establishment (UK), plus new energy benchmarks such as PUE and DCiE, have given us a great start by providing standards for base building and data center efficiency.

Our next step is to take standards and lessons from industry leaders and implement reliability focused green design specifically for the data centers. It is time to set an example for the rest of the world to follow since the U.S. uses 25 percent of the world's energy and accounts for only 5 percent of the population. JFK once said, "The time to fix your roof is when the sun is shining," and we should heed his advice before we have to deal with a monsoon.

The USGBC has been a pioneer in advocating green infrastructure. Many data centers have attained LEED certifications in an effort to curb energy consumption and reduce greenhouse gases. While initial costs for LEED certifications are 2-4 percent higher than standard building construction, it theoretically results in an energy savings annuity over the lifecycle of a facility. LEED has yet to develop specific standards that apply to data centers in the accreditation process in its current version 2.2. In development, though, is a LEED data center draft proposal aimed at introducing specific standards associated with data centers. In addition, LEED 2009 will introduce a new method of weighting credits and systems, such as LEED Bookshelf, that will allow the creation of new credits.

Even with these advancements in green building protocols, how can we ensure that businesses pursuing LEED certification have the right motives in mind? Through my business experience I have realized that sometimes LEED is viewed simply as a game of points and recognition, as opposed to truly building a greener future. How do we ensure a building or data center is using and maintaining energy efficiency? Where are the checks and balances to validate commissioning? Commissioning confirms systems are operational, but retrocommissioning needs to be implemented so the building is efficient over its lifetime and not simply labeled LEED certified. What are the markers that establish the baseline of building performance and where is the long-term data that supports the actually energy savings and efficient building performance? We will ultimately need to prove this out as the carbon market and renewable energy credits continue to develop; having a proven model in place will balance the equation.

President Obama's energy plan sets a good example for what needs to be enacted. Our industry must get the best alternative technologies into the market so that their benefits can be realized. This is a call to action: We need to bring everyone together to create proper standards and facilitate positive change so we may timely execute a plan in spite of bureaucracies and hidden agendas. We can't hide anymore; every dollar spent needs to equate to energy saved.

In my opinion, this digital revolution still has tremendous growth ahead of it. The facts are clear: information needs to be readily available, the structure of the data center is continually expanding, the technology is evolving and, to top it off, massive amounts of energy are being consumed. As the current global economy struggles for revitalization, developing efficient, sustainable infrastructure may be the key to recovery. With the global population expected to grow to over 9 billion people in the next four decades the strategies that are instituted today will have an enormous impact for developing nations that will be joining our digital society. Now is the time to be setting examples and developing standards so when these nations finally go digital, they can follow our direction and build their infrastructure efficiently … so let's LEED the way.