

CIOs in the Boardroom

INFORMATION TECHNOLOGY ASSUMES MORE PIVOTAL ROLE

BY WARREN CAUSEY

ONLY A FEW YEARS AGO, IT WAS common to see articles about the climb from basement data processing centers toward the executive suite by utilities' top information technology staffers, or chief information officers. At most utilities today – although there still are many exceptions scattered around the country – they have arrived. Most utility CIOs now are considered a part of the strategic think tank and management structures of their organizations.

Some of them may be wondering if making the climb was such a good idea.

Never before has the utility industry been inundated with so many problems all at the same time. And, many of the other executives sitting in those boardrooms increasingly are looking to IT for solutions that they needed “last week.” Information technology didn't create most of the problems, but technology certainly is expected to come up with answers, and quickly. Now CIOs are part of the team that has to face a myriad of problems being served up by politics, economics, demographics, regulation, terrorism, and war.

“We in the United States built the best electrical system ever devised; it was out on the edge,” said Austin Energy CIO Andres Carvallo at a recent conference. However, when that system was built the edge in electricity consumption was a home that had a few light bulbs and maybe a radio, he pointed out. Today's edge is energy-gulping homes and businesses with computers, televisions, and a host of kilowatt-hungry appliances and devices. And there are many more of those homes. The United States faces a

major massive supply-demand disconnect with a system that is old and largely based on 50-year-old technology.

The U.S. Energy Information Agency estimates demand for electricity will increase 41 percent from 3,660 billion kilowatt-hours in 2005 to 5,168 billion kilowatt-hours in 2030. Other estimates put future demand much higher. Estimates of the number of additional conventional power plants that would be necessary to meet that demand range from 1,500 to more than 3,000. Building that many power plants in the United States is something that just isn't going to happen. Besides the sheer astronomical cost of that many plants, the political, regulatory and



social climate just won't allow them to be built unless the not-in-my-back-yard group changes its song or environmental regulation is relaxed. Neither is likely to happen in the 23 years between now and 2030.

Increased demand explosion for electricity is the major problem facing the utility industry today. But it is only one of a host of problems. Others include the aging infrastructure, the aging workforce, the political storm over global warming, transmission congestion and instability, the political difficulty of building more power plants, fuel prices, market instability, terrorism and related security issues.

So why are information technology and CIOs so much in the crosshairs in the boardroom? For the simple reason that they have been so successful in the past and technology is seen as holding the magic wand for solving all the problems of today and in the future. IT was able to extend the life of aged systems by providing better command and control of the distribution and transmission networks. IT was able to multiply the productivity and efficiency of linemen and other field workers by pushing maps, work orders and the right parts into the field through mobile systems. Technology was able to vastly reduce the number of workers needed for such things as billing and collecting payments. Technology was able to automate call centers and get people to talk to machines rather than live workers.

The problem for CIOs now is that all those miracles have been used up and there still is demand for more – more cost-cutting, more efficiency, more productivity. And, there still is some room for improvement. According to CIOs, there is a lot of systems integration yet to be done.

NewsFlash

DEALING WITH LIGHTNING

A wind farm is taking steps to limit turbine blade damage caused by lightning, according to an article in the *Watertown Daily Times* in New York.

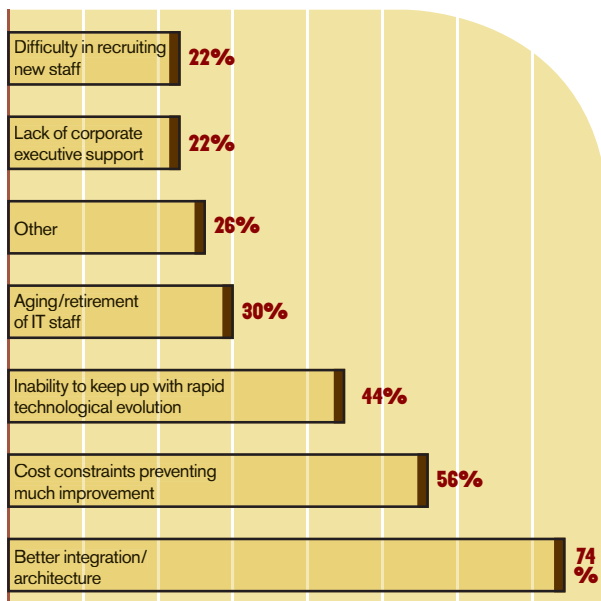
One blade on the 195-turbine Maple Ridge Wind Farm was damaged earlier this year by lightning. It is the largest wind farm east of the Mississippi River.

Blades are grounded but the protection does not extend to blade tips. By mid-October, crews are expected to complete installation of copper sleeves on the blade tips to solve the problem.

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WHAT ARE THE TOP THREE CHALLENGES FACING IT DEPARTMENTS THIS YEAR AND NEXT?



Source: Sierra Energy Group, a division of Energy Central

Integrating existing systems is a critical first step before CIOs can move on to the next steps to help their utilities solve their problems. This includes deploying automated, self-healing, self-operating smart grids and coupling them with intelligent enterprises that provide rapid, comprehensive analytical and decision-support mechanisms to the boardroom. This is the only way utilities can hope to meet the demands likely to be placed on them over the next 20 years.

While CIOs are likely to be in the forefront of deploying new smart systems, they also still have to fight rear-guard action against the traditional silos of technology that developed over the last 30 years. A senior operations engineer at a major utility recently said at an industry conference, "IT doesn't understand SCADA and DA." SCADA, supervisory control and data acquisition, and DA, distribution automation, are the primary information systems traditionally involved in operating the grid.

While most CIOs would disagree with the operations engineer's observation – SCADA and DA are not rocket science – whether they understand the arcane intricacies of these systems is irrelevant to the overall operation of the utility and meeting the demands of the future. The intelligent enterprise must receive data from SCADA and DA – preferably next-generation, self-healing, self-reporting SCADA and DA systems – and convert that data into information necessary to run the utility. CIOs will be at the top of that information chain helping make critical decisions on investment and response to the host of issues utilities face. But CIOs must have the critical information about the day-to-day operation of the grid – something that has been held in the operations silos in the past.

Attitudes such as those espoused by the operations engineer die hard, however, and are just another one of the tangled web of issues CIOs face. As most of them will attest, the cultural and change-management aspects of their jobs usually are far more challenging than

understanding the technology. Many utilities still haven't dealt with the silo mentality.

Time is running out, however, and unless utility leadership grasps the big picture of what they have, how it operates, its limitations and strengths, and its needs, they will be unable to meet the increasing demands. Demand response – programs to cut demand through advanced metering and in-home networks – will help some, but can substitute for only a fraction of future needs. Green energy systems will help, but that will be slow. Only 2.3 percent of U.S. energy currently is supplied by such systems. Increased generation, possibly even new nuclear plants, will help, but they can't be built fast enough or in enough places to meet that demand bubble.

With the current political, regulatory and legislative environment, it is extremely unlikely that enough generation or transmission will be built to meet anticipated increase in demand by 2030.

The only place left to look is toward more efficiency and more productivity from what we already have. That means more, faster, better-integrated technology.

When other top executives reach that conclusion, they turn to the CIO.

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