

# Utilities boost IT spending as confidence in technology grows

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Spending on IT systems by utilities is relatively meager—less than 5 percent of revenues—when compared to industries such as telecommunications, where IT spending approaches 25 percent of revenues, according to Gartner Group figures. This frugal tendency in utilities, however, promises to change, and indeed is already changing.

Increased spending on IT is due to the growing realization that advanced technology is not so much an expense as an investment—an investment that is becoming more and more critical in the newly-competitive electric utility world. Automated work management systems

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(WMS), for example, can boost organizational productivity and efficiency dramatically by automating such time-consuming tasks as manual scheduling, ordering, dispatching, and the like. Systems free up staff for other, more productive activities; highly integrated systems driven by high-quality data free up staff resources even more. Investing in system and data-integration strategies that make internal processes more efficient

has clear benefits in a market driven by deregulation, reregulation, and performance-based rate-making.

Consider the case of the WMS installed at the Los Angeles Department of Water and Power in 1996. The new system, part of a larger infrastructure overhaul at the California utility, has saved \$3 million a year in labor costs, as noted in "The Energy Work and Outage Management Report, 2000" (published by Warren B. Causey, Ltd.). The cost/benefit advantages here—and the resulting enhancements to the utility's competitive prowess—are obvious. Just as important as cost savings, however, is the broader value that new, efficient software systems can provide: the improvement of service to customers, the increase in organizational agility and responsiveness, the enhancement to shareholder value, and more.

Electric utility executives are seeing the point: the increase in spending on large-scale enterprise systems from \$1.9 billion in 1999 to a projected \$2.6 billion in 2003 represents an increase of 37

percent over that four-year period (see figure). This increased spending clearly reflects confidence in technology-based solutions—specifically in outage management, energy management, and other operations support system (OSS) applications—as strategies for helping electric utilities become more efficient, productive, and responsive to customer demands. Internet-based systems and mobile workforce management are currently at the cutting edge of development efforts—revealing a trend toward greater and greater reliance on systems and reflecting their infiltration into all aspects of the working environment.

Our growing reliance on systems is paralleled by a growing need for effective integration of those systems and for delivery of the high-quality, tightly integrated data needed to make them work effectively. Integrated systems and integrated data are keys to an effective IT infrastructure, and spending trends in the industry reflect this dawning awareness.

## What high-end systems really need

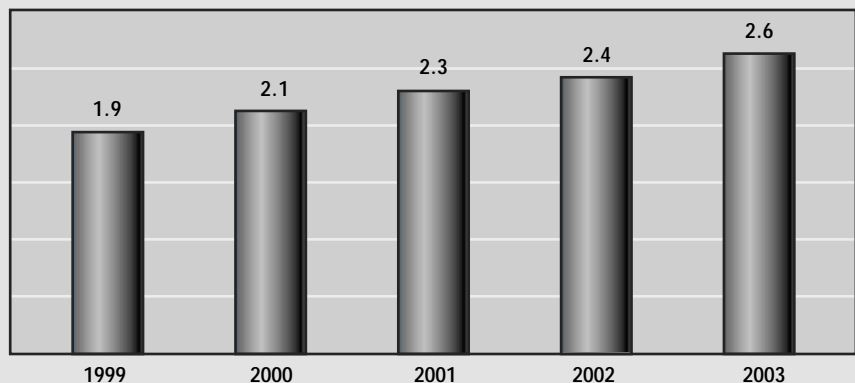
As utilities spend more—and rely more—on systems that enhance productivity and competitiveness, they are moving away from standalone legacy systems in favor of applications, data interfaces, and data-integration mechanisms that allow optimum flexibility.

Most systems today involve point-to-point, one-to-one integrations, which tend to be costly over time. A typical example is the integration of a GIS and an outage management system (OMS). OMS technology usually requires that the GIS provide landbase information, network features, customer addresses, and customer-to-transformer linkage. In a point-to-point scenario like this one, the inter-

face between the GIS and the OMS is custom designed to allow interchange of information stored in different data formats. In a typical utility, the GIS can talk with the outage system, and also perhaps with a SCADA system, a customer information system (CIS), and other applications to which it is connected through custom interfaces. Perhaps the SCADA system, in turn, can talk to the GIS, the OMS, and the crew-tracking application—but again, only through a specialized data interface that is costly to develop and costly to maintain. In this type of network architecture, the individual systems are essentially lone islands that need to be bridged rather than unified territories within a single continent. Getting information from one system to any other system requires costly custom development—and still connects only those two entities.

Utilities with vision are working to establish system infrastructures that are not islands but continents. One promising step in this direction is messaging middleware that allows standardized communication between applications. Another important step is the development of strategies that not only transport data but integrate and enhance the data as well. Getting data from one format into another is one thing—making sure the data is good to begin with is something else. Basic methods of error-detection, data-validation, and data-verification are crucial to data quality (and consequently to the value delivered by a system) when data is being drawn from multiple sources, enhanced, integrated, and then exported to a target format. A product like FastGate advanced gateway software from Coherent Networks can now automate the bulk of these data-validation and data-enhancement operations. The result is both

Industry spending on IT systems (in billions of dollars)



improved data quality and improved flexibility in the use of data within the larger system.

Such solutions are being used more and more by utilities who are forced by deregulation and performance-based rate-making into finding new ways to improve their quality of service. Lately, their improvement efforts have been well financed. As James Rogers noted in his keynote address at DistribuTECH 2001, there has been "an explosion in energy-related venture financing" in the electric utility industry. As recently as 1993, Rogers points out, venture funds were being invested in technology initiatives targeted for utilities at less than \$50 million annually. In 2000, that annual rate had exceeded \$1 billion—a twenty-fold increase. Much of this money is being invested in energy-related startups, many of which are software developers. Much of this investor cash is consequently destined for new systems that improve operations and customer care—OMS, WMS, and the like—and for technologies that help the systems communicate and that simplify their deployment.

**Seven tips on deploying your new system**

Outage management, energy management, engineering analysis and other operations support system (OSS) applications are critical investments for utilities—both in terms of cost and in terms of impact on the organization.

To guide utilities along the path to OSS deployment, I've assembled seven pointers based on my company's experience in helping utilities deploy OSS applications. This list is not exhaustive, and it's not intended to be a step-by-step guide. Its chief value lies in helping utilities start off on the right foot and maintain their focus at a high level.

- **Think BIG.** When you're planning to deploy a new outage management, energy management, or other OSS, you need to scrutinize not just the new system but all the existing systems around it. A new outage management system, for example, may need to interact with the existing CIS, GIS, SCADA, and interactive voice response (IVR) systems. What sorts of interfaces are required to accomplish this? The specific features of the system you finally select—the bells and whistles of one outage management system versus another, for example—are ultimately less important than how well that system gets along with the rest of your IT infrastructure. A system with modest functionality that integrates nicely with existing software may be worth more than a feature-laden superstar that the rest of your team can't play with.
- **Treat the system deployment as a project.** The deployment initiative will go more smoothly if it has its own clear identity—as an official project, and not as a vaguely supported "good idea" that nobody in the organization really owns. There should be a dedicated project team, with a successful system deployment as its sole mission, and with a designated project lead that everyone on the team reports to. There should be clear, documented, published sets of responsibilities, milestones, budgets, quality standards, and pre- and post-deployment objec-

tives. The approach used by Scottish Power when it purchased PacifiCorp is a good example of how to do it right. Scottish Power recognized that PacifiCorp was pursuing important system deployment initiatives, but also saw that PacifiCorp was trying to fit these initiatives into existing organizational structures and departmental budgets. Under Scottish Power's direction, each initiative was identified and broken out as a discrete project with an assigned project team. Each project came with a clearly articulated message: "Be sure all your costs are accounted for. Don't come back looking for additional funding."

- **Play it safe—but not too safe.** In the rapidly-changing landscape of enterprise software, there's a fine line between choosing a conservative, tried-and-true technological standard and choosing a dinosaur. Let a little time go by, and the two can be identical. In this industry as in others, many of the exciting, innovative software advances are being introduced by small, nimble, not-so-well-known companies and organizations. With massive amounts of venture capital being invested in energy-related startups, the breakthrough technology you're looking for is as likely to come from fresh sources as from established ones. In making major technology decisions, there's a natural temptation to play it safe. Just don't play it too safe. Innovative ideas and approaches may provide the competitive advantage you're looking for.
- **Don't forget the data.** In the heat of selecting, planning, and deploying a new OSS, a crucial factor—the quality of the data delivered to it—can sometimes get overlooked. Yet high-quality data is as important as the system itself. I was talking the other day with the vice president of distribution assets at a mid-sized utility who'd just spent \$2 million implementing a new outage management system. The implementation process was a technical success. The system was up and running on the date promised. There were no cost overruns. Only one problem: the system wasn't performing as desired. Why? Because during the deployment process, everyone was so intent on getting the new system on line that they failed to give full consideration to data-quality requirements. Mundane data-preparation steps took a back seat to the flashier technical challenges of making the system operational. Now bad data is being pumped to the outage system like bad gasoline. The utility is now looking at another \$2 million project to purify the data to get the promised value from the system. I estimate that 85 percent of system deployment failures are caused not by technical problems but by bad data.
- **Sell the system.** System deployments are political events. You want everyone on board. You want everyone in full support of the new system long before it goes live. But resistance to change is the same in the IT world as it is everywhere else. People are comfortable with whatever system is currently in place, no matter how pokey or obsolete, no matter how much they gripe

about it. The system needs to be installed—but first it needs to be promoted. Primary areas where acceptance is crucial: upper management, IT, and end users. Schedule briefing sessions that are tailored to the group whose buy-in you seek. To management, explain the cost benefits, the improvements to productivity, the salutatory effects on ROI. To IT, stress the improvements in network performance and efficiency. And so forth. Get key people involved early on. The system's technical merits are not enough; you need to actively build acceptance in all relevant organizational quarters.

- **Work fast.** The sooner the system is deployed, the sooner the organization can begin getting value out of it. It's easy to get tangled up in technical barbed wire and in political jockeying within the organization. Do your best to resolve time-wasting issues quickly and to focus everyone's attention on deploying the system. In addition to the organizational benefits, rapid deployment takes advantage of your team's early enthusiasm and commitment. Maintaining a high level of drive and focus over a long period of time is difficult; working quickly (not hastily but quickly) keeps the project fresh and interesting. Set a launch date and sensible milestones and do everything you can to reach them on schedule.
- **Deploy the system in your "best" district first.** Be sure to test the new system under controlled conditions that will promote the success of the project—preferably in your smoothest-running area with your best people. Starting out with favorable conditions and smart, hard-working people will help define the optimal processes required and help ensure that the system is delivering the improved efficiency, the enhanced customer care, and the other benefits you are hoping for. Using this deployment approach, set up the new system in parallel with the system it will replace. This allows you to work out the technical kinks before there's too much at stake. Just as importantly, it gives everyone making the transition from old system to new—IT staff, end-users, management, and others—to get acquainted with the new system and feel comfortable with it before you hit "go." Run the two systems side by side in one location, documenting lessons learned and making any necessary modifications. Once it's running as desired in the initial "best" district, as rapidly as possible roll the new system out area by area until it is fully deployed.

A major system deployment will involve a massive amount of detail that is not addressed here. That level of detail is the trees. The tips above are glimpses of the forest. You need to keep an eye on both. ■

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