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CO-OPtech

By **John Lowrey**

PUTTING IT ALL TOGETHER

New applications and real-time requirements drive integration of automation technologies at co-ops large and small

When it's tightly integrated, sharply focused and properly deployed, new technology can offer a co-op cost savings, operational efficiencies and service improvements. But when it's cobbled together over the years, purchased and pur-

sued without a plan and imposed on staff without any training, technology can drive everyone crazy.

"Our old system was just plain silly," says Cal Rutherford, chief financial officer at San Miguel Power Association in Nucla, Colo. "We had to enter data in four places

at a time. Mistakes were made. Time was wasted."

Now the co-op combines all of its financial, consumer and billing information—along with its outage management and geographic information systems—into a single integrated package managed by OpenOne from Applied Technology Solutions (www.atcorporation.com). "At the core of the system is a single Oracle data repository that saves time and keeps your data clean and pure," says Business Development Director Ron Aiken. "Our system is glued together."

That unified package satisfied San Miguel's requirements, Rutherford says. "We had three big issues: integration, flexibility and ease of use."

Not surprisingly, those are the same big issues many co-ops have with technology. The never-ending advance of computerized systems and automated processes keeps co-op information technology directors and operations staff on the lookout for ways to integrate promising new programs without isolating or compromising the old ones.

That process is getting easier, as more co-op technology vendors sign onto the

I N F O T O G O

Four things
you need to
know about
system
integration:

1. *Good planning with a "technology road map" leads to good integration.*
2. *The people who will use the new technology must be given sufficient training.*
3. *Focused, integrated technology advances save money. Unplanned technology wastes it.*
4. *Real-time integration becomes more important when technology is used to manage outages.*

PHOTOGRAPHS BY STEVE BARRETT



MultiSpeak® integration initiative launched by NRECA's Cooperative Research Network. But it still requires a clear vision and a detailed technology plan, as Navopache Electric Cooperative in Lakeside, Ariz., found. Dennis Hughes, manager of customer service, says Navopache's information and automation systems could not work together, so he turned to Enspiria Solutions (www.enspiria.com) for help in writing a new technology plan.

"I have seen so many clients that have a great deal of technology, but don't see the full benefits because the systems are isolated in purpose and focus," says Mark Johnson, a principal consultant with Enspiria. "Many utilities today have made the proper investments in technology, yet aren't getting full benefits, either through incorrect process alignment or lack of training on the full use of the software. A strategic plan helps co-ops see the technologies with cross-departmental benefits and helps define a deliberate implementation of integration."

Developing that plan often demands changing your perspective, adds Corey Maple, chief executive officer at Powel-MiniMax (www.powelminimax.com). Maple's company offers the Utility Decision Support Platform,

an integrated assessment and data management program that works on an Oracle database.

"The first step," Maple says, "is to start effectively managing work, not data. Co-ops need to realize that technology alone doesn't solve the problem; they need to leverage process improvements as well. Many utilities are enamored with cool technology, but if they don't change their processes, they will be missing out on much of their return."

Linda Davis (below) spent four years developing a mobile data system for linemen like Randy Whitlow (above) at Virginia's Southside Electric Cooperative.

And that return can be substantial, he adds. "Our Utility Decision Support Platform showed a client that they did not need a new substation they thought they needed. With the right asset management approach, they were able to avoid this major expense."



Adding real-time data integration only compounds the complexity of the advancing technology. And that makes it absolutely essential that a utility have a plan, asserts Bob O'Connell, utility solution manager for ESRI (www.esri.com).

"A technology road map is an increasingly vital tool to have," he says. "Similar to the five-year construction planning process conducted by the engineering department, IS/IT direction and growth analysis should be reviewed within the context of a co-op's business direction and needs. Remember, Moore's Law—that technology changes every 18 to 24 months—is holding steady."

As a leading vendor of geographic information systems, ESRI serves a wide variety of industries and works with many different software partners. "The need for tight, effective integration is not unique to co-ops," says O'Connell. "Well-designed integration, such as that provided by MultiSpeak, is a necessity. The use of standard-based integration permits a 'best-of-breed' approach to selecting business applications and reduces life-cycle costs for the co-op. And reduces the cost for vendors, too."

Brian Wolf, chief operating officer for the National Information Solutions Cooperative (www.nisc.cc), breaks the technology road map into three parts: business processes, technology options and people. A co-op's employees, he adds, must be involved in drawing the map. "It is important to integrate your organization first, get people working together on common issues and projects. This sounds simple, but it is not."

Security should also be a part of the plan, he says. "As we strive to bring a 24/7 Web environment to our customers, we also bring the environment to everyone else. The balance between customer service and appropriate security will be a continuing challenge," he says.

All of these challenges and concerns came together at Southside Electric Cooperative in Crewe, Virginia, where Information Technology Supervisor Linda Davis has spent the past four years working on a mobile data system that can deliver up-to-the-minute system information to laptops in the field.

"During an outage," she says, "our guys are under stress. They need a simplified interface. We had to make sure our data matched. We had to clean up some things before going to real-time mobile data. Batch processing is

fine for billing, but during an outage you need real-time integration."

Southside Electric's project began with a 2001 meeting between Davis and Julius Hackett, the co-op's engineering manager. "We did not find a true solution," Davis recalls. "We automated some manual processes and created more scheduled processes, but nothing was real-time. We continued to spend hours managing these processes, as well as dealing with errors due to incorrect data."

Davis credits Hackett and the co-op's IT staff for sticking with the effort. "Julius has been a godsend," she says. "You have to have good cooperation." Davis also credits Larry Longshore, Southside Electric's president and chief executive officer; Finance Manager Stanley Worsham; and the co-op's board.

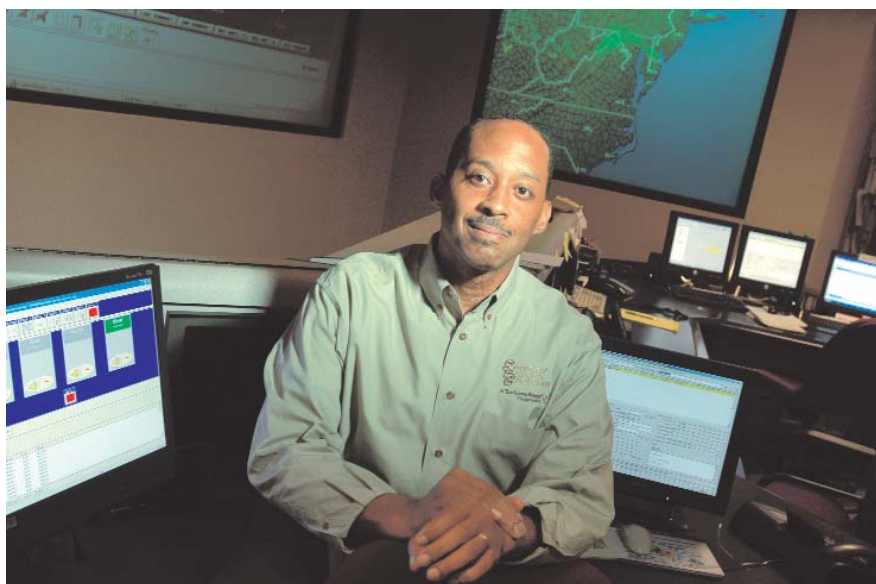
Southside Electric's membership has

readings came in over Hunt Technologies' Turtle system (www.turtletech.com).

"The data had to be the same on all systems," Davis says. "We couldn't let the GIS have different account information than what the CIS had."

Davis and her project colleagues found the integration solution they needed in early 2004, when Southside Electric partnered with IBM Software Services for WebSphere (www.ibm.com/software/integration). WebSphere's open integration software is flexible and scalable, and it allows single sign-on access to the integrated systems.

"WebSphere has three basic components: messages, adapters and a broker," Davis explains. "Messages are the data. Adapters are used to retrieve the data from a database and send it to the broker as well as sending it from the broker back to the data-



Engineering Manager Julius Hackett was part of a Southside Electric team that chose WebSphere as the distribution system's integration software.

grown by nearly two-thirds to almost 50,000 over the past five years, and the co-op has worked to manage the growth by building new efficiencies into its processes. Laptops in the line trucks—with access to the most recent system data available—are an important part of the efficiency drive, Davis says.

But the data, she adds, comes from a variety of systems, supplied by a host of vendors. Customer, financial and material information resides on a system from Daffron & Associates (www.daffron.com), while outage management was handled by a Milsoft system (www.milsoft.com). Automated meter

base. The broker sits in the middle between all databases and is programmed to know what data needs to be sent to what database. There are different adapters for the different types of databases. Once configured, this process moves the data as it changes on any of the databases in real-time. It's a proven solution and works on any platform."

The co-op contracted with IBM for consulting services that included project architecture, software configuration, testing, implementation and training. Davis says IBM's staff lived up to their company's reputation for service, and costs were affordable and based on client size.

IBM's WebSphere uses a "hub-and-spoke" as opposed to a point-to-point approach to software integration. "There are times when point-to-point integration makes sense," says Steve Liu, a WebSphere integration specialist. "But look at the airline industry. It is inefficient to operate point-to-point flights. That's why they use a hub system."

Liu says IBM has people with utility experience on staff to help a co-op start the integration planning process. Once the WebSphere system is in place, a co-op can do its own tweaking with industry standard tools.

IBM recently joined the MultiSpeak initiative. The company sees such standards as critical to its success, according to Tyron Stading, IBM solutions architect for energy and utilities. "Industry standards are extremely important so that we can get on the same page," he explains. "With a data standard, we can put systems together faster. Working with MultiSpeak is going to help not only customers, but help evolve the industry."

He adds, however, that co-ops need all their systems to work together, not just the MultiSpeak-compliant ones. "With IBM middleware, you are able to tie in the rest of your systems no matter what they speak and how you access them. Together with MultiSpeak, we have a compelling combination story," he says.

Gary McNaughton, vice president of Cornice Engineering and project coordinator for MultiSpeak, sees a natural fit between MultiSpeak and WebSphere. "IBM came to the conclusion that MultiSpeak is the most mature standard for the utility industry," McNaughton says.

MultiSpeak moved into real-time integration with the launch of the latest version, which uses the Web, but McNaughton cautions that co-ops still have to lay the integration groundwork. "That's why we started the MultiSpeak Integrator program. We are offering training to service providers, consultants and co-op IT personnel so they can better

understand how MultiSpeak fits into the larger technology planning and implementation picture."

Bob Saint, NRECA's point person for the MultiSpeak standard, says the integration initiative has matured to the point that the association has taken over administering it.

"It's not just a research project now," Saint says. "It's a fully functional tool. It may not be plug-and-play, but with the newly developed Web service version, it's a lot easier to implement the first time. Vendors like NISC, SEDC, ATS, Hunt, TWACS by DCSI, Milsoft, QEI, Powel-MiniMax, Origin, Geo-Systems, Partner Software and others have been busy developing interfaces that actually work. It is truly a remarkable sight to see that many vendors, some direct competitors, working together. Now it is up to co-ops to ask for, even require, MultiSpeak-compliant software."

Scott Juranek, director of software development at Hunt Technologies, is a vocal MultiSpeak supporter. Hunt's new Command Center Version 2.2 was programmed to MultiSpeak standards, Juranek points out, and he worked hard to get Web services included in the latest MultiSpeak version.

"Milsoft and Hunt both pushed Web services," he says. "We were already using Web services, and we talked to other vendors and said this is the way to go."

Integration of automatic meter-reading systems with other engineering software is a good example of how integration creates new possibilities. "It's the one plus one equals three principle of integration," says Milsoft President Wayne Carr. "Significant solutions don't need new hardware and software functions as much as they need existing systems to maximize functionality through integration."

Hunt's Command Center 2.2, for example, offers more integration and compatibility with popular engineering and billing soft-

ware. All kinds of data—maximum demand, time-of-use demand, signal strength or interruption counts—can be transferred to Milsoft's Windmil. And that yields a valuable tool for system planning. Command Center also shares data with outage management software and most of the customer information system software used by co-ops.

Bob Richardson, vice president of new business development for TWACS by DCSI (www.twacs.com), says co-ops lead the utility industry in AMR use, and that outage management has become an important part of the AMR value equation. With the introduction of Web services in MultiSpeak, Richardson predicts accelerated system integration.

But linking AMR and outage management, he warns, will make real-time communication between the two systems essential. "It's becoming a real-time world. Things that used to be batch-oriented increasingly need to be real-time, such as online bill presentation and payment. This needs to be a real-time calculation."

Meanwhile, he adds, the risk of mismatched data grows unless a co-op works out a good automation plan and tight system integration. "A good example would be an electrical network model. Systems as diverse as staking, engineering analysis, GIS, AMR, SCADA, work management and asset management all have a need to access parts of this data. Integration must make it easy for utilities to manage the issue of data synchronization."

That will come, most vendors agree. MultiSpeak already has added to the integration pressure on the industry.

"There are 25 active MultiSpeak vendors," observes Powel-MiniMax's Corey Maple. "MultiSpeak forces us to work together." ■

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