Computer Systems Grow to Meet Employee Needs

South Mississippi Electric's daily operations have become increasingly dependent upon computers since they were first introduced at the Association in 1974. Today, nearly 40 years later, two groups and 16 employees are responsible for the hardware, software, networks and systems that monitor SME's electrical grid and generating units, oversee the wide range of business operations required of a billion-dollar organization, and provide security for facilities spread across numerous locations.

The Business Information Systems group and the Control and Computer Systems group, previously combined as the Computer Information Systems department, were separated in late 2008 to streamline the tasks and focus of each group. Since then, the two groups have grown in terms of size and responsibility to accommodate the ever-changing computer-related and business application needs of the Association and to comply with all financial audit, government and regulatory requirements associated with the electric power industry.

The nine members of the Business Information Systems (BIS) group (eight full-time employees and one part-time intern) primarily work behind the scenes to maintain the business computer systems that support functions ranging from payroll and purchasing to work order management and vehicle maintenance.

The team, led by Mike McCrary, director of business information systems and advisory services, researches, develops, implements and supports computer systems for various functions that help SME employees perform their jobs more accurately and efficiently. In order for these systems to function properly, the team also maintains the databases of information upon which the systems operate. For example, Oracle EBS is the computer system used to process payroll every two weeks (among other functions). The information used to process payroll, such as time worked and hourly rates, is stored in the Oracle EBS database.

"The BIS group contributes to the overall goals of SMEPA by supporting the computer-user community in everything related to their jobs," said Tonya Hutchinson, application developer. "Each user depends on us to keep all computer applications and databases functioning properly."

Overall, the group maintains all Association computer applications, with the exception of most applications used by the Control Center, including:

- Oracle EBS – used for purchasing, payroll, accounts receivable and payable, human resources, self-service human resources, fixed assets, inventory, learning management, general ledger, project accounting/costing, cash management, iProcurement, iExpense, time and labor, and Discoverer reporting
- ImageNow – an image scanning and retention program currently used for invoices (can be expanded in the future for record retention)
- HelpSTAR – the online help desk system used to report and track change management and user issues for any computer, application, or phone system
- ModWed – a web interface program that allows multiple engineers to access Modeling On Demand software to build power simulation load flow models
- Hyperion – a budgeting software that helps produce SME's annual budget and, ultimately, to develop rates
- Akonix – an instant message tracking system that logs information exchange between the Control Center and outside entities to document discussions on rates and other power purchase information (supported by Control and Computer Systems, with the database maintained by BIS)
- Maximo – an asset and work order management system
- SharePoint – software used to create the member, human resources, vault and management portals
- MicroSoft Enterprise Project Management – project management software used by engineering
- Gasboy – a vehicle fuel and maintenance reporting/tracking system used at headquarters
- Petrovend – a vehicle fuel and maintenance reporting tracking systems used at the Field Operations Center (FOC)

Each member of the team has their own area of expertise; however, their work intermingles and is dependent on one another. For example, Hutchinson supports Maximo, which is dependent upon the database that is maintained by Will Berry, Oracle database administrator.

Berry is also responsible for data backup and restoration. Mission-critical information, such as information in Oracle EBS and Maximo, is saved hourly to a back-up storage server at the FOC. In the event that a system crashes at headquarters, information from as recent as within the hour can be retrieved from the back-up at the FOC. All systems are backed up nightly and copies of storage tapes are taken off-site monthly so that information can be maintained securely in multiple locations.

Will Berry (left) and Mark Dodd use consoles to access, update and maintain more than 50 servers in the computer room.

BIS employees Tonya Hutchinson (left) and Russell de Lassus

"Recovery and restoration of data is something that all database administrators hope they never have to do, but we have to be ready when necessary," said Berry. "One precautionary step we take is to test our back-up systems at the FOC periodically to ensure that they are running properly and that they will perform as needed if necessary."

Hutchinson's primary role in supporting Maximo is to find solutions to issues that may arise, fulfill new requests, and implement enhancements to the application. End-users, such as employees in engineering, communications and vehicle maintenance, use Maximo to access information stored in the Oracle EBS database to track materials needed for jobs, regular inventory items, and activities and other vital information associated with SME assets (for example: company vehicles and transmission line structures). The system has the capability to track all purchases from the time a purchase requisition is issued, when an order is placed, and finally to an invoice.

Senior Developer Nancy Brooks works to provide the link that allows information in the database to communicate with the application. Brooks' method of coding processes the information and turns it into something that is readable by the application.

"My job is to help make the user's job easier," said Brooks. "If the user needs the application to perform a function or produce a report that it currently does not do, they can submit their request and I work to make the application accomplish what they need. Employees are the experts when it comes to their jobs, so helping them get what they need is a team effort."

Russell de Lassus, Oracle functional analyst, plays a key role in supporting the end-user. de Lassus administers HelpSTAR, SME's help-request ticketing system. Employees access HelpSTAR on their desktop to report any issues with their computer, its associated equipment, or their telephone. Once an issue has been reported, it enters a dispatch queue and is routed to the appropriate person in BIS, Control and Computer Systems, or the Communications group. The ticket documents the status of the request, helping to streamline the work in all three groups.

In addition, de Lassus also serves as system administrator for Oracle EBS, creating user accounts, granting permission access for users, trouble-shooting issues with the application, and supplying front-end configurations.

Sylvia Foxworth, functional business analyst, provides support for ImageNow, SharePoint, and Microsoft's Enterprise Project Management. She has also been working with the treasury section to implement GTreasury, SME's forthcoming treasury system.

Foxworth also maintains SharePoint portals, which are a variety of internal and external web sites that function as a point of access to information for groups of users. Portal sites have been developed for the vault, member services, management and human resources, and there are ongoing plans to develop an engineering portal.

Senior Business Information Analyst Rob Huggins provides the same kind of support for Hyperion, the reporting application used to provide business intelligence. Hyperion applications include creating SME's annual budgets, identifying budget trends, and comparing budget forecasts to actual expenditures, which cumulatively lead to setting rates.

Rob Huggins (right) consults with Bobby Vinson, controller, about finance reports

"Our business is unique so the budgeting application was custom designed to meet the company's requirements," said Huggins.

"The recent Oracle EBS upgrade has also allowed us to expand our reporting capabilities. As a result, the safety and training group can now search the SMEPA database to identify employees who have completed specific training programs. They can enter their search information, such as an employee's name, and identify what training courses they have participated in and when the course occurred. Before the upgrade, finding such information required

searching through spreadsheets. As we implement more new systems, we will be able to offer a wider variety of reporting capabilities to employees."

Jesse Torres, business information manager, schedules, coordinates and oversees the group's projects and maintains the relationships with each department they work with to ensure that needs are being met. In addition, Torres works closely with McCrary to schedule future projects. The two take into consideration the need for new applications, assets necessary to conduct projects, the ability of the BIS staff to handle project load and provide proper support after implementation, and the training required for end-users to implement new applications.

"Our main goal is end-user satisfaction," said Torres. "This is easier said than done and a daily challenge. We do not always have all the answers, but we work closely with other departments and outside vendors to get the answers. Our group is relatively new, but we work well together. The success of BIS is our team. I work with a group of dedicated and hardworking individuals."

One goal is to grow the group's training program for end-users. Torres currently plans for the training required for users to operate new programs, whether the training is in-house, on-line or off-site. In the future, McCrary and Torres hope to expand upon the training offered in-house to enhance SME employees' computer skills and abilities.

"We are very fortunate to have a top-class center that is dedicated to computer training," said McCrary. "Our information system is very sophisticated for an organization of our size, and our goal is to help employees use it to its fullest potential.

"Our department thrives on teamwork. We support and work well with the end-users, but they are the ones that own the system. They really take ownership of their system and convey to us what is happening from their standpoint and how we can help them be more efficient. That is our group's key to accomplishing our mission."

As a follow-up to the recent Oracle EBS upgrade, the group is now implementing the Procurement Contracts module to aid in the administration of contracts through the system. In the near future, BIS also plans to implement a new asset tracking system and a relay group application to maintain SME's protective relays. Plans will also continue for a new engineering portal and GTreasury. ImageNow may also be expanded to provide electronic record retention.

Although they are now two separate groups, BIS and Control and Computer Systems often collaborate on projects. Once one group introduces a new application or the other group introduces new hardware, the two work together to ensure compatibility between the hardware and the application. BIS relies on Control and Computer Systems, led by Tommy Clark, director of control and computer systems, to maintain the personal computers, operating systems and browsers upon which the BIS applications run. Clark's group also supplies back-up and back-up storage, as well as assists in the restoration of backed up files and databases for the applications that are managed by BIS and those for the Control Center.

Scotty Barron, control systems manager, William Fortenberry, control systems assistant, and Guy Isaac, systems/network administrator, provide application support and reporting services for the Control Center and plant control rooms that are similar to the services BIS provides for the rest of the Association. In the Control Center alone, more than 25,000 points of operations data are scanned every four seconds. As any point in the data changes, that point is documented and saved.

"Our role is to make sure that all of the applications necessary for the Control Center to operate efficiently are running and performing to the best of their ability," said Barron. "We also provide the system operators the ability to generate and store the reports they need to do their jobs."

The main applications that Barron's group supports in the Control Center include:

- Energy Management System (EMS) – a collection of servers and applications used to operate SME's grid through generation control; also receives constant SCADA (supervisory control and data acquisition) input and keeps up with scheduling and reliability requirements
- OATI (Open Access Technology International) – a scheduling, energy trading and transmission application
- Pattern Recognition Technology (PRT) – an application used in forecasting generation and transmission loads
- eDistributed Network Architecture (eDNA) – documents historical data that flows through the Control Center; can retrieve data and replay any event on the system, such as how the system was affected during Hurricane Katrina

Guy Issac (left) works closely with Gary DeFatta and SME's other system operators on Control Center applications

- Control System Information Email – an in-house-developed application that provides information to specific employees about system events via email (this information is primarily obtained from the eDNA)
- Inter-Control Center Communications Protocol (ICCP) - provides data exchange over wide area networks between utility control centers, neighboring utilities, power pools and regional control centers/reliability coordinators

Deric Thompson changes out an employee's PC hardware

In contrast to the department-specific computer applications provided by BIS and Barron's group, Mark Dodd, systems network manager, and systems/network administrators Ken Sumrall and Deric Thompson provide support and maintenance for all standard software applications (Microsoft Suite, for example) and all of the equipment and hardware associated with the organization's servers, storage, desktop and laptop computers. This includes computer networking, firewalls, Internet access, email, remote access, and Websense.

In addition, the three maintain the H and Q drives, as well as all of the Association's BlackBerries, cellular phones and printers. They also oversee network security, including Internet access security, networked laptop security, and other Critical Infrastructure Protection. The group also maintains a fleet of computer equipment available for loan to SME employees for business purposes.

Since SME is a 24-hours-a-day operation, employees in Control and Computer Systems and BIS are on call at all times. Remote access from outside SME facilities is available through a virtual private network (VPN), which enables them to log in from home on system-protected laptops and correct most problems that occur outside normal business hours. The groups are also mindful of causing disruptions to daily operations, so they often schedule installation, maintenance and repair work during off-hours.

"We try to work nights and weekends whenever downtime is required in order to minimize the inconvenience to our employees so that the system performs when they need it to," said McCrary.

"The goal of both groups is to provide our organization with a secure system that will run 24 hours a day, 7 days a week with no interruptions," said Clark. "Our employees should never have to come to work and wonder if their systems will work. They should always have confidence that they will."

The Early Years of Computers at SME

- **1974 -** South Mississippi Electric's first venture into computers was using the Sigma 9 system located at The University of Southern Mississippi in 1974.
- **1976 -** Harris, SME's first operations control system, debuted in 1976. Harris was SME's first in-house computer system.
- **1977 -** The building for the Control Center was completed in 1976 and computers and electronic equipment were installed in 1977.
- **1979 -** SME purchased an HP1000 with Duncan software to process bills. The first complete business system, a Harris 800, was installed circa 1982.
- **1979 -** A new translator computer was purchased and placed into operation. Thirty contracts were completed and closed out during the year.
- **1980 -** SME had 2 computer analysts on staff.
- **1981 -** The new Harris 800 computer was installed and placed in service. Programs for load forecasting, load flow, short circuit studies and payroll were placed in operation during the year.
- **1982 -** SME personnel assume most of computer maintenance to reduce outage times and cost.
- **1987 -** The second Harris Control Center system, featuring a dispatcher's load flow system and a transaction evaluation program, was installed.
- **1989 -** HP 9000 with Oracle relational database and networking capabilities was installed.
- **1990 -** Personal computers first introduced in different areas of the Association.