



“Extreme IT Makeover” Transforms Georgia Utility

By Bob Arnett, Vice President-Technology Systems
Cobb Energy | Marietta, Georgia

Two short paragraphs sum up an incredible three years in the lives of dozens of people in Marietta, Georgia:

Six months prior to “go-live” of a two-year technological overhaul to replace an aging legacy environment and reduce outside contractor support costs of the billing system by 50 percent, Cobb Electric Membership Corporation (Cobb EMC) purchased Southern Company Gas. Cobb Energy – an aggregator of services for Cobb EMC – needed to immediately dissolve its previous gas marketing partnership with SCANA Energy and transfer back accounts. Likewise, Southern Company Gas (now Gas South) also required a billing system conversion from its platform by a fixed date. This created an additional conversion from a different platform and a change order resulting in a 12-month extension, a 74 percent budget increase, and extensive re-planning of the project.

It was a very emotional three years with widespread user involvement and executive support for the project, which resulted in projected annual benefits of more than \$3 million. Both the IT staff and business people are performing more value-added tasks since the IT transformation has taken place. Turnaround time on user requests has dramatically improved. Cobb EMC has improved its accuracy metrics and decreased its reporting requirements from 6,000 reports to 300 in the new environment. Everyone in the entire IT organization and most of the business people has received training on new applications and tools, and they survived to tell about it!

Behind that brief description, in which the organizers of the CS Week Conference explained why they gave Cobb Energy the “Expanding Excellence Award for Best CIS Implementation,” is a story that typifies the obstacles many utilities face when they resolve to improve services to their communities. It is a story of how teamwork, perseverance, a lot of smarts, and a touch of luck can transform the way a utility does business.

Need for Change

In today’s world, where utilities are focused on environmental concerns, resource constraints, and intelligent grids, it is sometimes hard to remember that in the mid-Nineties, the word of the day was “deregulation.” Some co-ops decided to remain on the periphery, but Cobb EMC determined that it could best serve its members by reorganizing

to prepare for deregulation and protect its assets. It formed Cobb Energy in 1997 in an effort to manage its costs more efficiently while allowing this new affiliate the ability to provide services to other utilities.

By the early 2000s, it was clear Cobb Energy was on the right track, given the specific market conditions and member needs. Cobb Energy provided the billing services for Cobb EMC’s electric customers, and also for 110,000 SCANA natural gas customers. These gas customers in Georgia’s deregulated market signed up through partnerships with Cobb EMC and four additional co-ops. Cobb Energy produced the gas bills for the other co-ops and created “combo-bills” (electric and gas on one bill) for select Cobb EMC customers. The organization also established small footholds in telecommunications, security, surge protection, and tree trimming services, along with beachheads in mortgage financing and prepaid health cards.

“We selected Oracle over nine other bidders based on the company’s industry expertise and the application’s functionality, usability, flexibility and ability to integrate with other software. Before we implemented Oracle, we needed to gather information from multiple screens to assist customers. Oracle Utilities Customer Care and Billing delivers the information needed to assist our customers to the fingertips of our employees. Our infrastructure and application transformation has touched every Cobb Energy department and affiliate, and we will leverage this platform for many years to come.”

Robert Arnett, Cobb Energy
Vice President, Technology Systems

“We migrated from a monolithic architecture to a multi-tier architecture that allows us to ‘grow’ our computing capacity either vertically or horizontally... our choice! “We can also utilize one vendor or multiple vendors because the application is not dependent upon one particular operating system or database. And, we can now consistently complete our nightly billing processes before 1am. Before, billing often ran until mid-morning; often later and into the next business day.”

Tom Bland, Cobb Energy
IS Operations & Services Manager

Existing technology was good enough to get the job done, but it was becoming more expensive to operate and expand every year. It was not flexible enough to accommodate such a diverse and expanding business. Cobb Energy had not upgraded its billing software in more than five years, since obtaining the source code and beginning to customize it heavily.

On top of that, it was difficult to respond to everyone's needs. The requests seemed to get more creative every day. A favorite quote was also the IT team's greatest challenge. David Johnson, chief operating officer (COO) of Cobb Energy once said, "If I can think it, you should be able to program it!" That should give any IT person a few chill bumps! The team received requests to set up new rates in the system on a regular basis. It took the team six months to design, code, and test one rate before implementing in the system.

The overall technology environment seemed to handcuff the team at every turn. Progress was plagued by 189 complex, point-to-point interfaces, cumbersome testing, overwhelming needs for user training, high turnover in the call-center, and a huge dependency on contractors three time zones away. The batch processing window sometimes ran 36 hours, not catching up until the weekend. The connection between customer service and engineering was printed paper.

Moreover, the tools for project planning, code management, issue and risk management, and testing just did not exist. All of this resulted in the business people losing patience with the IT department. There were so many report requests in the queue that departments were double- and triple-keying data into spreadsheets and Microsoft Access databases. The marketing department alone had 29 MS-Access databases. Sound familiar?

Change

After some analysis, Cobb Energy discovered that it spent more than \$2.3 million annually on external resources and an additional \$1.5 million on manual processes that should have been automated, just to manage and operate the legacy billing system.

Late in 2003, after a three-month selection process, Cobb Energy chose a new CIS application—what is now known as Oracle Utilities Customer Care and Billing (CC&B). Oracle acquired the application's vendor – SPL WorldGroup – in 2007.

Competition was fierce among the nine vendors considered. But in the end, it was essential to select on factors that would ensure future success—an application with advanced functions and a lot of flexibility, plus the ability to integrate with other software. CC&B was the software that would carry Cobb Energy through the changes—expected and unexpected—that would occur as the business evolved.

Then "Pandora's Box" opened. Since the legacy system was mostly monolithic and contained more than just the billing functions, Cobb Energy conducted a similar selection process for enterprise resource planning (ERP) and human resources planning (HRP) applications. This

"best-of-breed" approach dictated the need for an enterprise application integration (EAI) strategy to pull it all together. If it was not complicated already, now it was extremely so.

With the projects well under way, the need for enterprise-wide communication and change control was overwhelming. Cobb Energy reorganized its IT department in an effort to manage two distinct areas of responsibility: Infrastructure/Operations and IS Programs. Strategically, the organization changed the department name "IT," to "IS" to emphasize the focus on "Services".

Cobb Energy created a formal Project Management Office (PMO) to coordinate all three projects: customer information system (CIS), ERP, and HRP. Project Managers and Stakeholders met often to share progress and iron out common issues.

As the PMO made progress, Cobb Energy identified the need for formal ITIL-based processes and the organization developed its own *Foundation Processes*.

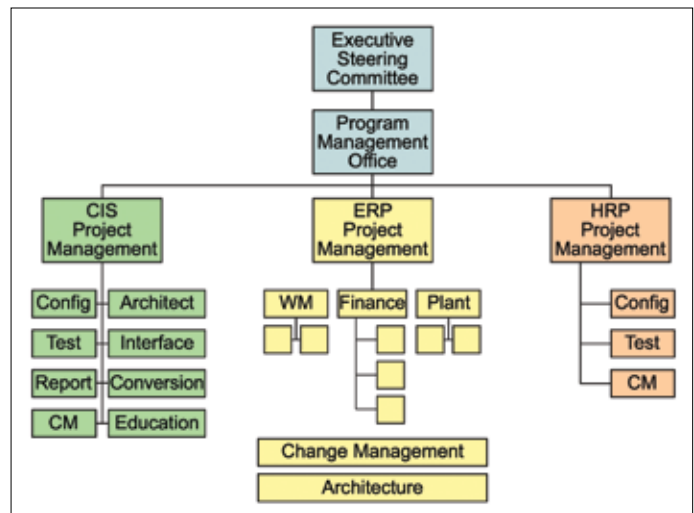


Figure 1: Cobb's CIS implementation took place within the context of two additional projects to replace the ERP and HR systems. The Project Management Office – where managers could discuss and collaborate on issues affecting all projects – coordinated all activity.



Figure 2: Crowded conditions plague almost every major implementation. The number of resources and the length of Cobb's project was a challenge for the Facilities management department. (Clockwise from top; the conference room converted to a test lab, new doublewide for project resources, renovation of existing office space.)

These eight processes help manage the bulk of the work performed today. They are well documented and are continually reinforced throughout the enterprise. These Foundation Processes are: Project Management, Change Management, Resolution Management, Configuration Management, Software Management, QA & Test Management, Education Management, and Release Management.

A highlight of current operations is the Change Control Board (CCB), which is comprised of vice presidents and COOs from most departments. As part of the Change Management Process, the CCB meets every other week to discuss change requests that meet certain criteria. It approves and prioritizes the requests given to the IS department. This team is the reason the IS department's alignment with the business is so successful.

Cobb Energy kicked off the CIS implementation in March 2004 with a target completion date of November 2005.

The Monkey Wrenches

Six months before the target go-live date, "IT" hit the fan! In the heat of CIS testing and training, the business landscape started to change. Cobb Energy terminated its existing natural gas agreement with SCANA Natural Gas, and Cobb EMC announced it was acquiring Southern Company Gas (now Gas South). For all the right reasons, this was a huge change order to the CIS project.

Cobb Energy reorganized the CIS project into three separate efforts: testing continued where possible, Cobb Energy unwound the SCANA configuration and transferred back its accounts, and work began from scratch on the new gas company requirements. The new gas company acquisition added 12 intense months to the project by incorporating a completely different platform conversion on top of the one for Cobb EMC.

In addition to this huge change order, other distractions to the project required management. They included:

"In order to be an enterprise service provider that values quality and commitment above all else, we had to transform learning into action across the IS organization by implementing a series of foundation processes and change control procedures. This allowed us the opportunity to become a highly efficient project management-oriented service provider. Our success has been attributed to high performance and customer focus."

Tim D. Jarrell
IS Programs Manager
Cobb Energy

- The legacy support company folded. Retaining key resources that understood the old data model and application intricacies was a challenge.
- The contract firm writing the conversion modules changed names and management.
- Hiring a strategic branding agency resulted in a new corporate logo and branding efforts – requiring Cobb Energy to update Web sites, checks, and invoices.
- Nearly half of the IS department had to relocate to a new doublewide trailer while a facility renovation took place. Currently, the "temporary" units are still in use!
- The IS group was tasked with supporting the creation and building of a disaster recovery center.
- The main systems integrator was acquired by a huge company.
- The CIS software company, SPL WorldGroup, was acquired by Oracle.
- And of course, there existed all the staffing problems of any long-term project like this one—people took new jobs, people got married, people had babies, people had serious medical problems, and more people had babies—nine in all.

Fortunately, advanced planning resulted in a strong management team that was able to furnish the Steering Committee with cost-benefit analyses that helped guide major decisions, such as acquisitions. The executive level support allowed the necessary adjustments along the way.

Eventually, there was a light at the end of the tunnel. But with so much riding on a long weekend and a "big bang" double conversion, the light could have been a train approaching at top speed.

Nearing Go-Live

In preparation for go-live, the challenge was to determine whether or not all parts of the project would come together simultaneously. The objective was to achieve a high level of confidence across the organization and affiliates that ensured everyone and everything (infrastructure) was ready. In this case, a "gut feeling" was not sufficient.

Cobb Energy created many documents, checklists, and models to measure the go-live "readiness," but it really boiled down to these three questions:

- Is the IS department ready?
- Are the business units ready?
- Can we maintain operational stability once we say "GO!"?

To reach this high level of confidence, Cobb Energy planned a series of "mock conversions." Each one would have reasonable goals and would build upon the previous one. Cobb Energy established the reasonable goals both to allow the team to see its accomplishments and to enable management to gauge the progress. The organization developed and managed this plan as follows:

- Six mock runs would start four months before go-live, with the last three spaced 20 days apart.
- The team established goals in two areas with many sub-components, including:
 - Stakeholder Acceptance
 - Application Functionality. 322 separate items to ensure that application functions were working as designed and data was converted accurately.
 - Application Integration. 126 items to test data integration points.

- Technical Architecture. 73 items to ensure that the architecture would be stable in a production environment.
- Organizational Readiness. 155 items measuring whether or not IS and business groups were ready to convert, use, and support the application.
- Critical Success factors:
 - Will billing be accurate?
 - Can payments be posted?
 - Can deregulation transactions be processed?
 - Can the users access the system reliably?
 - Is the architecture up to the challenge?

Implementation by the Numbers

- Number of customers at start of project: **258,000**
- Number of customers at end of project: **338,813**
- Number of internal IS staff assigned to project: **12**
- Number of business people assigned to project: **18**
- Number of contractors (on and off-shore): **70**
- Time to Implement: **3 years**, including one major redesign/ redevelopment to accommodate Cobb EMC's acquisition of Gas South and termination of previous agreement with SCANA, plus the forward thinking to configure the system to work in an ASP billing services environment.

With so many inputs and components to measure, Cobb Energy needed a quantifiable and measurable system to calculate go-live readiness. For Stakeholder Acceptance, the organization measured current status vs. the ultimate goal using this scale:

- 1 - Ready.
- 2 - Ready but risky.
- 3 - Not ready, with critical work to do.

Go Live Rating: 2.41		Application Functionality			
Go Live Status	Average	(1) Ready for Go Live	(2) Risk for Go Live	(3) Not Ready for Go Live	Total Items
Overall	2.26	67	38	101	206
Base Functions	2.31	10	0	19	29
Business Process	1.70	57	13	28	98
Reporting	2.42	0	0	9	9
Conversion	2.61	0	25	45	70

Figure 3: This chart shows how Cobb evaluated its application functionality readiness four months before go-live. The chart's groupings permit managers to identify not just individual problems but entire areas needing significant attention. Color coding further enhances managers' ability to see the big picture.

Measurements for the Critical Success Factors were different. The team established a separate goal for success of each mock run to be able to judge whether or not the progress was acceptable. For instance, 120 days from go-live, Cobb Energy decided that it could achieve a 60 percent bill generation rate. Then it raised the bar higher and higher for each succeeding mock run.

Project Critical Success Factors-Mock 2				
Go Live Status	Score	Success Criteria	Current Status	Additional Comments
Overall	1.90			
Ability to Bill	1.00	60% Bill Generation 54% Billing Accuracy	See Accuracy Results	Bill Print issues outstanding
Ability to Accept Payments	1.00	60% Payments Applied Accurately	See Accuracy Results	
Ability to Process AGL Transactions	2.00	65%+ of Consumption (CONS) processed	See Accuracy Results	Some issues with exception situations. Unable to test certain transactions in full volume environment.
CSR Access to Application	2.00	300 concurrent users with average sub 5 second response time.	Tested successfully with 300 concurrent users.	Adjusting architecture settings alleviated timeout problem. Need to monitor at go live.
Stable Technical Architecture	3.00	Full Volume Processing of all batch and online processes.		CC&B Batch window at approximately 10 hours.

Figure 4: This chart shows Cobb's progress on critical success factors 120 days before go-live. Note that for these evaluations, scoring and color-coding represent measurements against the goal for the specific mock run, not against an ultimate desired outcome.

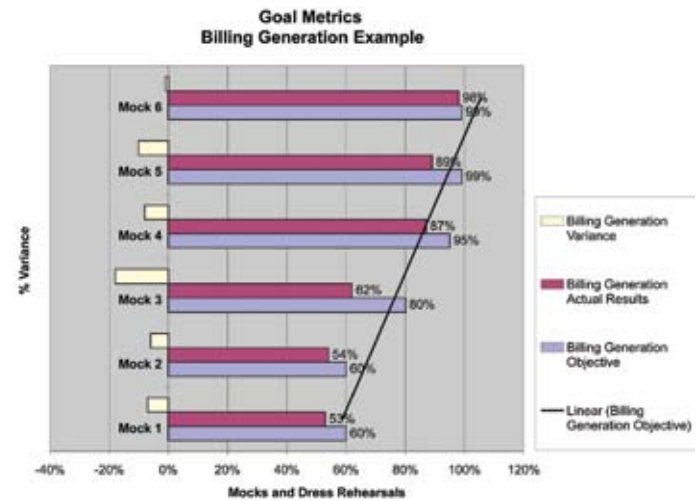


Figure 5: Establishing different goals for each mock run permitted Cobb stakeholders to determine which groups were making adequate progress toward the goal and which were falling behind. In this example, while the billing generation team made progress between mock runs two and three, managers using this chart could immediately identify the need to step up the pace following mock run three.

The final mock run was a resounding success. The team had set very high goals and achieved every one of them. The level of confidence was high enough to pull the trigger on the go-live conversion weekend.

Measuring Success

After a year of operating in the newly overhauled environment, the team took a look back to measure how accurate the estimated savings and productivity improvements truly were. Some of the results include:

- Improved operational efficiency. Cobb has reduced the time needed to complete nightly batch processes, including uploading meter reads, payments, and bill creation, by nearly 80 percent—from 36 hours to seven hours. The organization can clone a separate reporting environment during this window as well.
- Introduction of Web self-service. Customers can now change their profiles, sign up for bank draft payments or electronic billing, view previous and current bills, and request starts and stops of service.
- Combo billing—now done in minutes, not days, with customer-specific messages and bill structure.

- Better communication of the entire severance process. Today, customer service representatives (CSRs) can see all collections activities. They know when letters, calls, etc. are going out. They also know how to use different collection criteria for different customers.
- On-demand billing for immediate bill creation vs. next day.
- Interactive Pay Plan management that lets CSRs analyze customer history and easily determine eligibility. Today, Cobb can achieve better Pay Plan compliance and it has eliminated the majority of escalations.
- Better sales and marketing. Today, Cobb can quickly configure, test, and deploy new rates. CSRs can quickly determine customer rate eligibility for any of Cobb Energy's products and services. The organization has decreased new-order entry time by more than 50 percent and has completely eliminated incorrect rate setup. Cobb has achieved all of this without a separate customer relationship management (CRM) package.
- Reduction in the Cancel/Re-bill time by 80 percent.
- Reductions in the quality assurance team by four people, allowing Cobb to reassign staff to more value-added tasks (i.e. formal testing team, the new Business Intelligence team).
- Elimination of weekend system operators.
- Reduced training requirements from six months to one month, due in large measure to the requirement for staff to take four custom, Web-based training classes before attending an instructor-led class.
- Replacement of manual and paper interfaces with programmed integration with field service, asset management, outage management, and geographic information systems (GIS) applications.
- Standardization across all departments. Enterprise-wide use of Oracle databases and Java development. The reduction from 6,000 reports, letters, forms, and queries to only 300 now.
- Bringing bill and letter design in-house. As a result, the internal staff is able to tailor communications to the customer while also increasing the quality of the bill and literature. Cobb has significantly reduced errors in the final products that previously resulted from miscommunications with third-party vendors.
- Transformation of the application environment from predominately programming to a highly flexible configuration engine. This eliminated the dependency upon more than a dozen contract programmers and allowed the three internal programmers to take on more value-added responsibilities.

"With Oracle Utilities Customer Care and Billing, we satisfied approximately 90 percent of our requirements 'out of the box.' We are expecting many years of functional and economic benefits from our new customer care system."

David Johnson, Cobb Energy, COO
(Formerly Manager of Customer Service, Billing & Meter Reading)

As for the ongoing results of the Critical Success Factors, Cobb Energy is maintaining:

- 99+ percent billing accuracy.
- 99+ percent accuracy in payment processing and posting.
- 99+ percent transaction processing accuracy.
- 97.9 percent application up time (excluding scheduled maintenance).
 Note that since stabilization and a recent upgrade occurred, the application has averaged 99+ percent uptime. Similarly, the network and database uptimes have averaged 99+ percent.

Conclusion

Every IT professional has an implementation war story. Cobb Energy's is undoubtedly not the longest or the most difficult. But what made it all worthwhile was the outstanding success of the results. Everyone on the team knew that all those hours, all those weekends, evenings, and missed family events were worth it. Many people went through the Kübler-Ross grief cycle multiple times. Finally, it has been very gratifying to retrain staff and put employees in roles where they can have significant job satisfaction – all while providing a quick and rewarding return on investment to Cobb Energy.

Having this success acknowledged at the 2008 CS Week Conference with the Expanding Excellence Award was a tribute to the hard work from many people, including the support from upper management.

But, right when everything seems to be going smoothly, someone throws a new Change Request into the mix. To date, none of the requests have been as large as the ones already completed. They will come, and Cobb Energy's team will be ready for them. ■

About the Author

Bob Arnett is a North Carolina native, and graduated from Appalachian State University with a degree in Information Systems. Bob has worked in a variety of roles in the IT industry during his career including operators, programmers, practice managers, sales support reps, and VP of Sales. Prior to working with Cobb Energy, Bob spent over 20 years in the IT industry with a number of companies, including 15 years with Digital Equipment and 2 years with Ernst & Young. Bob was hired by Cobb Energy in 2003.

In 2007, Bob was named the "CIO of the Year" by the Sierra Energy Group, an international award presented to Utility executives. In May of 2008, his team accepted the "Best CIS Implementation" award for their complex installation of Oracle Utilities Customer Care & Billing application.

Project Critical Success Factors			
Go Live Status	Score	Success Criteria	Current Status
Overall	1.00		
Ability to Bill	1.00	99% Bill Generation 99% Billing Accuracy	See Accuracy Results
Ability to Accept Payments	1.00	99% Payments Applied Accurately	See Accuracy Results
Ability to Process AGL Transactions	1.00	99%+ of Consumption (CONs) processed 90% of all other transactions processed	See Accuracy Results
CSR Access to Application	1.00	300 concurrent users with average sub 5 second transaction response time.	Tested successfully with 300 concurrent users averaging less than 2 seconds.
Stable Technical Architecture	1.00	Full Volume Processing of all batch and online processes. Six Hour Primary Batch Window	No reported issues. Batch window met within required time.

Figure 5: The "all green" status gave Cobb management and staff complete confidence that they were ready for go-live.