AEIC Customer Information System (CIS) Strategy

White Paper

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Executive Overview

Background

The Association of Edison Illuminating Companies (AEIC) was founded by Thomas Edison and his associates in 1885 and is one of the oldest organizations in the electric energy industry. AEIC encourages research and the exchange of technical information and best practices through a committee structure, staffed with experts from management of member companies. AEIC committees exchange information, ideas, and solutions to succeed in the ever-changing electric industry. AEIC also provides highly valued literature, including white papers on various topics, load research manuals and publications, and underground cable specifications and guides.

Since its inception, the Association of Edison Illuminating Companies has kept its eyes directed toward the future, expanding its membership internationally, and focusing its energies on finding solutions to problems of mutual concern to electric utilities, worldwide.[1]

AEIC Technical Committees

Through a committee structure, the association addresses the technological problems of planning, building, and operating an energy system to serve multiple classes of customers. The AEIC's seven committees are the backbone of the organization, with each committee staffed with employees from senior management of member companies. Committees work with manufacturers and suppliers to solve problems of mutual concern and to ensure that manufacturers are prepared to meet the needs of the industry.

The AEIC Customer Service Committee identifies and explores key and emerging customer functions, shares insights, and addresses the connected customer's changing expectations of their electric utility. Customer trends are impacting utilities today and include the following:

- **Broad Focus:** Digital everything plus continued service via traditional communication channels; active consumerism; tailored customer service experiences; employee as customer/customer as employee; and advertising via TV, radio, print, internet, etc.

- **Energy Focus:** Changing energy sources, emerging energy management technologies, new entrants, growing interest in energy data, and shifting roles for consumers in distribution markets.[2]

Currently, the AEIC Customer Service Committee sponsors a Customer Information System (CIS) Subcommittee. This subcommittee, led by Robert Cheripko of American Electric Power, is charged with evaluating the experiences of AEIC member utilities who have recently replaced / upgraded or are in the process of replacing / upgrading their existing

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[1] The Association of Edison Illuminating Companies (AEIC) website, http://aeic.org/.
[2] AEIC Customer Service Committee webpage, http://aeic.org/committees/customer-service/.

Customer Information Systems (CIS). The objective of this assessment and subsequent report is to provide member utilities with reference materials that can be leveraged by those contemplating new CIS systems or in the process of implementing a new CIS to facilitate a smoother implementation. The CIS Strategy White Paper is planned to be the final deliverable of the CIS subcommittee, given the need to focus AEIC Customer Service Committee resources on other topics within the Broad Focus and Energy Focus categories mentioned above.

Assessment Approach

The CIS Subcommittee developed a strategy survey designed to elicit information about leading CIS vendors and products, industry trends and best practices, the process of replacing a CIS, and the benefits realized through CIS conversion.

By telephone, the CIS Subcommittee interviewed eight member utilities who have recently-implemented, or are in the process of implementing, a new CIS. These interviews covered the entire project lifecycle, including business drivers and project initiation, project team structure and methodology, schedule and implementation, change management, post-implementation operational impacts, challenges and successes, and lessons learned.

Appendices A and B of this document consolidate the data collected by the CIS Subcommittee to inform and guide the strategies of utilities seeking to replace their Customer Information Systems. Note that not all responses obtained through interview can be compared apples-to-apples. This is because six of the eight member utilities were replacing their legacy customer information systems, whereas one utility was merely refreshing its existing CIS, and another was engaged in the initial planning stages of a CIS replacement.

The following section of this document summarizes the key findings from the CIS Subcommittee's interviews with the eight AEIC member utilities.

Summary of CIS Survey Results

CIS Landscape

The existing Customer Information Systems (CIS) of the member companies interviewed have been in service for many years. The aging of these legacy systems, their related infrastructure, and the subject matter experts (SME) and system support personnel who know these systems and their business processes are key drivers for the business case to seek replacement systems. Other benefits cited for implementing new systems include being able to create better Customer Experience functionality and to accommodate rate cases much more quickly and effectively.

Legacy System Profile

- Of the utilities interviewed, the average age of their legacy CIS was **29 years**, with one system in service for under 20 years, one that has been in service for more than 40 years, and the remainder falling within the 20-to-30 years of service range.

- Collectively, these systems have been in service for over two centuries — **261 years**.

Business Case for CIS Change

- At least half of the respondents cited these factors as part of their business case:

    - Aging infrastructure,

    - High cost and complexity of making changes,

    - High system support/maintenance costs, and

    - Aging and scarcity of SME and system support expertise.

- The need for more Customer Experience functionality and a web-based Customer Experience was cited by two of the interviewed utilities.

- Executive leadership or corporate strategy changes can lead to shifts in project emphasis — sometimes in the midst of a CIS conversion. A number of the utilities interviewed experienced changes in project timing or strategy over the course of their implementations.

    - Emphasis on the replacement of aging infrastructure, standardization, and process efficiency can give way to enhancing the Customer Experience becoming the top priority.

    - At one utility, a merger announcement well into the project's timeline led to a much greater focus on a smooth merger with no negative news. The CIS team was notified that their top priority was to have a smooth implementation free of any negative publicity as the merger proceeded. Therefore, the team felt it imperative to avoid the possibility of billing system issues becoming a discussion point in any merger-related

meetings. This directive influenced back-office and front-office staffing levels and other key project implementation decisions.

- For another utility an upcoming rate case, effective in July, drove the CIS implementation schedule. There was a desire to complete a quarter-end close before making the changes required by the rate case. The implementation date was therefore chosen to be in March of that year, which allowed two quarter-end closings before implementing the rate case changes. While October would have been an optimal time to cut-over from a call volume perspective, the month of March also is not a high call-volume month in their service area.

CIS Implementation Metrics

- **Average cost per customer:** $89 (for CIS system conversion projects only)
- **Cost per customer range:** $55 – 114 (for CIS system conversion projects only)
- **Average duration of CIS implementations surveyed:** 36.7 months
  - Low = 23 months,
  - High = 72 months (projected)
- **Average number of interfaces involved in the conversions:** 72 interfaces
  - Low = 55 interfaces
  - High = 90 interfaces

CIS and System Integrator Vendors

- **Oracle and SAP** are the two vendors supplying the systems to replace the legacy systems being retired.
- No single system integrator has cornered the market. Some companies use consultants in the system integrator selection process to save time and ensure they acquire the "A team" integrators.
- Accenture, Deloitte Consulting, IBM, Infosys, PwC, Five Point Partners, TMG Consulting, Oracle, and EY are some of the system integrators selected by member utilities to lead or assist with the conversion project.

Benefits Gained by Utilities Replacing Their CIS

Four of the eight member utilities participating in the strategy survey identified **the retirement of aging systems and infrastructure** as a primary benefit of their CIS replacement / upgrade project.

Other key gains cited by the utilities include:

- Decreased reliance upon aging or single sources of knowledge;

- Increased Customer Experience functionality — and specifically, a web-based Customer Experience;
- The ability to make system changes efficiently:
  - Accommodate rate cases more quickly and cost-effectively;
  - Handle complex rates (Demand, RTP, complex pricing structures);
- Call center efficiencies;
- Increased lifespan of an existing legacy system (via upgrade or refresh).

Challenges

Member utilities described several significant challenges to the successful replacement or upgrade of their CIS. Foremost of these were:

- **Understanding the end-to-end impacts of using an integrated system after converting from two separate CIS systems.** Changing one area requires coordinating with other areas.
- **Needing more high-level business decisions, and more of a process and timeline for obtaining timely decisions.** Service territory is in two states with different due dates, which requires regulatory involvement. It was difficult and time intensive for the two states to standardize and complete designs due to decisions that needed to be made.
- **Gaining buy-in from the call center associates.** The project team let the call center associates know that the changes were "associate built" and that the system pulls the information they need from multiple legacy systems and external applications.
- **Using off-shore resources who did not understand the utility business and CIS systems for bill print.** The off-shore resources were good coders, but the communication barriers significantly impacted their effectiveness.
- **Managing the scope of the project and managing priorities after go-live.** Once the project team is "back in the real world," their focus is spread in many different directions (versus the single goal of implementing the CIS). Post go-live is a balancing act, with changes now affecting two companies instead of one, competing priorities, and a requirement to thoroughly vet the proposals.
- **Achieving stabilization.** There are new and different support needs throughout the company (e.g., centralized exception team, business support, replication, and workflow).
  - End-to-end control points are needed to detect things going wrong, and customers being unbilled or inaccurately billed.
  - There is a need to consider the impact of project decisions on operations (e.g., consolidated versus unconsolidated billing, business partner setup in self-service portal).
  - Re-orgs complicate things because new business owners don't have knowledge of decisions they inherited.

- There is a deficit of internal process and system knowledge; it takes time to build proficiency.

- **Determining root cause for unbilled accounts.** The new system caused tectonic shifts in the company with regard to who does what, and who is responsible for daily tasks. Roles and processes changed with the new system.

- **Monitoring and managing the backlog of exceptions.** Releasing the system integrator too soon after go-live created unexpected support issues. As a best practice, keep the system integrator on site for a period of time after go-live, and available to provide continuing support.

Best Practices / Key Takeaways

The interviews with the member utilities produced a wealth of observations, insights, and lessons learned, which are captured below by category.

Strategy

There was consensus among the utilities replacing their CIS in these areas:

- A common strategy in all companies replacing their CIS was to avoid or minimize customizations.

- The waterfall development approach was used by all companies interviewed except the one that was making improvements to their existing system. That utility felt that the Agile methodology helps to make improvements — a better release with each demo.

- The "big bang" conversion approach was used at all companies with the exception of the one company that was using phased releases of enhancements to its existing CIS.

Other CIS implementation insights shared include:

- Be proactive with regard to change management and communications. Advise the Commission and the media of the CIS project, provide regular progress updates, and manage their expectations. Give stakeholders opportunities to offer feedback.

- Cultivate and promote business ownership of and engagement with the new CIS. Consider implementing a business readiness scorecard to gauge the readiness of business units to use the new system. When departments are responsible for their own scores, people are more likely to engage.

- Use a change management approach tailored to stakeholders of field processes, as these processes may differ by territory.

- Train call center contractors to be specialists, rather than "jacks of all trades," which takes too long and poses a steep learning curve.

Planning

- Choose the right time to implement.

- Conduct a thorough preplanning effort that includes third-parties.

- Devote several months to business readiness, and understanding how existing processes work. Document how these processes will/should work in the new system.

- Research lessons learned from past internal projects, the pain points of other utilities who have completed a conversion, and insights shared by system integrators.

- Review and approve the Statement of Work and Master Services Agreement with the system integrator and the legal team. Engage the appropriate legal experts to ensure all terms, procedures, change approval processes, and intellectual property details are included and correct. Make sure the terms enable the project team to remove and replace system integrator team staff who do not have the appropriate skill sets.

- Leverage the Agile methodology when making improvements to existing systems. This can provide a better release with each subsequent demo.

- Be prepared to provide significant end user training. Consider offering experience labs, which enable end users to learn how to navigate the system.

- Invest more time in the examination of business processes through the Customer Experience lens. Conduct more journey mapping than process mapping.

- Do not underestimate the importance of pre-work. Document as-is process flows clearly and comprehensively to ensure that to-be process flow discussions will proceed smoothly.

- Spend the time to document detailed business requirements. It is a lengthy process, but worth every minute.

- Do not underestimate the amount of work that will be needed on the business side. Expert skill sets cannot be outsourced easily.

- Ensure that project team members have the levels of business and subject matter expertise needed for a successful implementation.

- Ensure that IT staff have a mix of skill sets and adequate depth of knowledge.

- Do not overlap phases of the project — this is tough on resources and makes it difficult to maintain project goals.

Structure and Governance

Nearly all the companies interviewed referenced the roles of the Program Management Office (PMO) in the success of their projects. That and the engagement of steering committees and executive level sponsors or core teams were described as a key component of successful projects. Specific details regarding the PMO, Steering Committee, and Executive team, as well as the composition of the project team, can be found in the Project Structure sections of Appendix B.

Listed below are additional insights offered during the interviews:

■ Put the right governance in place for the project and adhere to it.

■ Forge a strong partnership with the project management office or other governance authority for assistance with accounting and change request negotiations with the system integrator.

■ Invite an analyst from the vendor to participate in a design session, solution approach meeting, or defect review to ensure the fit of the design or solution, and to verify that it aligns with the vendor's product roadmap. Vendor participation provides a good sanity check before solving something in a certain way.

■ Include internal auditors on the CIS conversion team, and bring in external auditors at key checkpoints. Be prepared and able to stand up special teams to handle potential SOX and security items identified by the auditors.

Organizational and Customer Change Management / Training

■ Obtain the support of the steering committee or other governance body to be able to backfill for employees dedicated to the CIS team and to have trainers available.

■ Provide targeted training that is tailored to the work done in individual departments. Conduct practice sessions that cover only what those departments need to know for their daily jobs. Build role-based or department-specific labs that are designed to walk through a day in the life of business personnel in that role / department.

■ Create and prepare more super users, who often prove critical to the success of the project.

■ Implement a strict and structured approach for transfer of knowledge. Internal company team members with knowledge are scarce, and it is a struggle to ramp up the skill sets.

■ Discuss training for field personnel. Prepare customized role-based training for field work done by the operations team. Be willing to negotiate the proper length and timeframe for training with field personnel.

■ Schedule adequate time for training. One company trained 1,100 employees, with 91,000 classroom training hours spent on training for the new system.

■ Conduct online, instructor-led classroom, online simulations, and follow-up practice sessions. Divide users into Super User, Heavy User, Casual User, and Read only groups. Require completion of eLearning modules as prerequisite to classroom training; provide good exposure and foundation to the system which makes classroom training more efficient and effective. Perform online simulations of actions in the system and provide good reference materials for use as refreshers, particularly for users who were early training participants or for users who may not perform certain functions regularly. Leverage guided practice activities to keep users' skills refreshed and provide an opportunity for improved proficiency between classroom training and go-live.

■ Develop a "sandbox" for call center people to become familiar with the system. Use the call recording system, put x number of calls in the queue, and have them execute the

transactions in the sandbox. Capture the time it will take to do a transaction in the new system. Remember that 450 people (or more) can't all be trained at once.

- Set up an information website to communicate directly to the customers who would be impacted (~ 500,000) due to program changes. One company delivered five to eight directed communications over a four-month period, and website hits averaged six to seven minutes spent on the site.

Strong Project Team

- Encourage the conversion team to perform many iterations of the data, which will flush out configuration changes that need to be made and may provide opportunities to streamline the inventory of reports.

- Exercise care when creating a project team. Ensure the team leads work well together. Select team members with good attitudes, dedication, the ability to focus, and attention to detail. Be especially particular when selecting testers. Provide opportunities for the project team to socialize and bond as a team.

- Leverage business personnel for their expertise, and look for ways to align and optimize processes with behaviors.

- Co-locate the IT resources with the rest of the project team.

- Include a web experience expert on the team to guide the design of the user interface, improve navigation, and increase overall usability of the system.

- Encourage and facilitate the transfer of knowledge from the system integrator to the project team and business personnel. The team must learn the system, know how to configure it, and become self-sufficient. Shadow the system integrator and be able to do what they do. Include ample time for knowledge transfer in the project plan.

- Recruit a proactive project sponsor who can "carry the torch" for the project to ensure goals are achieved.

- Provide the project manager and/or project team members the opportunity to observe, shadow, or cross train with the business support team after go-live to see and understand what happens after go-live. Look for ways to promote knowledge sharing.

- Engage the stakeholders to own the solution, track progress, and own the go-live criteria to make an informed decision at time of implementation.

- Deploy current subject matter experts to the project to ensure the most knowledgeable people are available to solve problems and make quick decisions about business impacts and processes.

Design / Data Conversion / Testing

The activities listed below were described as critical to a successful conversion. The quality of the converted data has a large impact on the number of exceptions encountered upon go-live. Several utilities also cited testing to the extent that they had a good feel for the impact of process changes and change management work that would be required upon go-live.

Additional detail regarding Planning / Development / Data Conversion and Testing can be found in those sections of Appendix B.

Other insights shared during the interviews include:

■ Be sure to capture detailed technical interface requirements.

■ Do not build a process around an exception. Leverage people who can see the big picture and build around what happens the majority of the time.

■ Use a data mapping approach that focuses on the new system rather than the legacy system. Preclude data gaps by identifying the data that needs to be accommodated in the new system.

■ Start testing with converted data as early as possible. Do not waste time testing with "contrived" data when converted data is available.

■ Test the aging reports in a more focused way. Be mindful that the system may not perform as expected.

■ Do not compromise on the number of Operational Readiness Testing cycles. Target two to four cycles. Encourage and engage as many resources as possible from both Functional and Technical teams. This is the closest simulation to what will happen at go-live and is an opportunity to expose defects and other challenges that were not apparent in SIT or UAT.

■ Concentrate more on reporting development efforts — consider bringing in a vendor that knows the reporting data structure to assist with the development of reporting.

Go-Live

The go-live plans for the utilities interviewed were varied, but all were well thought-out and took into account the requirements and desires unique to each company. Specific go-live criteria implemented by the utilities, go-live mitigation actions, and operational go-live metrics shared during the interviews can be found in the Go-Live section of Appendix B.

Some additional insights offered during the interviews were:

■ Develop strong go-live criteria and entrance and exit criteria for all phases. Establish objective go-live criteria well ahead of time (i.e., prior to need) to provide a cross-functional objective view of whether the project team is ready for go-live. Metrics should be objective, measurable and meaningful.

■ Go live when it works for the business, not the project schedule.

■ Accept that things will take time. The utility felt fortunate in that after more than a year of testing, there were not many major flaws. The project team had to tweak their third-party suppliers' move in/move out procedures (e.g., data exchanges with suppliers for drops, enrollments, adds), and it took the better part of 6-12 months to stabilize these functions.

Stabilization / Post-Implementation

- Expect a bumpy ride. Stabilization of the system may require 12 to 18 months.

- Seek out the super users. At the UAT phase of the project, super users were created from back office and front office team members. These super users were immersed in the system and performed all of the User Acceptance Testing. At go-live, their expertise was leveraged when they became floor walkers, answering questions, being the expert, etc. They were also the champions of the system, folded back into their teams, which was helpful at go-live. The Super Users included naysayers, poor performers, and high performers to ensure a varied mix of people.

- Provide frequent updates, and continue to provide detailed reports to management after go-live. Conduct a formal transfer of responsibility for reporting from the project team to the business unit owners.

- Do not release post-go-live staff augmentation too early.

- Involve internal auditors early in the CIS implementation to increase their understanding of differences between the old and new systems. Prepare them for future reviews of the implementation.

Resources

For more information about CIS conversion projects, please refer to the websites and publications listed below.

- Oracle website, **https://www.oracle.com/industries/utilities/products/billing-solutions/index.html**.

- SAP website, **https://www.sap.com/industries/energy-utilities.html**.

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Appendix A — Survey Questions

Listed below are the topics and questions explored during the CIS Subcommittee's telephone interviews with member utilities that have recently implemented or are in the process of implementing a new customer information system.

Section 1: Project Overview

1. **Solution Overview**

    a. Describe the system being replaced – age, type, vendor (if CIS was not developed in-house).

    b. What system did you select? OR, what system(s) are you considering?

    c. What system integrator did you select? OR, what system integrator(s) are you considering?

    d. What is your philosophy with respect to customizations?

    e. Were there (will there be) other applications upgraded, modified, or implemented in conjunction with your new CIS?

    f. What was (is) the business case for the change?

    g. What was (is) the estimated cost per customer?

2. **Project Structure**

    a. About the project team:

        i. What is your project team structure? What project team structure are you considering?

        ii. What is the size of your project team (by employees, consultants/contractors)?

        iii. Describe the roles on the team

        iv. If some team member roles are less than fully dedicated, what percentage of their time is spent on the project?

        v. Are you using (planning to use) contractors beyond Systems Integrator (such as for Training Development)?

    b. What is (will be) your conversion approach (e.g., big bang, pilot, phases, etc.)

3. Project Details

    a. What is your current project phase (e.g., planning, start-up, development, testing, post-implementation, stabilization period, post implementation — returned to normal operation)?

    b. What was the duration of each project phase/stage?

        i. Planned and actual?

    c. How many interfaces to CIS are/were involved in this conversion?

    d. What was/is/will be the approach to development (e.g., Waterfall, Agile)?

    e. If waterfall development approach was /is used,

        i. Talk about your approach to requirements gathering.

        ii. How many requirements do you have?

    f. How many test scripts do you have?

    g. If you are in post-implementation,

        i. What is the duration of:

            1. The blackout period?

            2. The cutover window?

            3. The stabilization period?

        ii. How did the final cost of the project compare with the estimated cost (% over/under)?

Section 2: Insights Derived

4. Project Initiation

Please discuss:

    a. The vendor selection process.

    b. The system integrator selection process.

    c. The business requirements gathering / BRD process.

5. Development

Please discuss:

     a. Your development process.

     b. How your functional team was used during the development phase.

     c. Pre-release testing.

     d. Code migration.

     e. Defect management.

6. Testing

Please discuss:

     a. System integration testing (SIT).

     b. User acceptance testing (UAT).

     c. Regressing testing.

     d. Operational readiness testing (ORT).

7. Conversion

Please discuss:

     a. Cutover planning.

     b. Data cleansing.

     c. Data migration.

     d. Dress rehearsals.

     e. Actual cutover, if you are in the post go-live phase of the project.

8. Organizational Change Management

Please discuss:

     a. Training development and deployment.

     b. Knowledge transfer (technical support).

9. Stabilization

Please discuss:

      a. Defect management.

      b. Defect identification, confirmation, remediation.

      c. Stabilization criteria.

      d. The role of super users / power users.

Section 3: Post Implementation Operational Impact

10. Contact Center

Please talk about the new CIS system's impacts on:

      a. Call volume.

      b. Average handle time (AHT).

      c. Service levels / average speed of answer (ASA).

      d. Abandon rate.

11. Revenue Management

Have there been any changes as a result of the new CIS in these areas:

      a. Billing error volume?

      b. Billing exception volume?

      c. Meter read upload performance?

      d. Batch processing performance?

      e. Payment processing?

      f. Collection?

12. Financial

Have there been any changes as a result of the new CIS in the area of:

      a. Customer operations O&M per customer (% increase/decrease over time)?

13. Mitigating Actions

Were any mitigating actions needed in these areas?

 a. Operations staff augmentation:

  i. Use of contractors, employees?

 b. Suspending disconnects for non-pay?

 c. Heavier utilization of IVR, other self-service channels?

Section 4: Recap of the CIS Replacement Experience

14. Recap Questions — What were the:

 a. Three things your team did best?

 b. Three biggest challenges, and how they were overcome or managed?

 c. Three things you wish you would have done differently?

 d. Benefits realized (for those who have recently converted)?

Appendix B — Survey Results

The CIS Subcommittee compiled, reviewed, and distilled the feedback collected during the interviews with member utilities. The following sections of this document present the results of those interviews. **Note:** Please contact the AEIC Customer Service Committee with any questions about the survey data.

Project Overview

- The average age of legacy systems reported was 29 years.

- Oracle and SAP are the two vendor systems replacing the legacy systems being retired.

- No single system integrator has cornered the market. Some companies use consultants in the system integrator selection process. Popular system integrators include Accenture, Deloitte Consulting, IBM, Infosys, PwC, Five Point Partners, TMG Consulting, Oracle, and EY.

- One company looked at Gartner's top quartile system integrator vendors and used Five Point Partners to help them with the selection process. Out of four firms considered, one was eliminated one due to excessive cost/unrealistic timeframes proposed. The other three were evaluated rigorously. The project team set up an evaluation methodology and interviewed the team that would be assigned to the project. Other criteria: Did the SI understand the complexity of this conversion? Were their proposed implementation schedules realistic given the complexity? What referrals were available? The utility was most comfortable with Accenture, whose Statement of Work named specific players that couldn't be changed out but also outlined the process for changing out a resource. Accenture realized the complexity of the project and actually changed out the intended lead for one who had more experience with AMI meters.

- Regarding customizations:

  - Go into the project saying "no customizations." Refresh your system/processes; don't just build the old system again.

  - Avoid customization. Change the process, not the system.

  - No systems are ready to handle an American utility's needs out of the box.

  - Leverage off-the-shelf functionality.

  - Minimize customizations, or avoid them wherever you can (IT advice).

  - If needed to extend functionality, customization would be considered for Regulatory, Legal, or current functionality that doesn't exist in the new system.

- Other applications upgraded, modified, or implemented in conjunction with CIS:

  - One utility enhanced several other systems because they could not interface with the new system. These included Equifax; a work management system; a meter test system, and Thompson Reuters (used for sales tax computations).

- Another utility's philosophy was to minimize any impacts to edge applications where possible, and the only changes to those edge apps were done to accommodate interfacing with CC&B. Oracle's Market Transaction Messaging (EDI transaction processing) application is also being implemented.

- CIS was the last "massive integration" of IT systems at this utility. Previously, they had upgraded their OMS, GIS, Work Management, and Web systems, so the organization was accustomed to converging around technology

- As part of the CIS Replacement effort, the following applications will also be implemented: Customer Self-service application (Oracle); MDM (Oracle - building the interface to provide CC&B with billing determinants); New Knowledge Management System (not Oracle); and CRM (Oracle).

- This utility also implemented Oracle's Mobile Workforce Management, IBM's Maximo, and OUCSS, Oracle's Utilities Customer Self Service (without the portal part) in conjunction with the CC&B implementation. Outage Management and orders functionality were already integrated in their legacy systems, but these functions were being converted as the company concurrently was upgrading to a new distribution management/outage system, which went live in January, two months ahead of CC&B, which went live in March.

- Primary reasons / business case for replacing a legacy CIS:

  - Aging infrastructure,

  - High cost and complexity of making changes,

  - High system support/maintenance costs, and

  - Aging SME and system support expertise.

- The need for more Customer Experience functionality and a web-based Customer Experience was cited by two of the interviewed utilities.

- External forces can drive directional shifts in implementation projects like these (comments from three utilities on this topic)

- The need for more Customer Experience functionality and a web-based Customer Experience was cited by two of the interviewed utilities.

- Strategic drivers can change with executive leadership changes when a utility is acquired in the midst of a CIS conversion.

  - Customer Experience was not the #1 objective for one utility going into a CIS project — it was more about replacing aging infrastructure, standardization, and process efficiency. With the acquisition, Customer Experience became #1.

  - Prior to the acquisition the company had mobile apps in mind, plus operationally syncing gas and electric operations together for standardization and process efficiency, such as electric and gas on a single bill. Bills, payments, and credit/collections have to be in sync between gas and electric to pull this off, so as a result of these significant efforts, they now have the option of combining services or leaving them separate; consolidating by Premise, Individual, or Bill. However, the new

management has placed a lot less emphasis on standardization and process efficiency.

- At another utility, a merger announcement 1.5 years into the project resulted in a much greater focus on a smooth merger with no negative news. The implementation team was told that it was a CEO priority to have a smooth implementation and to stay out of the public eye as the merger proceeded. Knowing that company executives would be testifying in front of the various state commissions on the benefits of the merger, the team felt it was imperative that no billing system questions would arise in those meetings. This directive factored into the back-office and front-office staffing levels and other implementation decisions that were made for the project.

■ One utility utilized both a pseudo-agile and a pseudo-waterfall methodology after a period of reassessment. This utility would caution against the use of agile development for an implementation the size and complexity of CIS.

Project Structure

■ The PMO provided oversight over business unit Functional Teams, Data Conversion, and Information Management. The Functional Teams included Customer Service, Billing & Rates, Device and Service Management, FICA, and Multi-Channel Foundation.

■ The Steering Committee had cross-functional representation, was supportive, and advised the project team when necessary. A list of customizations was brought to the Steering Committee for approval. The project directive was "out of the box," so the customizations required business justifications prepared by the business units requesting the customization. The project ended up with 7 or 8 customizations.

■ There was core team ("filtering group") of four, which included two functional and two IT members — Director of IT, Manager of IT, Director of Customer Service, and Manager of Customer Solutions.

■ Project managers met on a weekly basis to work at the detail levels.

■ The project director (the money guy) watches the budget and project costs, but is also the buffer between the "worker bees" (Business Leads) and the Executive Core Team, which has oversight over the entire project. PwC provides counterparts to work with company leaders.

■ The Call Center Director is serving in the Change Management role, and doing double duty because it's an important role. There was a full-time person in that role, but they left the company. The project team tried to absorb the role among the business leads, but determined that they needed to recruit the person currently serving in this role.

■ The project team included a program director, who was totally responsible for the project; a program management lead; and leads from each work stream. There was a very disciplined and structured reporting process: Monday — weekly report to the PMO; Thursday — share status meeting, with all business units in attendance; and Friday — status of the program, which included a 90-day outlook for the program. All decisions and meeting minutes were stored on SharePoint.

- Meetings were designed to bring stakeholders along all the way through the project. Do not underestimate the time it may take for leaders to be engaged in updates and communications!

- The project team set up:

  - Bi-weekly meetings with Enterprise Risk Management to maintain their awareness of dependencies and escalate of there were interdependency risks;

  - Monthly meetings with the Financial Business Office to make them aware of expenditures and budget status;

  - Monthly in-person vendor management meetings to address issues. At each meeting, the team would ask three questions: 1) Are there any communication gaps? 2) Are the vendors on-track, or off-track? And 3) What can we do differently to make things better?

  - Every third week of the month — Steering Committee;

  - Quarterly Executive Steering Committee meetings where company executives could ask the key vendor executives where we were on the project; and

  - Quarterly reports to the CEO covering high-level deliverables and budget updates.

- From a QA perspective, it was advantageous to run everything through three PMO entities — TMG QA consultant, Internal Audits, and Enterprise Risk Management. These three entities looked at the project from three different perspectives and allowed a greater level of control of the information. They all had access to the SharePoint site where information was stored, and having the reporting set up this way eliminated the generation of redundant and possibly conflicting information.

- Project team size: 17 internal "full time dedicated" staff on project team. Backfilled them.

- Project team size: 150 total working on CIS — developers, architects, testers, not people who come in for workshops, etc.

- Project team size: 15 business analysts and 20 IT people, plus 1 or 2 people from change management; 40 to 44 people, total.

- Project team size: Approximately 75 employees, 40 consultants, and 250 contractors at various times throughout the project.

- The team included PMO leadership (from client and system integrator); work stream leads for all of the major functional and technical areas of the business; SMEs from each of the major Functional and Technical areas; analysts and support personnel for requirements gathering, testing, and other project related activities; and system integrators (e.g., developers, SMEs, etc.).

- The team added business unit expertise as needed, and eventually grew to 95-100 people during the peak staffing period.

- The program director / program management lead had 13 years of experience working at the company, had been part of the legacy CIS implementation team, and knew the system, politics, processes, and people. Also part of the core team were leads from Business, IT, Legal, and Supply Chain. This team participated in all the benchmarking calls.

- There was a separate change management initiative that included trainers that were not part of the core team. A cutover person brought in from IBM played a key role.

- Business personnel have been full time from the start (the 44 people). There were people who were brought in for their expertise during the design/requirements phase. Some of the testers from departments are not full time on the project.

- The core team was 100% dedicated — they were released from their previous job responsibilities and reported organizationally to the program director. The core team was a mix of IT and business people and co-located on one floor.

- Some team members, primarily SMEs, were less than 100% dedicated. In some areas, there was 50% participation of additional resources when push times were needed to meet deadlines.

- Internal resources only were used for training. Their regular positions were back-filled with temps during the training activities. They did use a former employee, now with Ernst & Young (EY), to help build their training strategy.

- PwC contractors are used, and technical contractors in IT are being used. This utility is not using third party resources for training. OCM is utilizing PwC resources.

- Staff augmentation (front office and back office) was used. Off-shore resources were used to resolve exceptions overnight. These were reasonably priced resources. This utility had not used off-shore resources for back-office support before this conversion. They close-to-doubled front office staffing. There were 80–100 back office staff, and this number was increased by 35-40%.

- Onsite and off-shore resources were used, which made turnaround quicker.

- EY is used for training development; R44 for stabilization support; Sendero for PMO support; and Pinnacle for bubble staff.

Project Initiation

- Bringing in independent consultant Five Points to assist with the scoring grid and vendor selection process saved time. The project team didn't have to start from scratch with requirements.

- TMG Consulting was selected to guide the utility through the system integrator selection process, building a set of requirements, drafting the RFP, and helping with the selection process. TMG knew the SI players and could tell whether consultants presented were "A-team, B-team, or C-team." Three independent parties from the industry were invited to sit in on three days of orals during the selection process. The CIO and Chief Customer Officer sat in on every one of the benchmarking calls and oral interviews. They wanted it to be clear that the selection team knew what it was doing so they could be confident in the people they had chosen when it came time to defend their decision in front of the CEO, CFO, and COO.

- Needed more high-level business decisions, and more of a process and timeline for making decisions. Service territory is in two states with different due dates, which requires regulatory involvement. It was difficult and time intensive for the two states to standardize and complete designs due to decisions that needed to be made.

Planning / Development / Data Conversion

- Had workshops, validated processes. Requirements were structured into a bid package.

- Conducted workshops and deep dive sessions to review business processes and gather requirements. Requirements mapped to the 5,873 test scripts in the project.

- Listed business requirements and managed the scope very tightly, staying as close to off-the-shelf as possible. They did add some dynamic pricing functionality as a Day 2 quick follow but managed scope and requirements changes carefully.

- The project team sent business analysts to India during the build phase to explain processes, answer questions, and build a working relationship with the off-shore resources, which was valuable in establishing the teamwork needed for the testing and go-live phases after the business analysts returned home.

- The functional team conducted requirements gathering and clarification during development, validated the test scripts to be run during System Integration Testing, and completed a functional walkthrough to prove out the design and development.

- Mapped 400 business processes (As-Is and To-Be). Captured pain points for employees and customers that were due to a systems constraint. Should have spent more time looking at the business processes through the Customer Experience lens in addition to the customer pain points. Should have performed more journey mapping than process mapping. During the planning process, the core team had benchmarking discussions with 12 to 14 other utilities, which yielded valuable lessons learned:

  - Avoid customizations. Change the process, not the product.

  - Don't underestimate training and organizational change management.

  - Don't turn over too much to the system integrator. Take accountability. Automation testing was key.

- Brought in a data cleansing vendor prior to the project, which helped somewhat.

- Several data cleansing efforts have followed the program. Weekly meetings were held to keep up with progress and call out any possible conversion impacts. Some data cleanup items were discovered through mock conversions and dress rehearsals.

- Example of a standardization challenge: Two of a utility's operating companies had similar field procedures; the third company was different from the other two. Process design did not allow for customization — "One Process, One System." The third company had to change its processes, which was sometimes painful. Because SAP is meter-based (meter required to open an account create a premise, bill, etc.), the third company's existing processes caused operational problems and would not work in SAP. Turn-on work was performed by two different crews, and the first crew did work without installing a meter for temporary service. It could be months before the meter was installed. There are still process problems that some districts continue to create.

- Did not expect to be able to convert 100% of the data, but ended up being able to do so. Converted the data 40 times to ascertain its cleanliness. Success in data conversion enabled system testing on all 1.2 million customers.

- There were 9 mock data conversions.

- The utility converted 18 months of historical data.

Testing

- Push for a separate, independent system integration testing (SIT) phase. It is imperative to identify and correct integration/data flow issues before attempting to perform UAT. Otherwise, UAT is not optimized as resources are spent attempting to execute UAT scripts that will not pass because of integration issues. It becomes a de-motivator for resources who might be new to the testing process and do not have a clear appreciation for why so many scripts are failing.

- Use your best resources from business operations. It is imperative to develop SMEs in the new system before going live. Ensure that you have solid exit criteria to lean on during this phase and commit to adhering to the criteria. We identified core scripts that had to pass at 100%; these scripts were representative of our entire solution and made up approximately 10% of the total script count.

- Possible defects identified should be reported to frontline support (e.g., an SME, Floorwalker, or the CIS Help Desk). From there, the issue will be triaged and a decision made as to whether there is a valid concern. If the frontline support believes there is a valid issue, the issue is raised to the triage center for classification and severity. Remediation of defects can follow two different paths:

  - The defects can be included in a planned/scheduled future release (e.g., weekly releases following go-live); or

  - The defects can go through a "break-fix" path which is more immediate, and these are deployed as soon as the defect fix is developed, tested, and can be deployed.

- Pre-release testing was done on- and off-shore prior to deployment of code into testing environments. Code migration took place twice weekly and followed a promotion path to the testing environments.

- Conducted daily defect meetings to discuss priority and impact of defects and to prioritize work of development teams.

- Operational Readiness Testing (ORT) is an area of concern. Communicating coming impacts via the Change Management group is really helping — getting out and talking to people about the changes they will see with the new system before they even go to training; talking about things that may impact their work; fielding questions, and explaining why changes were made; taking feedback; showing the main landing page and features; walking workgroups through areas where there have been major changes to their processes.

- Three cycles of Operational Readiness Testing are recommended to get the results expected of ORT activities from mock conversions.

- Completed four cycles of Operational Readiness Testing.

- Do not compromise on the number of Operational Readiness Testing cycles. Target two to four cycles. Encourage and engage as many resources as possible from both

Functional and Technical teams. This is the closest simulation to what will happen at go-live and is an opportunity to expose defects and other challenges that were not apparent in SIT or UAT.

- Testers of the Meter-to-Cash process are fully dedicated. They are working in an off-site secure facility for testing. It is important early-on to secure dedicated space that is large enough —- and to let everyone else know you'll need it for an extended period of time.

- Conducted four System Integration Test cycles, five parallel test cycles, eight full volume data loads and data reconciliation cycles, and three go-live dress rehearsals.

- Conducted 6 or 7 conversion tests; conducted two go-live dress rehearsals — the first one was worked during business hours, and people went home at the end of the day. The second one was "overnight," with most people working until midnight. Performed User Acceptance Testing all summer and fall, with multiple iterations that went through winter.

- Multiple dress rehearsals are recommended to surface challenges and make refinements in the cutover process and conversion code where applicable. The utility will complete four full dress rehearsals prior to actual conversion.

- Super users performed the User Acceptance Testing (UAT).

- Super Users were brought on to the project team during the UAT and Operational Readiness Testing (ORT) phases to broaden the base of users with more in-depth knowledge of the system. Super Users will then be injected back into their "home" workstreams and serve as operations frontline support and escalation points for possible defects and training issues.

- A subset of core scripts from UAT were rerun to determine whether any changes to code negatively impacted previously tested functionality.

- Automation testing was key.

Organizational and Customer Change Management / Training

- Internal company team members with knowledge are scarce, and it is a struggle to ramp up the skill sets. A strict and structured transfer of knowledge approach is needed.

- Discuss training for field personnel. Prepare customized role-based training for field work done by the operations team. Be willing to negotiate the proper length and timeframe for training with field personnel.

- Augmented staff in the contact center to backfill for the training of agents on the new system — 20% of staff. They have to be trained on both of the old systems. It takes 10 weeks to train on the two legacy systems.

- Trained 1,100 employees, with 91,000 classroom training hours spent on training for the new system.

- Conducted online, instructor-led classroom, online simulations, and follow-up practice sessions. Users were divided into Super User, Heavy User, Casual User, and Read only

groups. Required completion of eLearning modules as prerequisite to classroom training; provided good exposure and foundation to the system which made classroom training more efficient and effective. Online simulations of actions performed in the system provide good reference materials for use as refreshers, particularly for users who were early training participants or for users who may not perform certain functions regularly. Guided practice activities were leveraged to keep users' skills refreshed and proved an opportunity for improved proficiency between classroom training and go-live.

- Develop a "sandbox" for call center people to become familiar with the system. Use the call recording system, put *x* number of calls in the queue, and have them execute the transactions in the sandbox. Capture the time it will take to do a transaction in the new system. Remember that 450 people (or more) can't all be trained at once.

- Set up an information website to communicate directly to the customers who would be impacted (~ 500,000) due to program changes. One company delivered five to eight directed communications over a four-month period, and website hits averaged six to seven minutes spent on the site.

Go-Live

- Go live when it works for the business, not the project schedule.

- Have stakeholders (by area) predefine the criteria so that it is not based on opinion post go-live. Metrics should be objective, measurable and meaningful.

- There was no blackout window. Activities were handled behind the scenes; the team had account balances from the legacy systems, and actual transactions were done manually. The Head of Business Readiness (a new role) focused on getting business readiness in place for all facets of go-live, including staff augmentation, hiring up, backfilling offshore call center reps, and synchronizing cut-over steps. The team was able to maintain their service levels and abandonment rates post go-live.

- The cutover was a 10-day window from 12/27/15 to 01/05/16, which allowed the utility to do their year-end financial close in the old system and start the new year with the new system. It was also good timing from a Customer Experience perspective. They were only open for four days out of the 10-day window. It was business as usual for the customers; they weren't told to call back. Most of the work was done behind the scenes and transparent to the customer.

- The cutover was four days. Manual transactions were handled during this time. The old system went down at 7:00 p.m. on a Thursday, and paper tickets were used the entire weekend.

- The blackout period was approximately 30 days, and the cutover window was planned for five days. The cutover plan was extensive, engaging more than 250 resources over 5 days. Detailed tasks and a team to manage this activity from end to end are required. There are four full dress rehearsals. The plan has a duration of 110 hours.

- Stabilization occurred over the first year of post-implementation. After more than a year of testing, there were not many major flaws. The project team had to tweak their third-party suppliers' move in/move out procedures (e.g., data exchanges with suppliers for drops, enrollments, adds), and it took the better part of 6-12 months to stabilize these functions.

- Customer service metrics did well, although there was a slight deterioration in their metrics when staff augmentation levels were decreased.

- Cutover planning: The extra time that became available due to the delayed implementation date was put to good use. Four full Operational Readiness Testing cycles were completed. The program director required "all pencils down" almost a month before go-live to ensure that major project issues were resolved and to allow some downtime for the team over the holidays and before go-live started.

  - During this time, floor walkers and trainers were preparing, interface acceptance testing was done - it was all around the testing. There were 54 go-live criteria in the categories of Application readiness, Business readiness, Defects readiness. The list of criteria was walked through multiple times with Red, Yellow, Green status assigned to each criteria. There was a lot of rigor around these go-live criteria.

  - The team practiced the go-live decision-making process with the executives. For criteria with a yellow status, the VP of the business unit that would have to live with the issue had to sign-off on go-live. By the time the team had gone through the go-live process, the actual go-live meeting was 10 minutes. Everyone felt well-versed and ready to proceed.

- Lesson learned from another utility: Put an interface liaison in place early-on, and have regular meetings with key vendors such as ITRON, payment vendors, and other major vendors and have them talk about where they are in their preparations and readiness. There were also executive-level meetings held with the vendors' VP-level personnel, with a goal of establishing a relationship with these executives before go-live in case any issues cropped up needing their support and involvement.

Go-Live Metrics — Contact Center

Call Volume

- Maintained a level comparable to pre-conversion metrics during post go-live.

- Exceeded target metric in the first month, less in months two and three.

Average Handle Time (AHT)

- The first group received no training, but because of the additional information presented to them at the start of the call, there was a 30-second reduction in call time. After rollout to the masses, AHT dropped from 483 to 397 seconds — an 86-second improvement. Talk time actually increased, but was more than offset by the decrease in documentation time due to added auto-documentation functionality.

- Maintained a level comparable to pre-conversion metrics during post go-live. Call handle times going into year two are 5 to 10 seconds faster than legacy, and abandonment rates are first tier. Call center rep proficiency has increased.

- Actuals were better than target metric during each of the first three months.

Service Levels / ASA

- Metrics improved:
  - CCC performance: 83% to 94%
  - First call resolution: 79% to 83%
  - Customer Effort: 48% to 67%
  - Call Quality: 78% to 87%
- Maintained a level comparable to pre-conversion metrics during post go-live.
- Actuals were better than target metric during each of the first three months.
- Conducted system performance testing and call center training to ensure the system and the agents were ready for the new CIS.

Abandon Rate

- Maintained a level comparable to pre-conversion metrics during post go-live.

Call Center Training

- There are around 300 associates, a combination of internal and vendor-supplied associates. The legacy training program required 12 to 16 weeks depending on the material, but with the changes to the system, required training time has decreased to approximately 3 to 4 weeks.

Go-Live Metrics — Revenue Management

Billing Error Volume

- All bills were compared, resulting in 99.97% billing accuracy.
- Actuals were better than target metric during each of the first three months.

Billing Exception Volume

- Actuals were better than target metric during each of the first three months.

Batch Processing Performance

- Actuals were better than target metric during the first two of the three months reported.
- Billing exceptions after the first year and into the next year are starting to get back to legacy levels and improve upon them. Management noted that the typical legacy system-type of metrics did not give provide a sense of where you were relative to stabilization — the metrics were not robust enough. Reporting of EDI exceptions and Billing exceptions has been worked on constantly throughout the first year to improve the reporting from

where it was at go-live. The initial reports identified a problem, but failed to describe where to go to fix it. SAP has lots of controls and they were not comfortable making changes to them in the beginning — so they got a lot of exceptions. The utility purchased Blade Software to provide more diagnostics and details about exceptions and where they occurred. Reporting got better and better over the first year. Exceptions are down 25% year-over-year from last year, to the point where it is approaching lower levels than with the legacy systems. With system familiarity, they have been able to tighten system parameters to reduce the number of exceptions generated. Also, the staff is better at working the exceptions and more comfortable working them.

Payment Processing

- Engaged payment processing vendors during the middle to later part of the design phase. One lesson learned in this area is to make sure that there are budget dollars available to rework the interfaces to the new system. A lot of contract work was done because some of the contracts between the utility and the vendors were very old and needed to be updated to reflect the current requirements of the new system. A dedicated supply chain expert on the conversion team addressed all the contract work that was required.

- Actuals were better than target metric during each of the first three months.

Collection

- Took extreme care in migrating the collections process. Payment arrangement was the only function handled manually during the conversion. Quality of the bills was paramount, as was the team's comfort level with the quality of the bills. The team absolutely wanted to avoid sending any erroneous billing notices. This level of focus was driven by past negative system conversion experiences, and the upcoming merger was also a key input factor. This utility was very careful about cutting service off. Suspended collections activity from go-live in January until turning collections back on in April — slowly and carefully throttling it up over the rest of the year, until full collection activity resumed.

- Kept receivables in aging buckets (versus just past due). Observed some mismatches in the number of aging buckets in the old system compared to the new system.

- Resumed collection activity 11 weeks after go-live. Call handle times increased after the collections resumed.

Conversion Project Budget vs. Actuals

- The project came in on budget, even after extra bill print work that was not originally estimated to be as extensive.

- There were 300 customizations on record with Accenture going into the project. With slippage, the overall delta was within 5% — an acceptable outcome.

- The project came in on time and under budget. None of the capital contingency dollars were used, and a small amount of O&M contingency funding was added to help during the stabilization period.

Go-Live Mitigating Actions

Operations Staff Augmentation / Use of Contractors

- Nearly doubled front-office staffing at post-go-live. For back office, added 35-45% to the existing staff.

  - Sensitivity of the team to their utility's upcoming merger: 1.5 years into the project, the merger was announced. The implementation team was told that it was a CEO priority to have a smooth implementation and to stay out of the public eye as the merger proceeded.

  - Knowing that company executives would be testifying in front of the various state commissions on the benefits of the merger, the team felt that it was imperative that no billing system questions would be brought up in those meetings. This was a factor in the back-office and front-office staffing levels and other implementation decisions that were made for the project.

- Leveraged incremental contract staffing to handle ongoing daily operations while employees and contractors attended training, as well as to help compensate for expected increases in handle time and workload at go-live. Approximate staffing level increases: Contact Center – 20%; Billing/Revenue Management – 40%; Operations Support – 35%.

- Brought on supplemental staff for data cleanup. New leadership had a big focus on the Customer Experience:

  - Doubled call center staff for go-live to meet those expectations.

  - Staffed up back-office billing team by 50%. Sourced off-shore people to ensure that exceptions were worked around the clock.

- Did not need to staff up — used existing staff both at call center and billing group.

- Increased both front and back office staffing by 30% each. Added call center classes to ramp up for new system both prior to and following go-live. Ensured adequate back office staffing to preclude falling behind in processing exceptions.

Suspending Disconnects for Non-Pay

- Turned off dunning for three months. Therefore, there were no reconnect fees — missing out on that, and bad debt expenses. Turned off late fees due to payment vendors.

- Did not operate credit and collections processes starting at six weeks before go-live. Resumed credit and collections about a month after go-live. At restart, customers began with a clean credit standing. The CIS team knew that they were allowing customers to accrue more debt. However, the team felt that they could have done better monitoring of arrears and write-off balances to have a better picture of the impacts, including payment arrangements. Also, these considerations needed to be better communicated to management, so they would be expecting it, and to Accounting to better prepare for the changes in arrears and charge-off balances. And, more communication with customers - discussing payment arrangements impacts with them.

- Suspended collections for 11 weeks in order to decrease the call volume.

- Utilities do not control disconnects for non-pay (DNPs) due to market structure. However, we are encouraging retailers to limit their disconnect activity during the first few weeks after go-live.

Stabilization / Post-Implementation

- Expect a bumpy ride. Stabilization may require 12 to 18 months.

- Stabilization occurred over the first year of post-implementation.

- Customers were required to re-register their online accounts due to issues related to the company's website sign-on process.

- At the UAT phase of the project, super users were created from back office and front office team members. These super users were immersed in the system and performed all of the User Acceptance Testing. At go-live, their expertise was leveraged when they became floor walkers, answering questions, being the expert, etc. They were also the champions of the system, folded back into their teams, which was helpful at go-live. The Super Users included naysayers, poor performers, and high performers to ensure a varied mix of people.

- As a post go-live lever to mitigate against contact center service level challenges, we have a contingency plan do direct more outage calls to TFCC (West Twenty First Century Communications) to relieve front line agent and maintain service levels during periods of unexpected call volume or average handle time (AHT) increases.

- Implemented a phased — crawl, walk, run — approach where technical support will assume increasing levels of responsibility from Oracle through ORT, hypercare, and stabilization phases. This will last through stabilization.

CIS Replacement Experience

Challenges

Member utilities described several significant challenges to the successful replacement or upgrade of their CIS. Foremost of these were:

- **Understanding the end-to-end impacts of using an integrated system after converting from two separate CIS systems.** Changing one area requires coordinating with other areas.

- **Needing more high-level business decisions, and more of a process and timeline for obtaining timely decisions.** Service territory is in two states with different due dates, which requires regulatory involvement. It was difficult and time intensive for the two states to standardize and complete designs due to decisions that needed to be made.

- **Gaining buy-in from the call center associates.** The project team let the call center associates know that the changes were "associate built" and that the system pulls the information they need from multiple legacy systems and external applications.

- **Using off-shore resources who did not understand the utility business and CIS systems for bill print.** The off-shore resources were good coders, but the communication barriers significantly impacted their effectiveness.

- **Managing the scope of the project and managing priorities after go-live.** Once the project team is "back in the real world," their focus is spread in many different directions (versus the single goal of implementing the CIS). Post go-live is a balancing act, with changes now affecting two companies instead of one, competing priorities, and a requirement to thoroughly vet the proposals.

- **Achieving stabilization.** There are new and different support needs throughout the company (e.g., centralized exception team, business support, replication, and workflow).

  - End to end control points are needed to detect things going wrong, and customers being unbilled or inaccurately billed.

  - There is a need to consider the impact of project decisions on operations (e.g., consolidated versus unconsolidated billing, business partner setup in self-service portal).

  - Re-orgs complicate things because new business owners don't have knowledge of decisions they inherited.

  - There is a deficit of internal process and system knowledge; it takes time to build proficiency.

- **Determining root cause for unbilled accounts.** The new system caused tectonic shifts in the company with regard to who does what, and who is responsible for daily tasks. Roles and processes changed with the new system.

- **Monitoring and managing the backlog of exceptions.** Releasing the system integrator too soon after go-live created unexpected support issues. As a best practice, keep the system integrator on site for a period of time after go-live, and available to provide continuing support.

- **Adjusting to a shift in project methodology after changing system integrators.** The first system integrator used a more agile approach; the second system integrator used a waterfall approach. We adapted to these changes and filled in the gaps by working closely as a team.

- **Managing schedule slippage and scope creep.** Schedule slippage led to overlapping timelines for critical activities (e.g., Development, SIT, and UAT). The project team managed resources and plans in tandem and had to use resources creatively in order to execute each phase effectively. The team put a process in place to gain approvals from executives so that we didn't sacrifice quality or timeline.

Best Practices / Key Takeaways

- **Strategy**

  - Limit customization. Leverage out-of-the-box functionality. Consider changing the process before changing the system.

- Be proactive with regard to change management and communications. Advise the Commission and the media of the CIS project, provide regular progress updates, and manage their expectations. Give stakeholders opportunities to offer feedback.

- Cultivate and promote business ownership of and engagement with the new CIS. Consider implementing a business readiness scorecard to gauge the readiness of business units to use the new system. When departments are responsible for their own scores, people are more likely to engage.

- Use a change management approach tailored to stakeholders of field processes, as these processes may differ by territory.

- Train call center contractors to be specialists, rather than "jacks of all trades," which takes too long and poses a steep learning curve.

- **Planning**

  - Choose the right time to implement.

  - Conduct a thorough preplanning effort that includes third-parties.

  - Devote several months to business readiness, and understanding how existing processes work. Document how these processes will/should work in the new system.

  - Research lessons learned from past internal projects, the pain points of other utilities who have completed a conversion, and insights shared by system integrators.

  - Review and approve the Statement of Work and Master Services Agreement with the system integrator and the legal team. Engage the appropriate legal experts to ensure all terms, procedures, change approval processes, and intellectual property details are included and correct. Make sure the terms enable the project team to remove and replace system integrator team staff who do not have the appropriate skill sets.

  - Leverage the Agile methodology when making improvements to existing systems. This can provide a better release with each subsequent demo.

  - Be prepared to provide significant end user training. Consider offering experience labs, which enable end users to learn how to navigate the system.

  - Invest more time in the examination of business processes through the Customer Experience lens. Conduct more journey mapping than process mapping.

  - Do not underestimate the importance of pre-work. Document as-is process flows clearly and comprehensively to ensure that to-be process flow discussions will proceed smoothly.

  - Do not underestimate the amount of work that will be needed on the business side. Expert skill sets cannot be outsourced easily.

  - Ensure that project team members have the levels of business and subject matter expertise needed for a successful implementation.

  - Ensure that IT staff have a mix of skill sets and adequate depth of knowledge.

■ **Structure and Governance**

- Put the right governance in place for the project and adhere to it.

- Forge a strong partnership with the project management office or other governance authority for assistance with accounting and change request negotiations with the system integrator.

- Invite an analyst from the vendor to participate in a design session, solution approach meeting, or defect review to ensure the fit of the design or solution, and to verify that it aligns with the vendor's product roadmap. Vendor participation provides a good sanity check before solving something in a certain way.

- Include internal auditors on the CIS conversion team, and bring in external auditors at key checkpoints. Be prepared and able to stand up special teams to handle potential SOX and security items identified by the auditors.

■ **Organizational and Customer Change Management / Training**

- Obtain the support of the steering committee or other governance body to be able to backfill for employees dedicated to the CIS team and to have trainers available.

- Provide targeted training that is tailored to the work done in individual departments. Conduct practice sessions that cover only what those departments need to know for their daily jobs. Build role-based or department-specific labs that are designed to walk through a day in the life of business personnel in that role / department.

- Create and prepare more super users, who often prove critical to the success of the project.

■ **Strong Project Team**

- Encourage the conversion team to perform many iterations of the data, which will flush out configuration changes that need to be made and may provide opportunities to streamline the inventory of reports.

- Exercise care when creating a project team. Ensure the team leads work well together. Select team members with good attitudes, dedication, the ability to focus, and attention to detail. Be especially particular when selecting testers. Provide opportunities for the project team to socialize and bond as a team.

- Leverage business personnel for their expertise, and look for ways to align and optimize processes with behaviors.

- Co-locate the IT resources with the rest of the project team.

- Include a web experience expert on the team to guide the design of the user interface, improve navigation, and increase overall usability of the system.

- Encourage and facilitate the transfer of knowledge from the system integrator to the project team and business personnel. The team must learn the system, know how to configure it, and become self-sufficient. Shadow the system integrator and be able to do what they do.

- Recruit a proactive project sponsor who can "carry the torch" for the project to ensure goals are achieved.

- Provide the project manager and/or project team members the opportunity to shadow or cross train with the business support team after go-live to see and understand what happens after go-live.

- **Design / Data Conversion / Testing**

  - Do not build a process around an exception. Leverage people who can see the big picture and build around what happens the majority of the time.

  - Use a data mapping approach that focuses on the new system rather than the legacy system. Preclude data gaps by identifying the data that needs to be accommodated in the new system.

  - Conduct multiple dress rehearsals prior to actual conversion to surface challenges and make refinements in the cutover process and conversion code where applicable.

  - Start testing with converted data as early as possible. Do not waste time testing with "contrived" data when converted data is available.

  - Test the aging reports in a more focused way. Be mindful that the system may not perform as expected.

- **Post-Implementation**

  - Provide frequent updates, and continue to provide detailed reports to management after go-live. Conduct a formal transfer of responsibility for reporting from the project team to the business unit owners.

  - Do not release post-go-live staff augmentation too early.

  - Involve internal auditors early in the CIS implementation to increase their understanding of differences between the old and new systems. Prepare them for future reviews of the implementation.