Power System Engineering, Inc.

Technology Procurement New Approaches

Customer Information, Utility Billing, and Work Management Systems

By Power System Engineering, Inc. (PSE)

Mitigate costly procurement missteps by establishing a clearly defined process.

Introduction

Is it time to replace your aging Customer Information System (CIS), Utility Billing (UB), Work Management Systems (WMS), or other Operational Systems? These are complex systems that require the consideration of numerous dependencies within an organization. Modern CIS/UB systems offer new products and services along with the flexibility to allow for multiple channels to connect and communicate with customers. Major software systems are used cross-departmentally and often across the city, requiring seamless integrations and varying user interfaces. By clearly defining user requirements, utilities can help prevent costly missteps and ensure that well-informed, strategic decisions align with critical infrastructure and program planning.

Procurement Challenges

The following are examples of common challenges utilities face during the procurement process:

1. No Planned Procurement Sequence or Roadmap

A recurring challenge for utilities is determining the best sequence in which to procure and deploy new systems. A single system or program often supports, or requires support from, other systems. Therefore, making a procurement decision without first considering these crucial dependencies can create a domino effect of issues with other systems and integrations. Without an overall roadmap for the entire utility, individual departments are likely to create a silo effect, making system integrations more difficult to achieve down the line.

Understanding the best order in which to procure systems is as important as knowing which systems to procure.

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It is important to maintain fair and equal communication, keep an open mind, and avoid premature vendor preferences.

2. Request for Proposals (RFP) Missteps

A poorly developed RFP can cause major issues from the start. If the RFP does not clearly define requirements and expectations, vendors may base their responses on a wide range of differing assumptions. Instead of easily making apples-to-apples comparisons, utilities are left to wade through apples and oranges. In this situation, critical differences in vendors' offerings may not rise to the surface.

For example, in procuring a CIS, UB, and WMS, a utility might answer the following questions prior to issuing an RFP: Should vendors provide Oracle® or SQL databases? Should vendors quote costs for the database license? Should vendors bid cloud-based or premise-based software? If some vendors bid cloud-based, and others bid premise-based, how would the different maintenance costs, employee labor, and hardware refresh over a period of time be accounted for? If the objective is to receive bids for several alternatives from the vendors, then the various alternatives should be clearly defined upfront.

3. Inappropriate Vendor Influences

Allowing a vendor to have influence over the procurement process can be detrimental to an effective procurement decision. It is important to maintain fair and equal communications, keep an open mind, and avoid premature vendor preferences. Within the utility, if an employee is already biased toward a certain vendor, it is likely they are not considering the potential benefits of other solutions.

To avoid the perception of any preference, it is best to have no contact with vendors during the bidding process. This includes not participating in vendor user conferences or one-on-one meetings while the bidding period is open. The only communications should be, of course, responding to questions and issuing addendums, which should be sent to all participating vendors at the same time.

4. Lack of Understanding of Vendor Synergy and Vendor Integration

Some vendors offer a complete suite of services, including enterprise software systems (CIS, UB, and WMS) and various operational systems such as outage management and GIS. Other vendors specialize in a single area such as CIS or UB. When it comes to system integration, some vendors simply "play well together," and others don't. Knowing which vendors integrate well is important. Also, understanding where MultiSpeak® integration methods can reduce the lifecycle integration costs and add value is critical. Many of the vendors that support the municipal utility sector have worked together closely to follow the consistent integration methods defined by MultiSpeak. While MultiSpeak may not be the best approach for all integrations, it does provide standards for integration between CIS to UB, CIS to IVR, CIS to AMI, CIS to MDM, CIS to OMS, and other common systems being procured by many municipal/public power utilities.

5. Maximizing Opportunities for Business Process Improvement

A critical part of the deployment process is including the appropriate time and resources that will be required to fully maximize your investment in the new software. This includes introducing new internal business processes that will streamline employees' tasks and offering new tools for customers that save them time and ultimately make it easier for the utility to do business. In the highly competitive bidding environment, CIS vendors often underestimate the time needed to provide meaningful assistance during the change management process. PSE often discovers that many process improvement opportunities are overlooked, and without this important step, utilities are missing out on many of the benefits of their newly deployed software.

Best Practice Procurement Process

By following a proven, professional process for all procurements, utilities can save time and money, reduce risk, and ensure that the right solution is selected for the right price.

PSE's Procurement Process

Roadmap and Technology Education

To create a technology work plan (TWP) or, as it is sometimes called, a technology roadmap, is to take a step back and assess the existing software and technology situation and gaps. A TWP is the first step in determining, utility-wide, the most appropriate systems to procure and in what sequence. By doing this, a utility can more easily define its desired future state and prioritize the steps to get there, while also avoiding silos in various departments and easing software integrations. Many of the key decisions made at this stage help define the scope of the CIS procurement. For example, whether the RFP should include mobile service orders, bill printing services, prepaid metering, online payment, IVR payment, kiosk payments, and other items.

Once a TWP is developed and agreed upon by all departments, the utility is ready to begin procurement.

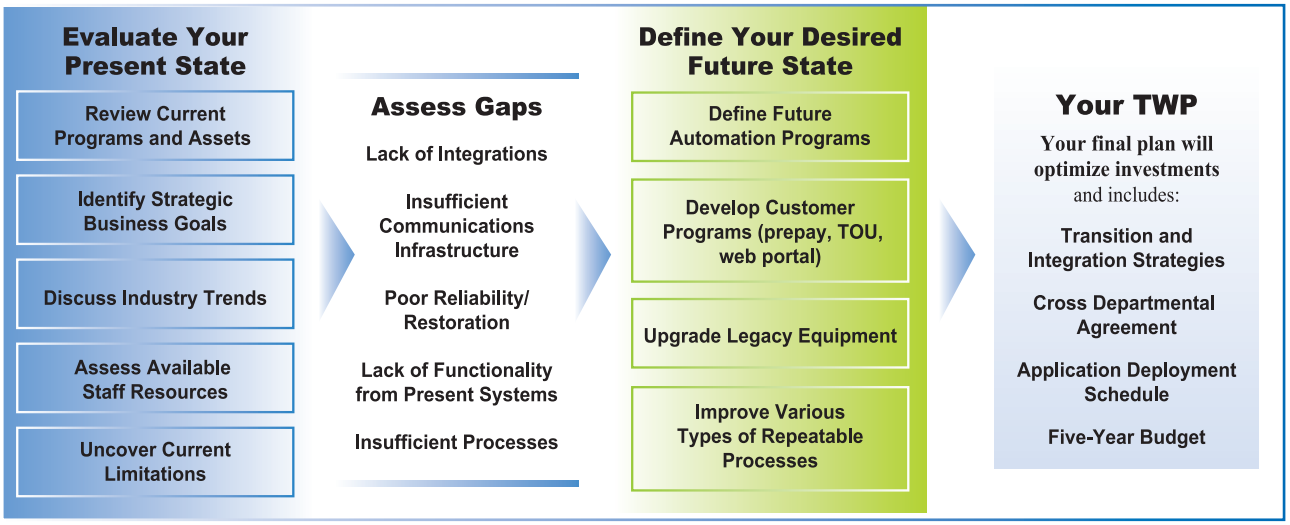
Begin CIS Procurement

There are a number of questions that need to be addressed in order to get started with procurement. These questions vary depending on the technology or program being procured, but will likely consist of some form of the following:

1. Is the project team committed to and in agreement on a common objective?
2. Are the leading vendors known?
3. Have the necessary technology-level decisions been made in the prior step?
4. Has the project been pre-approved based on a budget? Has a cost forecast been submitted to the approval parties prior to the RFP being created?
5. Has a deployment schedule been set?
6. Does the utility have the necessary staff resources available for procurement and a subsequent deployment?

The answer to these questions could impact the approach and timing of the procurement project going forward.

PSE's Technology Planning Process



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Functionality Requirements and Integration Use Cases

To identify requirements for a new system, a utility must first baseline its present functionality. To do this, the utility needs to assess what capabilities and features it has now, what is working well, what is not working well, and what capabilities are desired for the future. The table below shows a sample portion of a worksheet used by PSE to baseline a CIS system.

CIS / FIS Present and Future Functionality

	CIS / FIS Product Attributes	Current CIS Delivers? (Y or N)	Available but not Deployed (Y or N)	Desired to Have in Future? (H, M, L)	Additional Comments
	CIS General Functionality				
1	Supports energy assistance programs				
2	Provides Coding Accuracy Support System (CASS) certification				
	CIS Data Storage				
3	Maintains current account number system and historical member activitiy (*e.g., consumption and payment history*)				
4	Supports a single master account with multiple sub-accounts per customer hierarchy (*e.g., the ability to aggregate account changes and create groups*) even if the master does not have a premisis in the utility service area				
5	Master accounts support total relationship management including summary account handling and repsonsibility for sub-accounts recievables. Sub-accounts can be easily associated/disassociated with a master account				
	CIS Employee / Customer Web Portage Functionality				
6	Supports full viewing of all account information associated with an address or master account, including usage history (*1-2 yrs*), usage analysis (*by meter and aggregated*), notifications, current bills, alerts, and payment history in a dashboard view. Also allows for online bill calculation in real-time.				

In addition to being documented, future requirements should be prioritized and weighted depending on what is most important to the project team and the utility as a whole. In completing this baselining exercise, a strategic vision for the future will begin to take shape.

Requirements should include not only functions and features of the system itself, but also the required integration use cases and methods (such as MultiSpeak) and reporting needs as they relate to other systems. When an existing vendor and a new vendor both have a software integration role, those roles must be clearly defined. Making the false assumption that a certain vendor will take responsibility for the integration of two systems is a common misstep.

During the RFP response period, it is important to maintain fair and unbiased communications with the vendors.

Issue the RFP and Evaluate Proposals

The key purpose of issuing an RFP is to gain a comprehensive understanding of available solutions, to solicit competitive quotes from select vendors, and to ultimately establish a contract with appropriate terms that will benefit the utility long-term. The RFP document should include the requirements for vendors to indicate compliance, the master service agreement terms for vendors to review and redline, a deployment schedule, responsibility matrix, system acceptance test plan, pricing sheet, and various other documents. As previously described, it is important to maintain fair and equal communications with vendors during the bidding period.

The RFP responses must be carefully compared using a uniform scoring methodology. Key criteria should be weighted heavily, and the utility should not attach too much importance to aspects that will have little impact on the solution. When evaluating costs, the total cost of ownership needs to be considered. An inexpensive product can end up being costly if the carriage costs or maintenance fees are high. The table below is a sample summary-level comparison of proposals from three different CIS vendors.

This process helps narrow down the shortlist of vendors who will be invited to present a demonstration of their system onsite for the utility.

At these onsite meetings the utility has the opportunity to ask specific questions and to see the technology perform firsthand. Typically, after narrowing down the vendor list to the top two, we recommend documenting the gaps that still remain between the utility's requirements and the functionality promised by the selected vendor. These remaining gaps influence the final negotiations and, ultimately, the final contracted scope. Work closely with the final two vendors to determine whether, how, and when each defined gap can be met. In most cases, we recommend that utilities avoid customizations or paying an integrator to customize functionality.

Contracting

Once the project team is in agreement, the selected vendor is notified, and contract negotiations commence. It is unlikely that a vendor will accept a utility's master service agreement with no changes. It is typical for vendors to make suggested modifications for the utility to review, or perhaps request that their own contract document be used as a starting point. But, by asking vendors to redline or comment on draft agreement terms as part of the RFP, the contracting phase can be much more efficient. The competitive bidding process often results in more favorable terms and conditions for the utility.

Sample RFP Response Comparison and Scoring

Evaluation Score: 1 - Very Poor 2 - Poor 3 - Acceptable 4 - Strong 5 - Very Strong

Category	Vendor 1	Vendor 2	Vendor 3
Pricing (Base System)	$999,625	$1,200,000	$1,900,000
Pricing (5 Year Total Cost: Base System plus 5 Year Recurring	$1,527,690	$2,800,000	$3,100,000
Pricing Notes	Lowest base cost and cost per year maintenance	Fair licensing, engineering, and on-going maintenance costs	High on-going maintenance. Understand the cost.
Technical Question Responses	**5** - Very strong product in most areas. Highly configurable and functional. Some limitations in prepaid metering and billing platform.	**4** - Overall strong product with specific limitations. Strong customer interface and mobile app.	**4** - Very good product. Concerns about references for parts of customer portal.
Integrations	**3** - OMS interface description references high availability of customer acct. data.	**4** - 10+ years experience integrating with current system. SCADA and AMI interfaces MultiSpeak. IVR well understood	**4** - SCADA, GIS, AMI solutions reasonable. Good IVR experience
References and Experience	**4** - Offered four good cooperative references.	**4** - Offered four cooperative references of similar size.	**4** - Offered good references both larger and similar in size.
Maintainability / Support	High on-going support based on annual maintenance cost.	Believed reasonable based on other vendor interactions, but should be verified	Should explore on-going maintenance cost and what support is required
Vendor Size Fit with Utility	**3** - Uncertain. Would want to talk with references about whether vendor fit their size well.	**4** - Good size company willing to adapt product as needed for market.	**3** - Good size company to be responsive but cost may be high for the service.
Recommended Vendor Demo	**NO**	**Yes**	**Yes -** Integration Exp.

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The project manager must base their direction on clearly documented goals and be supported by a motivated and well-informed team.

Deployment and Testing Project Management

Individuals managing the deployment must always be aware of the big picture objectives. The project manager must base their direction on clearly documented goals and be supported by a motivated and well-informed team.

Other duties of the deployment project manager include maintaining quality, managing risks, responding quickly to problems, leveraging team skills, keeping to the schedule and milestones, watching the budget, paying attention to detail, managing contracts, and most importantly, maintaining strong and timely communication with the vendor and project team.

When new software is being deployed, there is often more than one vendor involved. During a CIS deployment, for example, a mobile service order program is sometimes deployed concurrently. There would also be required integrations with IVR, OMS, and AMI vendors. Typically each vendor will have its own project manager involved in the deployment. But by having an overall, master project manager, the utility can ensure that communication is maintained and that deliverables are properly managed across the various teams and utility departments.

Employee training is essential to capture the full value of the new system.

Change Management

We can't stress enough the importance of this last step. The deployment team focuses most of their efforts on converting the old system to the new system and then testing to make sure all the software functions per the specifications. But another critical (but sometimes overlooked) aspect of the software conversion is business process change. Typically, the new software enables more automation and therefore, workflows can improve, with fewer manual steps. Employee training is also essential in order to capture the full value of the new system.

Procurement Best Practices

While the preceding steps describe a typical procurement process, each project is different and might require different approaches. As a best practice, a utility should develop procurement policies to determine which process should be followed based on certain criteria, such as:

1. Cost thresholds
2. New systems vs. add-ons to existing systems or replacements for retired systems
3. Procurement risks
4. Existing knowledge and understanding of software system being procured

Examples of processes that might be followed based on this criteria could include:

1. Purchase from pre-approved supplier (low dollar amounts)
2. Sole source or “no bid” (if only one known source can provide goods or services)
3. Single source (while others may exist, only the designated supplier is acceptable, e.g., add-ons to an existing SCADA system)
4. Competitive bid (multiple suppliers are acceptable)

Once the objectives are identified and prioritized, the systems to be included in the RFP agreed upon, the budget approved, and cross departmental buy-in secured, a procurement plan can be developed. If a utility is unsure about a certain program to procure, then further education, further system integration planning, and cost/benefit feasibility analyses are useful assessment practices before starting procurement.

About the Author

Rick Schmidt

Vice President – Utility Automation and Communications

Rick leads PSE’s automation and communications technology group with more than 35 years of professional experience. Rick and his staff provide consulting and engineering services to utilities, including: technology work plans, strategic communications plans, procurement, design and project management of CIS, Customer Billing, WMS, DA, substation automation and design, AMI, demand response, GIS, MWM, AVL, OMS, and asset management. Communication area services include land mobile radio, fiber and microwave backbones, and mobile data. Rick earned his MBA from Cardinal Stritch University, Milwaukee, WI.

Contact Rick at 608-268-3502 or schmidtr@powersystem.org with any questions you might have regarding PSE’s procurement process.

Power System Engineering, Inc.

Full-service consultants

Serving the utility industry since 1974

PSE is a full-service consulting firm. Our team has extensive experience in all facets of the utility industry, including communications, IT, and smart grid automation planning and design; economics, rates, and business planning; electrical engineering planning and design; and procurement, contracts, and deployment.

We are employee-owned and independent, which gives our clients confidence that we are motivated to satisfy their needs and represent their best interests.

Headquarters:

Madison, WI
1532 W. Broadway
Madison, WI 53713
608-222-8400

Additional Office Locations:

Lexington, KY – (859) 721-2837
Marietta, OH – (740) 568-9220
Minneapolis, MN – (763) 755-5122
Prinsburg, MN – (320) 978-8022
Sioux Falls, SD – (605) 221-1770
Topeka, KS – (785) 224-3065

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