WATER & WASTES DIGEST

3 STRATEGIES FOR ADVANCED METERING

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How to prepare a utility for an advanced metering upgrade.

As AMI Technology has matured and more meter manufacturing options hit the market, utilities are shifting focus from advanced metering infrastructure (AMI) technologies to implementation considerations and connecting the dots between proper meter installation, system integration and the performance of their new AMI network. Specifically, utilities are asking how they can ensure a successful upgrade or new AMI deployment, and how they can receive the most benefits from the new solution.

With millions of meters deployed worldwide, utilities are learning from each other and are sharing best practices to ensure successful AMI deployments. While it sounds obvious, one such lesson involves looking across the organization because an AMI city-wide meter upgrade impacts many parts of the utility's partners and stakeholders—requiring involvement from customer service, engineering, operations and IT departments.

"The city of Columbia, South Carolina, proactively formed a cross-functional committee to prepare our utility, city and citizens for a 150,000 meter upgrade," said Clint Shealy, assistant city manager for Columbia Water. "It's important for utilities to avoid working in silos and to partner with experts … to ensure you receive all the benefits AMI can offer and also to minimize installation mistakes and oversights."

Whether you are planning a new AMI deployment or preparing to retrofit your network, here are three key strategies to help prepare a utility for an AMI system.

Plan for AMI data collection and data management.

Accurate data is one of the most important aspects of any mass meter change out or technology upgrade. The value of a billing system lies not only in the data integrity it provides but also in its accessibility for the billing department. Changing over to new interfaces and learning new systems can be a significant barrier to overcome, especially for smaller water utilities. As such, selecting the right service partner will ensure a team is properly trained and receives the support needed before and after deployment.

Older touch-read and drive-by meter reading technologies provide minimal data to support customer billing. Once collected, it is typically uploaded to a standard utility system and then transferred to the customer information system (CIS), which typically has basic data requirements and functionality.

> Making a shift to advanced metering equipment not only requires new hardware, but also requires a cutlure shift to optimally use the new features and equipment to their potential.

However, AMI systems produce massive amounts of data. Utilities are not limited to periodic data collection and can retrieve consumption data at intervals they define, which translates into more data and more data transfers to support near real-time utility operations and billing. While AMI translates into more accurate and timely water bills for residents, the massive amount of data and resulting integration requirements can exceed the functionality of current operational systems and CIS systems and this operational shift should be addressed upfront to eliminate disruption in service quality and to ensure billing accuracy.

Additionally, most utilities do not have systems in-place to store large amounts of data, which requires the utility to consider data management solutions, such as meter data management (MDM) or data warehousing. MDM systems also help convert meter data into useful and actionable insights. Ultimately, utilities together with their installation and technology partners, should develop a deployment plan that accounts for everyone who needs access to water usage data. This should include utility departments, such as customer service, finance, and IT, in addition to residents and other stakeholders.

2 Ensure accuracy during advanced metering installation.

AMI systems rely on many components to operate effectively because they involve multiple technologies, including meters, network equipment and software. These critical elements often come from different vendors. Therefore, it is important that new AMI meters are properly installed and integrated to ensure the utility receives all the benefits. Successfully replacing existing meters with AMI-ready meters involves more than just removing and installing the physical meters. Meter replacement crews must completely and accurately enter a variety of information and data into a mobile tracking system to prevent future troubleshooting, billing delays and possible billing errors.

“UMS conducted a thorough survey of all meters in our distribution system and meticulously validated all the data that went into our CIS system,” Shealy said. “This level of data management ensures customer billing accuracy and minimizes future customer issues.”

The way an implementation is conducted can make all the difference in terms of meeting success factors of performance, budget and schedule. Installation is more than just a meter-for-meter exchange. AMI installations should involve pre-planning and post-AMI deployment planning.

For most utilities, a meter upgrade project is a completely new undertaking. It is important to look for service companies who bring expertise in both installation, as well as post-deployment maintenance services. Going from a labor-intensive manual meter reading system to a high-tech two-way communication system involves more than just a shift in technology for utilities. It takes a culture shift as well.

To ensure accurate billing, establish a basic check list for the field services team for a complete meter changeout, such as the following:

- Prior to installing the meter and activating the new endpoint, the field services team should validate the current meter read, serial number, and key characteristics about the meter against existing billing system data to ensure they are at the correct location.
- After the new smart meter is installed, the AMI endpoint should be activated to allow the meter to connect to the advanced meter network.
- The field team should connect the endpoint to the register's cable, installing an adapter cable if necessary, activate and program the endpoints with key information, and check for a network connection.
- The technician should electronically record, capture, and upload the new meter information in mobile work order management software so new meter information can be easily transferred back to the billing system.
- The technician should capture multiple pictures of both the old meter information and new meter information. These pictures should be uploaded and saved to the work order management software and held for record keeping for the utility.
- When installing the meter, the field services team should record key information about the endpoint to ensure accurate billing.
- Once connected, the new endpoint will transmit the meter reading data to the advanced metering software.

3 Remember the importance of community involvement for AMI systems.

Equally important, utilities should develop a comprehensive community outreach plan to build project awareness with the residents and community they serve. Customers expect utilities to invest in programs that improve service, maintain reliability and manage water usage and costs. The community outreach plan should meet customers at various points of engagement to ensure they are up-to-date on the city's plans to provide superior service and better access to their water usage information.

A comprehensive community outreach plan should assist utilities in creating the most effective communication and education program and build awareness with their internal and external stakeholders. Every installation is different, so all communication materials should be developed to fit the specific needs of the utility and the needs of the community they serve, including door hangers, notification letters, public service announcements, social media campaigns, videos and more.

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