Saving customers' lives with an advanced metering infrastructure implementation at Loudon Utilities

Consulting case study

April 20, 2022

Key takeaways

- Loudon Utilities Board sought to upgrade more than 20,000 gas, water, and electric meters in its territory to provide an improved customer experience, cut costs, and decrease its fleet's carbon footprint.
- The utility partnered with E Source to modernize and improve its systems' performance by implementing advanced metering infrastructure (AMI). The plan was to update all meters, offer a web portal to customers to help with account management and bill payment, and launch a meter data management system (MDMS).
- E Source Technology Planning and Implementation Consulting led the way through the entire AMI process—from assessment to installation and support—helping Loudon Utilities choose the ideal third-party vendors to provide the new equipment and systems.
- The utility's AMI work potentially saved lives when a family's smart meter notified the utility of excessive heat in the home and the utility was able to prevent damaged elements in the breaker panel from starting a fire.

The challenge

Loudon Utilities, a multicommodity utility in Tennessee providing water, gas, and electricity to more than 13,000 residents, struggled to maintain and manage over 20,000 meters installed in its territory. The meters experienced a variety of issues—difficult access, weather-delayed reading, condensation in registers, and dirt and water in meter pits or on dials. Also, the utility didn't know the condition or model of many of the meters and some of the gas and water meters were nearing end of life, risking diminished meter-reading capabilities.

In addition to the state of the meters, the wear and tear on Loudon Utilities personnel was starting to add up. Manual meter readers completed over 30 routes per month to do their jobs. And the collections team managed a high volume of delinquent customers and made over 6,000 trips per year for shutoffs. Customer service volume was at an all-time high with calls about late payments, high bills, and outages. Customers needed a more modern and convenient way to stay on top of their accounts.

The solution

Loudon Utilities joined forces with E Source to navigate the daunting task of upgrading all meters and improving its overall customer experience. After holding an in-depth workshop with the utility, Technology Planning and Implementation Consulting assessed Loudon Utilities' current state. The team provided recommendations and supplementary analysis on the utility's goals, operational impacts, and business cases that would support the decision to begin an AMI project.

E Source hit the ground running on behalf of Loudon Utilities. The team managed the entire AMI implementation, leading the procurement process to find the right smart meters, transmitter hardware, network, and software, and helping the utility put the new systems and processes in place.

The results

E Source's efforts successfully improved Loudon Utilities' systems to support a modern and streamlined customer experience. From routine meter reads to shutoffs and disconnects, the freshly installed smart meters and MDMS allowed the utility to perform all previously manual operations remotely without sending personnel into the field. Overall, the utility's AMI implementation has improved system planning capabilities, decreased customer complaints by 5%, reduced the utility's carbon footprint, and greatly improved outage response time. The new system allows the utility to quickly identify and fix issues—sometimes before customers are even aware of a problem—saving customers hundreds of dollars.

The power of AMI can sometimes be immeasurable. For example, Loudon Utilities' AMI implementation helped prevent what could have been a life-changing fire for one of its customers. The smart meter installed at the customer's home showed high temperatures one morning and the utility rushed to investigate. Technicians discovered major damage on one of the two leads feeding the breaker panel in the home, which could have led to a potentially life-threatening fire if the utility hadn't caught the excessive temperature readings from the smart meter.
