Nothing's out of reach.

SMART CITIES START WITH SMARTER UTILITIES:

The role of smart utilities

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Primary concerns as smart utilities advance

Safety

Automation

Cost-effectiveness

Customer satisfaction

Information technology impacts the way we live, and smart technologies influence the utility industry in exciting ways. According to Randolph Wheatley, vice president for communications, solutions marketing, for Sensus, "Smart utility is about leveraging communication technology to enhance the effectiveness and efficiency of operations and, ultimately, improving interactions with the end customer."

Utilities get smart

Utilities continue to evolve not only to keep up with the latest technology and customer expectations but also to respond to an outcry to be more environmentally friendly. For example, public service providers are incorporating distributed renewable energy resources into the traditional energy delivery paradigm.

"Each utility—water, gas, electric and lighting—has a different nuance in the smart space," Wheatley says, "but they all have the same primary concerns in light of advancement: safety, automating manual functions, increasing cost-effectiveness and improving customer satisfaction."

Most utilities within a community are siloed, although crossover can occur where two or more utilities—e.g., gas and water—are delivered by a single provider. Smart solutions enable smart utilities to interconnect with other smart city services by leveraging a common network infrastructure that can support all the applications.

Communication network is key

"The communication network is the underlying foundation of any smart utility," Wheatley says. He explains that it's vital for the network to have the capacity to support multiple uses—gas metering, pipe corrosion testing, water metering, lighting control, etc. It has to be able to expand to uses not

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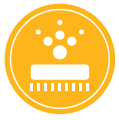
Lighting



Electric

Water

Gas

Sensors

even conceived of today. He adds, "The system must consistently function and be readily available when it's needed most, such as during weather events. The communication network must be as reliable as the network the utility uses to deliver its resource, be it water or energy."

Once the network is in place, a mechanism is established that can support a single utility or multiple utilities. Each of those utilities will have a unique set of devices that read and collect relevant, real-time, on-demand information. The network serves to gather data and issue control commands for those devices. However, data for data's sake is not necessarily useful. "We need to make sense of the data with specific analytics," Wheatley adds. "These analytics programs can be an inherent part of the underlying communication system, a separate offering from the smart utility solution vendor or part of the utility's own internal analysis tools created to work in concert with their systems for billing, customer service, operations and more."

Regardless of which utility initially implements the communication network, that utility can become a "friendly neighbor" to smaller utilities serving that area by offering the shared use of the network for a fee. Although there is still a cost to the smaller utility, it is a significantly smaller investment than if it had installed the network. So the secondary users benefit by getting smart for less, while the installer benefits by gaining some income from its utility neighbors.

Focus on customer service

"At the end of the day, the purpose of smart utility is all about a better overall customer experience," Wheatley says. "Customers want to be better informed, and a smart utility provides them with more information when and how they want it." Smart utilities also inform customers about their personal resource consumption, and the data helps the respective provider's sustainability effort. "Processes and activities that once necessitated onsite service are automated with smart utility," Wheatley says, "and these improved operations efficiencies are just some of the ways utilities improve environmental sustainability."

A high-quality customer experience always reflects back positively on the delivering organization—and not just in reputation alone. Providing a better customer experience also impacts the bottom line of a utility or municipality. Water is a great illustration. Traditionally, consumers receive their monthly bills but no further information about their water usage. So, when an unusually high bill arrives, the customer will pick up the phone to complain. With no other recourse, the utility will often issue a refund. However, with a smart utility communication network and the ability to retrieve granular data from that customer's meter, the utility has an immediate answer without an onsite visit. The utility discovers through the data that on a specific date during that

month of service there was a huge spike, and the customer recalls, "Oh, that's right. That's the day I accidentally left the sprinkler on all day." The utility keeps its revenue, and the customer feels heard and understood.

Across all utilities, consumer expectations are rapidly changing and driving the smart utility industry. "Consumers are becoming more and more engaged," Wheatley says, "and they want to have more control over the information that impacts them." Implementing a smart utility network, with its ability to collect specific data and analyze it, results in more efficient operations and enhanced delivery. It may be the perfect equation for creating happy customers.

Save time and money

Smart utilities impact more than just the customer experience. A trending focus across all utilities is the efficiency of operations. Traditionally, utilities respond to problems using onsite manpower. There's a truck roll, which costs money, and then time to discern the issue. The problem may or may not be determined or even repaired at that time. However, with a smart network, the utility can pinpoint the problem and determine the exact location and timing of the issue—all without needing to go to the site.

As federal regulations for utilities get more stringent, providers have a great opportunity to proactively meet and even exceed requirements using smart solutions. Look at gas line corrosion prevention as an example. The government requires annual reports. Data collection using manpower is highly inefficient, as measurements are made at singular spots along lines. Taking into consideration the length of pipelines, the number of measurements can be enormous. With a smart utilities solution in place, pipe corrosion is automatically and granularly measured, markedly increasing utility efficiency and accuracy. Not only does the provider save money, but these improvements also enhance safety, which ultimately benefits everyone.

Each utility area has specific driving factors that affect the future of smart utilities. Wheatley explains that the electric vertical is experiencing "a true redefinition of roles that is changing everything." For example, with so many renewable energy resources in the marketplace, a customer not only consumes electricity but now also can generate it. "Consumer/producer roles are blurring," Wheatley says. "The electrical distribution network historically defined by a one-way flow of energy from the utility to the consumer is becoming a two-way network."

Smart utility solutions are indeed changing the way we receive our public services. The model of utility delivery and consumption is shifting with the application of technologies that advance daily. Smarter utilities will lead to smarter consumers and a cleaner planet.

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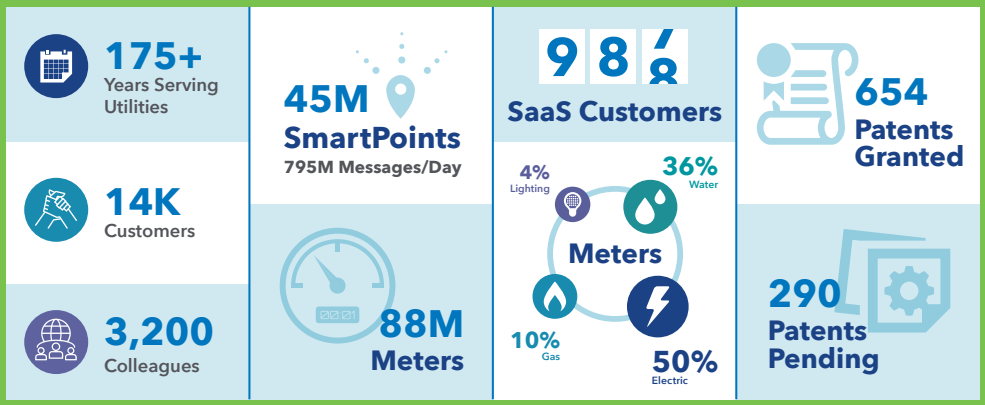
About Sensus

Sensus, a Xylem brand, helps a wide range of public service providers–from utilities to cities to industrial complexes and campuses–do more with their infrastructure to improve quality of life in their communities. We enable our customers to reach farther through the application of technology and data-driven insights that deliver efficiency and responsiveness. We partner with them to anticipate and respond to evolving business needs with innovation in sensing and communications technologies, data analytics and services. Learn more at sensus.com and follow us on Facebook, LinkedIn and Twitter through @sensusglobal.

Sensus by the numbers



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