



Ameren Services

The Ameren corporate mission is to generate electricity, deliver electricity, and distribute natural gas in a safe, reliable, efficient, and environmentally sound manner to residents in Missouri and Illinois.

After acquiring three utility companies in the last seven years, Ameren's service territory has expanded to 64,000 square miles and includes some 2.4 million electric customers and nearly 1 million natural gas customers. To maintain its leadership role, this major utility realized that it needed to standardize its IT systems—specifically its mobile environment—and move to a single platform.

Standardization of this type is critical during emergencies, when the company needs to quickly dispatch workers throughout its territory to repair outages and other damage to its power systems. A consistent mobile environment facilitates communication among employees and boosts efficiency and productivity.

Objective.

An early adopter, Ameren has utilized wireless technology since 1994 when it first deployed a mobile field force.

Originally, Ameren dispatchers relayed work orders and outage information to the field service team by phone or radio, and daily work orders were logged on paper. "In the past, the person in the field may have had to wait for the dispatcher to give him information for daily work orders, which resulted in lost productivity," says Mike Bohn, a member of Ameren's Energy Delivery Technical Application group.

To streamline its customer response efforts, Ameren was interested in a robust wireless solution that could handle the tough environment of working outdoors. "We were looking for a rugged solution that could handle our work environment, as well as address productivity issues, provide even faster responses to customers during an outage, and basically serve as a replacement system for work that was previously done via paper, radio, or telephone," says Kirby Diller, an engineer with Ameren.

When the opportunity came to upgrade to a faster network with higher bandwidth capacity and expanding service territory, this wireless pioneer was ready and willing to make the change.

AMEREN SERVICES
WWW.AMEREN.COM

Company Description:

Ameren provides electricity and natural gas service to parts of Illinois and Missouri. Its 64,000-square-mile territory reaches about 2.4 million electric customers and 1 million natural gas customers.

Objectives:

- Automate field force on a standardized system in order to reduce dispatch time and increase the ability to respond to customers.
- Deploy a rugged, reliable, mobile solution that withstands the rigors of being in the field.

Solution.

Ameren chose a mobile solution that encompasses several key areas. First, the company needed a reliable and secure wireless infrastructure. After evaluating several options, including building a private network, the company decided to migrate from Cellular Digital Packet Data (CDPD) to Verizon Wireless Mobile Broadband service, a high-speed wireless broadband network based on Code Division Multiple Access (CDMA) EV-DO technology.

According to Diller, Ameren selected Verizon Wireless CDMA over other wireless options due to the technology's performance and the provider's migration strategy. Building a private network was cost-prohibitive on many levels, he adds. Infrastructure investments are expensive, and management requirements tax the internal staff's productivity. "We have flexibility with Verizon Wireless that we would not have on a private network," says Diller. "With a private network, we would not have the multiple hardware choices or the data speeds that we gain with the Verizon Wireless network."

Next, in the service vehicles, Ameren's mobile solution consists of 1,500 Panasonic® Toughbook® notebooks and modems from Sierra Wireless. The ruggedized notebooks are a must-have in the field, where they encounter all kinds of working conditions. "The notebooks are hard-mounted and stay in the trucks, and each vehicle has a dedicated modem that communicates with our company mainframe in real time," Diller says.

Through the wireless network, field workers have access to several key applications, including GPS location technology and 3270 terminal emulation. The main application, an outage analysis system, runs on an IBM® mainframe. This system passes all daily work orders over the Verizon Wireless network to field technicians.

Of the 1,500 Toughbooks, about 1,200 connect to the Verizon Wireless network, and the other 300 will be added soon. When the field force roams out of the Verizon Wireless coverage area, middleware from NetMotion Wireless allows them to continue accessing their critical applications through a mobile virtual private network.

Results.

Ameren has realized numerous benefits from implementing the Verizon Wireless data network. The new mobile network environment has led to time savings, increased productivity, better collaboration among workers, cost savings, and customer and employee satisfaction.

Response times for field workers have improved, which helps customers regain their service more quickly. "Implementing a mobile environment allows us to sign out work orders in real time and send out information in real time," says Bohn. Prior to the mobile solution, workers had to wait for a dispatcher to tell them where to go next.

"Every minute we save improves customer service and improves our reports for outage time," says Bohn. "We needed to eliminate any extra time spent responding to our customers, and the mobile application helps us do that."

Solution:

- Verizon Wireless Mobile Broadband service provides a reliable, high-speed connection between Ameren's field workers and the main office.
- Vehicles are equipped with 1,500 Panasonic Toughbook notebooks equipped with Sierra Wireless modems, GPS technology, an outage analysis system, and 3270 terminal emulation software.
- A dedicated T-1 line and proxy server connect Ameren to the Verizon Wireless network.

Results:

- The Verizon Wireless network has improved data throughput from 19.2 Kbps to 100 Kbps, and application response times have decreased from 10 to 15 seconds to 2 to 5 seconds.
- Dispatch orders can be given and received in real time, saving time, improving productivity, and decreasing paperwork.
- Approximately 1,200 field force personnel save several minutes per day, per terminal.
- Consolidating several corporate subsidiaries on a single wireless platform improves efficiency.



The Verizon Wireless network has improved Ameren's mobile throughput from 19.2 Kbps to about 100 Kbps, and per-screen update response times have decreased from 10 to 15 seconds down to 2 to 5 seconds.

Ameren is leveraging EV-DO technology, which delivers data speeds of 600 Kbps to 1.4 Mbps. With this powerful technology at their fingertips, the Ameren IT team expects to see even more workflow improvements and faster data speeds. They also have the necessary infrastructure to expand their current set of applications.

In the area of improved efficiency, the company has been able to consolidate various systems from different companies that merged with Ameren onto a single wireless network. "Instead of supporting four or five systems, we can support one system," Diller says. "Everyone is doing the same thing on the same network and the same outage system."

This standardization is especially helpful during major storms that cause multiple outages. "We want to be able to send any crew to any location quickly, with no confusion," he says.

In terms of productivity, Diller says that when his group was rolling out the pilot of the wireless system, one cost justification was that each field force member would save dispatcher time for each mobile installation, which is significant when you're looking at installing more than 1,000 notebooks. Now that the mobile platform is deployed, Diller says Ameren is saving more per terminal than originally projected, and other savings have been realized.

A decrease in paperwork adds to the business unit's overall productivity. "Having the field force input information directly into the system decreases errors since there is no middle person involved. This frees up our office staff to work on other projects," Bohn says.

While the Ameren IT team had initially planned to limit the wireless system to field force workers, the interest in mobility has led to expanding the platform to include the company's executive staff. Next up, the plan is to add more applications and roll out mobile data solutions so Ameren can extend beyond its traditional offices.

"In the future, we want to enable a mobile workforce so that anyone can do his or her job from any location," says Bohn. "We want to leverage wireless technology wherever we can."

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MIKE BOHN
ENERGY DELIVERY TECHNICAL
APPLICATION GROUP,
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Speeds require an EV-DO Rev. A-capable device. When using an EV-DO device that is not Rev. A-capable, you can expect download speeds of 400 to 700 Kbps and upload speeds of 60 to 80 Kbps. Mobile Broadband speed claims based on our network tests with 5 MB FTP data files, without compression. Mobile Broadband is available to more than 240 million people in 248 major metropolitan areas and 232 primary airports in the United States.

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