



# The Computerworld Honors Program

Honoring those who use Information Technology to benefit society

## Final Copy of Case Study

**Year:**

2013

**Status:**

Laureate

**Organization Name:**

Verizon Wireless

**Organization URL:**

<http://www.verizonwireless.com/>

**Project Name:**

LTE in Rural America

**Category:**

Economic Development

**Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)**

The LTE in Rural America (LRA) program revolutionizes the way people living in rural areas enhance their value proposition and economic development by leveraging high-speed telecommunications. Verizon Wireless collaborated with rural telecom companies to build and operate 4G-LTE networks in low-density markets throughout the United States. These rural networks leverage the tower and backhaul assets of the rural company and Verizon Wireless' packet core, 700MHz spectrum and core IT systems. Prior to the LRA implementation, people in these rural areas had limited access to 4G-LTE high-speed mobile broadband connectivity, mostly because the carriers in these rural areas do not have resources to develop a 4G-LTE network on their own. Verizon Wireless provides

a unique opportunity for rural telecom participants to leverage Verizon Wireless' technical and spectrum resources, enabling an open marketplace. Verizon Wireless teams with companies that serve rural areas that currently do not have Verizon Wireless coverage and with existing wireless operators and companies that seek to enter the wireless business. Verizon Wireless' challenge was to design an innovative solution that enabled efficient interconnection and end-to-end transaction flows of our network and IT systems with rural participants to support core services, balancing the need to address each unique participant's needs while maintaining a consistent solution. The solution needed to effectively support all the participants using service-oriented architecture, ensuring repeatable, sustainable and growth-ready IT services and capabilities. The design required a balanced local control with centralized efficiency, security with accessibility and simplicity with robustness. Verizon Wireless' solution included provisioning participant end-user devices, managing and processing billing events across both Verizon Wireless' and the participant's networks and deploying comprehensive back-office services, such as financial accounting, technical support tools and troubleshooting capabilities, all while ensuring security to customers.

**When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)**

The first LRA markets were launched on April 30, 2012 and as of today we have signed 20 rural program participants, seven of which have been commercially launched. Eleven more are expected to launch in 2013. Among those rural program participants, there are existing Code Division Multiple Access (CDMA) carriers, rural telephone companies and wireless Internet service providers. To date, the 20 rural carriers have leased spectrum covering, in total, more than 2.8 million people in rural communities and 176,000 square miles in 15 states. It is expected that as the LRA carrier community grows both in number of participants and tenure/maturity of existing participants, enhancements and new services will be required to expand the current program structure, and future LRA IT projects will be launched to drive this evolution and meet the unique needs of the LRA initiative.

**Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)**

Verizon Wireless groundwork is complete, and the process for integrating new LRA carriers is robust, repeatable and scalable. Because it was designed this way, Verizon Wireless can offer a quick solution to rural carriers to keep pace

with the ever-growing technological advancements in the communications industry in a cost-efficient manner.

**Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)**

Broadband is a critical lifeline for those who live in the parts of the world where advanced network technologies are available. Being part of the digital grid is essential to a community's growth and to its citizen's chances for economic mobility. The Federal Communications Commission (FCC) reported in 2012 that 19 million Americans lacked access to broadband services, and that rural communities are disproportionately affected. The LRA deployment provides many United States rural communities the benefit of the latest mobile broadband technology, while stimulating job creation both at the participating companies and throughout the chain of suppliers involved in building the network. As one general manager of a rural carrier stated, "I know we are going to have a future based on this [program]." This initiative allows LRA carriers to keep up with their customers' demands for better, faster broadband at a national level. These customers vary in their needs, from a chicken farmer in North Carolina to the oil fields in Utah, to savvy smartphone users in the hills of Kentucky. This initiative provides economic stimulation in rural communities, allowing small/medium business growth by leveraging high-speed mobile connectivity capabilities to support their business. It also supports an open marketplace by enabling new and/or existing service providers with an opportunity to increase competition within the same market, fueling economic growth. Below is a link to a brief video of the first annual LTE in Rural America Summit hosted by Verizon Wireless in September 2011: <http://news.verizonwireless.com/news/2011/10/pr2011-10-27a.html>

**Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)**

The LRA project is a unique and innovative program because of its design structure and collaborative nature. Rural telecom companies can take advantage of Verizon Wireless' scale, spectrum assets and growing 4G-LTE network while retaining their own branding, distribution, customer service and radio network assets. No other telecom alliance offers these advantages. Verizon Wireless built system functionality enabling these rural carriers to run their own business while utilizing Verizon Wireless' high-speed mobile connectivity. During the design and implementation phase, our IT team took into consideration the solution needed to



accommodate all participants and also kept in mind the upgrades that were concurrently happening in some of the participants' systems. Each participant had specific coverage areas as well as a national footprint that needed to be taken into account. Additional IT enhancements implemented include the enhanced provisioning of impacted network elements and the creation of troubleshooting capabilities to empower LRA participants to resolve their customers' issues, using self-service tools, without needing to engage Verizon Wireless support. Modifications to SIM card manufacturing and activation processes were also implemented to allow the technology to work on both Verizon Wireless and rural carrier networks without compromising the integrity of the networks or security of proprietary information and data. The VZWMap tool was enhanced with the capability to show LRA layers to demonstrate which rural markets can access 4G-LTE service. Billing enhancements were deployed providing the rural carriers unique usage information to bill and support their subscribers. Multiple IT systems were enhanced ensuring that an end-to-end solution was designed that accounted for the lifecycle of participants and their end users. The LRA program also highlights using collaboration as a best practice for organizations to successfully work with other companies (with potentially conflicting interests) as well as inter-company teamwork.

**If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)**

As a leader in the industry, Verizon Wireless feels a responsibility and a commitment to provide high-speed wireless access to United States rural communities and launched the LRA program in order to enable rural carriers to accelerate the rollout and adoption of 4G LTE services in their areas. The LRA Program reflects this commitment to societal advancement by expanding and enhancing communication capabilities across the country, encouraging open communication and dialogue as well as sharing of ideas and technological information across different socio-economic classes and communities. Innovative programs such as this one underscore how by working together the industry can deliver the full benefits of 4G LTE technology and fuel the engine of innovation that will define the next era of communications.