

### CASE STUDY



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#### OVERVIEW

Powernet is a leading network integrator in the Cincinnati area and takes great pride in its civic involvement. Recognizing the need for reliable Internet coverage throughout the Avondale area, Powernet was looking for a solution that could meet its requirements.

#### REQUIREMENTS

- Provide free broadband Internet access to citizens and students of Avondale
- Help bridge the Avondale neighborhood digital equity challenge
- Ability to serve hundreds of concurrent users and provide a great user experience
- Implement a cost-effective Wi-Fi solution that meets the objectives of the HUD grant

#### SOLUTION

- Ruckus T300 outdoor access points (APs) to provide Wi-Fi connectivity
- P300 APs provide point-to-point mobile backhaul
- R500 and R700 indoor APs in nine renovated apartment complexes
- SmartZone controller to manage the entire network

#### BENEFITS

- Ruckus Networks and Powernet are working together to come up with innovative solutions to help reduce the digital equity currently present in Avondale and other communities
- Delivering indoor and outdoor broadband Internet with a great customer experience at the lowest cost per connection
- Innovative funding models combining HUD, school districts and local non-profits

## INTERNET SERVICE REACHES LOW-INCOME RESIDENTS

Powernet, a leading network integrator in the Cincinnati area, takes pride in its civic involvement. After accepting an award in front of city leaders and challenging them to do more, Powernet was approached by the Community Learning Center Institute at Oyler School in Lower Price Hill, a lower-income area of Cincinnati. Oyler School sought to provide leading-edge curriculum and teaching but did not have access to computers or broadband outside of the school grounds. This lack of broadband access puts its students at a disadvantage, and they were falling behind. Powernet worked with Oyler to provide its first deployment of public Wi-Fi and this became the inspiration to continue doing this type of work in other neighborhoods. Avondale was the next neighborhood the team decided to work with.

#### CHALLENGE

Powernet quickly realized not having access to public Wi-Fi was more than just a K-12 issue and that it was impacting all citizens in the Avondale area, including adults as well as its students. According to Edita Dolan-Mayo, Marketing and Community Affairs Director for Powernet, "Many residents did not have access to broadband Internet, creating difficulty with everyday tasks including looking for jobs, writing resumes and accessing basic city services. They only had access to a few public hotspots and the library that provides computers and broadband Internet, still wasn't enough."

#### **Powernet wanted to solve this challenge to provide Wi-Fi to the community and seek additional ways to help out the community.**

In 2012, The Community Builders (TCB) and local partners submitted an application for a Choice Neighborhoods Implementation Grant for Cincinnati's Avondale neighborhood to the United States Department of Housing and Urban Development (HUD). The application was successful, and HUD awarded TCB and the local partners a \$29.5 million Choice Neighborhoods Implementation grant for the Avondale neighborhood. At the same time, ACDC (Avondale Comprehensive Development Corporation) saw Powernet's activities to help "erase the digital equity" at the Oyler School and introduced Powernet to TCB to see how they might work together to help Avondale. The Choice Neighborhood Implementation grant stipulated that TCB 'give back' to the community in addition to their work focused on housing and developing strong communities. Powernet and The Community Builders saw this as a great opportunity to help adults and students by providing free broadband Internet access. Working with HUD, the full funding of 15 Wi-Fi hotspots along a ½ mile stretch of the main street in Avondale was approved.

#### SOLUTION

Powernet chose Ruckus' T300 APs and mounted them on buildings served by redundant 100 Mbps circuits over cable. Ruckus' P300 point-to-point APs are being used to backhaul traffic to the centralized location and extend coverage for the full ½ mile. "The Ruckus Wi-Fi solution provides ample capacity and coverage for the Wi-Fi network that serves hundreds of concurrent users. This has delivered an ideal Wi-Fi solution for Powernet with sufficient capacity to serve all users with no rate limits,"

said Joe Bradley, business account executive of sales for Powernet. Network access is managed using Powernet's Beyond Wi-Fi platform which captures user demographic and survey information during the onboarding process. End-users can authenticate using social media credentials such as Facebook. Powernet can understand user needs and activities through the Beyond Wi-Fi survey capabilities. The most common uses of the Wi-Fi network to date include: 1) education, 2) job search and 3) social media and entertainment. Powernet is working to map this survey data with actual, anonymous metrics on end-user traffic that can be generated using the Ruckus SmartZone controller.

"The network gets consistent use every day with peak loads of several hundred concurrent users during festivals or other events," said Bradley. "85% of the end-users are returning customers, and session lengths vary from 15 minutes to over 4 hours."



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### JOE BRADLEY

Business Account Executive of Sales, Powernet

Building on the successful rollout in Avondale, and an ever-growing awareness of the critical needs in and around Cincinnati, Powernet began talking with Cincinnati public schools. They have a program, called Vision 2020, that provides laptops to students school use as well as at home. Students with no broadband access at home are given 'MiFi' devices that create small, in-home hotspots. While this enables student access to the Internet when they go home, there are some challenges since the devices do not have content filtering or tracking to ensure the MiFi devices are returned to school.

Searching for another solution, Powernet, TCB and CPS have proposed a pilot project to deploy Wi-Fi in 9 Community Builder renovated apartment complexes. Powernet will deploy Ruckus Wi-Fi throughout all 9 buildings, using R500 and R700 indoor APs. These are managed as different zones on the same SmartZone controller that is used to manage the Avondale deployment. Wi-Fi will be available at no charge to all building residents. In addition, a dedicated network for Cincinnati public school kids provides access to school content with content filtering.

### Ground breaking for the second phase of community Wi-Fi inside buildings is set to begin in May 2018.

The expected five-year cost of deployment for the 9 buildings is estimated to be \$300,000. While Powernet has committed initial resources to get the project started, they have continued to look at innovative options to create a fully sustainable business model that is not dependent on ongoing donations. They are approaching local organizations to discuss innovative public private partnerships (PPP) that can enable new services while also funding Wi-Fi.

For example, they are working with the American Heart Association (AHA) to deliver healthy food and cooking information online, and promote nearby healthy cooking events. This helps to address common challenges in low-income neighborhoods that have food desserts with a high percentage of people lacking fresh fruits and vegetables potentially causing medical issues. If this program proves successful, then the AHA has a new way to:

- Reach targeted populations via a new, low-cost marketing vehicle
- Capture demographic and other data via online surveys
- Test and measure new messages and content to continually increase its impact on helping the lives of low-income Cincinnatians
- Potentially engage with nearby hospitals to deliver further mentoring and health services

Powernet is excited to be helping the community while also developing new business models that may enable much larger scale deployments in the near future. Working with Ruckus and their own Beyond Wi-Fi access management and analytics platform, Powernet has a proven solution that can be deployed to help bridge the digital divide and deliver public Wi-Fi in many environments.

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