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The LeadingAge Center for Aging Services Technologies (CAST) is focused on accelerating the development, evaluation and adoption of emerging technologies that will transform the aging experience. As an international coalition of more than 400 technology companies, aging-services organizations, businesses, research universities and government representatives, CAST works under the auspices of LeadingAge, an association of 6,000 not-for-profit organizations dedicated to expanding the world of possibilities for aging.

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## Designing and Implementing a Ubiquitous Wi-Fi Platform to Satisfy Residents, Guests and Staff

### *Categories*

Resident Satisfaction  
Point of Care  
Campus Technology Infrastructure  
Technology Strategic Planning

### *Organization Name*

Vinson Hall Retirement Community

### *Organization Type*

Life Plan Community (Formerly Continuing Care Retirement Community)

### *Other Partners*

ProviNET Solutions, CTSI, Hewlett Packard Enterprise, Aruba Networks

### *Organization Description*

Located in McLean, VA, just across the river from Washington, D.C., Vinson Hall Retirement Community is an active, resident-focused Life Plan Community (formerly called CCRC) that values independence and individuality. The organization celebrates and encourages freedom of expression, personal choices, and the opportunity to maintain, revitalize and begin friendships. As the community grows and expands, they continue to offer an exceptional environment with the best selection of amenities and services.

Vinson Hall is committed to the ongoing health and security of its residents and promotes physical and spiritual well-being by offering fitness programs, health services, and pastoral support. When a resident's need for care increases, Arleigh Burke Pavilion provides assisted living and skilled nursing, and The Sylvestery specializes in long-term care for those with Alzheimer's or other forms of dementia— all within a vibrant community.

Vinson Hall has long recognized the value and efficiency of using standardized modern technology tools, and with future growth endeavors planned, recognized the need to implement a forward-thinking, robust local area and wireless network solution.

### **Project Description**

Following some large-scale campus construction projects, Vinson Hall was facing a challenge of addressing concerns voiced by the residents regarding television and internet services. Depending on what building or even what part of a building a resident was living in, there were different technologies being deployed for resident television and internet access. It was causing emotional stress for the residents and the administration who fielded complaints from the residents.

Vinson Hall invited ProviNET Solutions (Tinley Park, IL) to create a comprehensive technology strategic plan that covers evaluating the current challenges, developing a future roadmap for technology governance, infrastructure, information system, and supporting success. Throughout the assessment, ProviNET learned that staff and resident users had a number of challenges when connecting to the Wi-Fi network; and that there was frequent connectivity downtime in buildings on certain areas of the campus. Residents expressed that they felt there were almost different “classes” of residents throughout the community – indicating that some residents had more or better technology services than others. The reality was, there were different services being provided throughout the community creating inconsistencies in the residents’ technology experience.

In 1954, renowned psychologist Abraham Maslow published a book called “Motivation and Personality” where he fully expressed his well-known theory on the hierarchy of human needs, which involve:

- Physiological (air, water, food, etc...)
- Safety (personal, financial, health, etc...)
- Social (friendship, family, etc...)

If Maslow was to rewrite his book for the modern era, it’s likely that a new category of human need would be defined, and that need would be “Wi-Fi connectivity.” We can share a chuckle over that, but all joking aside, seniors are demanding robust, consistent Wi-Fi connectivity at the senior living communities where they choose to live.

To further complicate things, Vinson Hall shared with ProviNET that their current local technology provider had really limited the network administration capabilities that the organization was able to do on the firewall device. The IT staff at Vinson Hall had no ability to login to the firewall to review performance metrics, troubleshoot problems, or change settings. The IT staff really was in a difficult position, wanting to be able to evaluate performance concerns, troubleshoot issues, and resolve challenges.

With an aging network infrastructure in place at Vinson Hall, and components supplementing the infrastructure over time, it was time to strategically think about a networking overhaul and build a network to satisfy several purposes. This effort involved designing a brand new core, distribution and edge networking solution, laid out in a star topology, with 10GB networking capability at its core. Additionally, the entire Vinson Hall campus was “heat-mapped” – which is a process of assessing Wi-Fi coverage by virtually placing access points through the community and using a software application to evaluate how well Wi-Fi signals will travel throughout the community.

### **Solutions and Embodiments**

Vinson Hall tasked ProviNET with developing a detailed strategy for overhauling its core, distribution, edge and Wi-Fi networking platforms. This endeavor was assigned to ProviNET’s solutions architect, Tim Bakker, ACMP.

*“Vinson Hall’s required a network that would adequately meet the needs of today while positioning them for the future,” says Bakker. “We had to systematically look at blueprints, walk through the site to evaluate locations, and carefully plan out the location and connectivity route for every single piece of equipment.”*

The end result was a comprehensive design, assembled by Tim Bakker and ProviNET’s team of networking engineers. This design included a network topology map with IP schema for every switch that was part of the network. It included instructions for fiber and copper connectivity to most efficiently route traffic from one end of campus to another. Additionally, the design was accompanied by heat maps, outlining the physical location of each access point that was planned for the building, and showing the coverage for both the 5GHz and 2.4GHz spectrums.

ProviNET leveraged the reliability and cost-effectiveness of switching hardware from Hewlett Packard Enterprise (HPE) and wireless hardware from Aruba Networks (now, also part of HPE).

*“HPE and Aruba have been market leaders in networking and wireless technologies for years. The proven success of HPE and Aruba, paired with their forward thinking vision allows customers to be successful without busting the budget.” Joe Velderman, Director of Consulting Services for ProviNET Solutions.*

For many non-profit senior living providers, Wi-Fi can be a costly endeavor, so it is critical to put a robust solution in place that also provides quick ROI, and the combination of HPE and Aruba allowed Vinson Hall to do that.

### **Business Model**

Today, Senior Living providers have a need to utilize technology for an array of services for their business. There are so many options for providers to choose from, and knowing which combination of optimal technologies can be a daunting challenge. Furthermore, with the emergence of more and more IP based technologies – there is an even greater demand to have a robust network in place to handle the connectivity and bandwidth requirements of these devices.

Organizations find that they must shift their attention away from their core business to address technology challenges. This is a critical reality of today’s business environment, but not all providers have the internal staffing or expertise to handle the complexities and options of technology solutions available to them. More than ever, it is important to strategically think about how hardware devices will live on the network, how users will be on-boarded to the new network, and how to leverage network hardware for a host of devices, services, and traffic.

Having a trusted technology partner who can advise, consult, and deliver services around the unique needs of senior living and post-acute care can be invaluable for providers, freeing up the time, effort, and energy to focus on what they do best, providing quality hands-on care for the residents they serve.

### **Outcomes**

Initially, ProviNET was hired by Vinson Hall to perform a strategic technology discovery assessment for the organization. From that assessment, ProviNET found

that Vinson Hall had some network reliability challenges stemming from the substantial growth of the campus over the previous five years. Both staff and residents throughout community were unable to get reliable Wi-Fi access.

Vinson Hall requested ProviNET’s assistance in addressing these network issues. The initial phase focused on updating the wired network switching infrastructure to enhance the reliability and capabilities of the network’s foundation. Vinson Hall and ProviNET were able to leverage much of the existing fiber optic infrastructure as part of the overhaul and the ultimate implementation was a great success.

The next phase was the design and implementation of a campus-wide Wi-Fi system for both staff, resident, and guest use. Vinson Hall and ProviNET designed a full solution for the wireless network including the wireless hardware infrastructure and necessary cabling upgrades required.

Prior to the networking enhancements, residents at Vinson Hall were experiencing problems with their Wi-Fi network and needed an experienced IT partner to come in and rectify the challenges they were facing. During the project it was evident that Wi-Fi was the number one concern with the residents. Throughout the installation, residents would frequently inquire about the progress of the Wi-Fi project. Today, the residents are able to utilize Wi-Fi hassle-free and can connect their personal devices to the internet.

Along with the importance of creating a reliable Wi-Fi network for Vinson Hall, it was also important that we setup the Vinson Hall IT staff for success from the infrastructure perspective. The one thing that was discovered during ProviNET’s initial discovery was that Vinson Hall’s previous IT partner didn’t provide administrative access or network administration rights to the IT staff. ProviNET wanted to make sure the Vinson Hall team had useful knowledge regarding their upgraded IT infrastructure. In addition, ProviNET wanted to instill confidence within the Vinson Hall leadership team that they had the ability to take control of passwords, training, or to any IT aspect. ProviNET Solutions wanted to make sure that Vinson Hall was able to manage their IT solutions and if they needed additional support that ProviNET would be there to help them. It allowed Vinson Hall to address any IT related issues internally and leverage ProviNET if/when needed.

In the end, Vinson Hall received a reliable and sustainable network that facilitated connectivity for both the staff and residents. Both residents and staff have shown a great excitement and appreciation for these improvements to the campus network and Wi-Fi infrastructure.

### *Advantages to the Approach*

#### *The Right Vendors*

Working with the right vendors can help push the project over the finish line. ProviNET choose to work with Aruba Networks because they have the most complete vision for wireless and wired networking in the industry. Aruba Networks is the leader in their industry and has a reputation for not only exceeding the expectations of their clients but their partners as well. ProviNET has had the privilege in working together with Aruba on several different projects. In each instance the outcome was very successful. When ProviNET had to decide which partner would be the best to assist with Vinson Hall's vision, Aruba was the obvious choice. ProviNET has worked on multiple projects with Aruba Networks and felt at ease knowing that because of previous successes this would have the same result.

One of the major components in making sure a project is going to be successful is understanding all your client's requirements anticipations. There is a lot of strategic planning that goes into a project and sometimes can lead to an overwhelming feeling for the client. Vinson Hall requested that ProviNET work with CTSI, a local vendor familiar to Vinson Hall, when it came to structuring cable. Even though ProviNET didn't have previous experience working with CTSI, in ended up becoming very beneficial in the long run. Since CTSI was local and familiar working with Vinson Hall they were able to share useful knowledge about Vinson Hall's campus. They were able to point out specific locations where cable could be configured. Working together onsite allowed ProviNET and CTSI to strategize on what items would work and helped determined ones that wouldn't. From there ProviNET and CTSI developed a blueprint layout to Vinson Hall on how the structuring would look.

#### *Small Wins go a Long Way*

Small wins pave the way to the bigger picture. Looking back the project to implement a universal Wi-Fi platform for Vinson Hall was very large and could have even been considered overwhelming; however, ProviNET was up for the challenge. Instead of looking at the project

as a whole, ProviNET developed a manageable plan that highlighted accomplishments along the way. This helped not only reassure Vinson Hall that their project expectations were being met, it also set the stage for what was forthcoming. It helped paint a bigger picture that while there was work ahead, the project did have a successful end in sight.

### *Challenges and Pitfalls to Avoid*

One of the challenges when implementing a solution like the MyLAO app, has been helping residents to relax and allow themselves to learn how to use the app. Seniors do not want to be forced to do anything, including learning and using new technology. It's important to the success of your project to allow residents to learn it at their own pace.

### *Lessons Learned*

*Take Small Wins* - A large project such as this can be overwhelming if looked at only as a whole. Breaking the project into smaller pieces allows everyone to focus on smaller interim goals, achieve them, and then move on to the next ones. Ultimately, each of these small wins build upon each other until the overall vision is achieved.

*Trust and Communication* - Working with multiple organizational stakeholders and vendors on a large project requires consistent communication and trust by all parties to achieve. Recognizing the importance of communicating helps everyone stay on target and work together towards each goal.

### *Advice to Share with Others*

Communication was a key element in making sure the project was successful. Communication does indeed go a very long way especially working a project that included multiple stakeholders and vendors.

It was important that everyone was on the same page and was reaching for the same goal. In the beginning, there were a lot of great suggestions by different stakeholders in the organization; however, it was important that if this project was going to be a success, there would have to be one predetermined goal. It was vital for ProviNET to work together with Vinson Hall on establishing the ultimate goal and then strategize on the steps required to make it successful.

Another piece of advice to share is making sure that the client's expectations are always being fulfilled. One requirement that Vinson Hall requested was having

ProviNET work with a local vendor. Even though ProviNET didn't work with CTSI, the local vendor, previously, ProviNET was excited about the opportunity of sharing knowledge and working together. One advantage was the ability to work directly with CTSI on-site. It helped both ProviNET and CTSI decide which techniques would work and discover the ones that wouldn't be successful. It allowed both ProviNET and CTSI to strategize on the project and determine a unified vision for Vinson Hall.

Aruba Network, a Hewlett Packard Enterprise (HPE) Company is no stranger when it comes to implementing Wi-Fi in larger scale projects. Aruba's professional approach and being a highly reputable resource was the perfect combination in making sure that Vinson Hall's project a success. Aruba was able to provide Vinson Hall with the performance, coverage, and security that satisfied both residents, guest, and staff. Their expertise and being highly touted as an industry leader in both wired and wireless technology helped push the project over the finish line.