

WIRELESS NETWORK CONTROLS INVENTORY, CAPTURES CUSTOMERS

Gristedes' enterprise wireless LAN upgrade offers enhanced customer services to help keep the supermarket chain competitive.



Shawn Winters
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At a Glance

COMPANY: Gristedes Supermarkets

HEADQUARTERS: New York, N.Y.

EMPLOYEES: 1,700

I.T. STAFF: 15

BUSINESS: Gristedes is a New York City-based chain of supermarkets that has been serving its urban customer base since 1888. The vast majority of Gristedes' locations are within the New York City borough of Manhattan. Of the 31 Gristedes stores in operation, three are located outside of Manhattan: Brooklyn, Roosevelt Island and Scarsdale, N.Y.

In densely populated New York City, deploying wireless LAN or WLAN can be challenging. Any given location might have as many as 1,000 neighboring wireless networks. And unreliable communication links can lead to data loss, dropped service and slow Internet access.

In this congested environment, Manhattan-based Gristedes Supermarkets relies on an enterprise WLAN to provide its stores with secure, high-performance wireless Wi-Fi communications. The chain uses Aruba Networks' Wireless Virtual Branch Network (VBN) solution for deliveries, inventory functions and digital signage connectivity.

"We initially enhanced our wireless network for PCI [Payment Card Industry – Data Security Standard] compliance and wireless inventory control," says Shawn Winters, IT infrastructure manager for Gristedes. "Now we have added wireless-enabled digital signage at all 35 stores, allowing us to increase our personal engagement with customers."

Future plans call for the supermarket chain to deploy increasingly advanced applications over the wireless network. All the while, Gristedes is looking to provide an even better customer experience while using the advantages of an enterprise WLAN to significantly reduce the time needed to set up IT infrastructure at new stores.

Serving the Customer

Next to pricing and inventory, customer service is the key to success for any retail business. Nobody knows this better than Gristedes. The grocery retailer has served New York City's borough of Manhattan since 1888 – over 100 years.

Currently Gristedes has 31 locations, with 28 throughout Manhattan. The chain also has individual locations in Brooklyn, Roosevelt Island and Scarsdale in suburban Westchester County.

Enterprise WLAN Benefits

Wireless LANs are becoming increasingly popular within the enterprise IT infrastructure. Here are some of the reasons why:

- Lower cabling costs
- IT setup time reduced from weeks to hours
- Better utilization of the reliable 802.11n wireless standard
- Secure "follow-me" connectivity provides access anywhere users roam
- Advanced connectivity options overlay existing network
- Centralized management
- Application continuity services and application awareness assure service delivery
- Added scalability and high availability from a more robust enterprise WLAN

The stores offer fresh meats, produce, baked goods, dairy products, frozen foods, gourmet foods and nonfood items. Customers have come to expect not only the best products at the greatest value, but also a high level of personal engagement and a high-quality experience.

Few environments are as competitive for supermarkets as Manhattan. Customers are demanding, store choices abound, and rents and other expenses are high.

Furthermore, most stores sit at the ground floor of high-rise residential and office towers on busy avenues. Typically, there is no place for a traditional rear-entry loading dock, so food deliveries have to be made through the front door, often as customers are streaming in and out.

In this crowded and sometimes disorderly environment, Gristedes needed to employ a no-fail wireless network that could handle the unusual barrage of potential interference threats while bringing functionality to stores and convenience to customers. The company identified Aruba's Wireless VBN to be the optimal solution.

Enterprise WLAN

The Aruba VBN is designed to connect remote workers with enterprise apps and resources. All configuration, management, authentication and reporting is done centrally by an Aruba controller in Gristedes' data center. This eliminates replicate routing, switching and other services at each remote location.

Aruba's VBN solution is said to substantially reduce both capital expenditure (CAPEX) and operating expenditure (OPEX). And while Gristedes found replacing appliances and WAN links with Aruba's remote access points (RAPs) was easier, faster and less expensive than expected, the company gained much more from the implementation.

Today, Gristedes uses Aruba's enterprise WLAN together with Honeywell Dolphin wireless barcode hand scanners and in-house developed Direct Store Delivery (DSD) software to receive and log product deliveries into its inventory software in a single step. Aruba's VBN provides the performance and reliability to complete the delivery process more quickly and efficiently than before.

Gristedes also uses the Aruba VBN solution for inventory maintenance and price checking using NCR's Mobile Retail Manager. This is important in New York City, because stores can be fined if prices at the register don't match advertised pricing or prices shown on product shelves.

In addition, the enterprise WLAN allows Gristedes employees to use tablets and other wireless-enabled devices to check shelf pricing and product inventory in order to ensure stores are stocked correctly.

Speed, compliance and reliability aren't the only reasons Gristedes deployed the Aruba VBN solution. The company considers its wireless upgrade a future-proofing investment that will add tremendous value to its customer services.

For example, Wi-Fi connected digital signage is currently used throughout Gristedes' stores. The signs are geared to highlight in-store promotions while displaying news, weather and stock quotes. The digital signage is also generating incremental advertising revenue for the stores.

Thanks to features such as device fingerprinting, which lets network administrators assign network policies and access control based on user, device and application, Gristedes will be able to offer customers with notebook PCs, tablets and smartphones Wi-Fi Internet access via Aruba's Amigopod service.

Once customers are signed up and connected, Gristedes will be able to engage them with loyalty programs, customized promotions, digital coupons and possibly even enhanced digital checkout capabilities. This will help to give the supermarket chain an advantage in Manhattan's competitive marketplace.

Wireless: Today and Tomorrow

Prior to upgrading to the VBN solution, Gristedes had a scattered deployment of Wi-Fi wireless communication solutions across its supermarkets. "We had a hodgepodge of different vendors' access points," Winters says.

Deploying Wi-Fi was challenging, particularly with all the competing wireless network installations in the residential apartments and offices above the stores or in nearby buildings. "We had a lot of performance issues," Winters recalls.

Other performance issues came from the stores' wired Multi-protocol Label Switching or MPLS network WAN connections. Given the dense urban environment and non-stop construction related outages, these are often not as reliable as they should be.

"Last mile infrastructure in Manhattan can be a nightmare with store connections going down for hours or days when it rains, snows or for a whole variety of reasons," Winters adds. "A DS3 [digital signal 3] issue on the East Side of Manhattan could take out six stores and we would just sit there waiting for it to be fixed."

To run credit card transactions, all Gristedes stores would have to go over MPLS to the data center at headquarters and then out to the Internet through the central router. When MPLS connections would go down, credit card transactions and customer checkout would slow to a crawl.

Thanks to the split-tunneling feature of Aruba's RAP-5WN remote APs, Gristedes is now able to provide both MPLS and direct public Internet connections from each store. If the central connection to the Internet goes down, stores can continue running credit card transactions over direct Internet connections.

The RAP-5WN also offers 3G backup Internet connections so even if wired store connections go down, transactions continue wirelessly. And Aruba is said to make 4G failover available later in the year.



Winters with Chris McCrae, CIO, Gristedes/Red Apple Group

"We now have an absolutely seamless backup infrastructure for the store when we're having wired connectivity issues," Winters says. "Employees just continue checking people out. They don't know whether they're on a 3G or wired connection."

"Many businesses can bypass MPLS altogether and use the VBN solution over inexpensive generic T-1 lines or DSL," says Manish Rai, Aruba's director of retail solutions. "This can reduce capital expenses dramatically in addition to deployment time."

A connection failure during a test deployment is what originally convinced Winters that the Aruba VBN was the way to go. "We had a core switch failure at headquarters that took down the entire company for a period of time," he recalls.

"At that time we were piloting the Aruba solution at one of our stores and it was the only store that was able to completely function with no interruption," he adds. "That really sold us. We wanted that type of survivability across all of our locations."

With all the nearby wireless networks, security can also be an issue. This has made achieving PCI compliance challenging for Gristedes.

"We were using the WEP [Wireless Equivalency Protocol] for security, which was insufficient for PCI compliance," Winters says. Aruba provides industrial-strength WPA2 wireless security across all Aruba APs, enabling easy deployment of a security standard that is more acceptable for PCI.

Aruba's solution can also detect when rogue APs have been plugged into the network, which is another requirement of PCI compliance. "The Wi-Fi solution helps ensure PCI compliance and it provides seamless 3G backup for our critical store systems," says Chris McCrae, CIO of Gristedes and Red Apple Group, the firm's parent company.

Ease of Management

Management of the wireless infrastructure was also an important issue. This was especially apparent when Gristedes had many different brands of access points and no central management capability.

With a total of 1,700 employees, Gristedes only has 15 people on its IT staff, including all development and field personnel. Installing, configuring and troubleshooting all those individual APs was an unnecessary drain on such a lean IT staff.

"The access points were running several different management modules and many products were no longer supported," Winters says. "Having 35 individual access points to manage and troubleshoot just didn't make sense. We really needed a more cost-effective solution."

With the VBN, which tunnels over the Internet to a centralized Aruba 6000 Mobility Controller, Gristedes can configure and manage all its APs from a single console at the data center. "It's so easy to make changes on the fly," Winters adds.

This helped allow Gristedes to roll out 31 new wireless-connected digital signage installations in four days. "I could add the SSID [service set identifier] to the controller and set up the security settings in under two hours," Winters notes.

"Then I could give the units to the field guys and they could just bring them to the stores, plug them in, associate them, and be up and running," he adds. "Prior to that, I would have to log into 35 different CLIs [command line interfaces] and set them up individually. In terms of labor costs, we probably saved thousands of dollars on that installation alone."

Winters is also impressed with the wireless network visibility the Aruba AirWave Management Platform offers. "I can see what users are connected to the controller and get a dashboard and reports that run nightly," he notes.

"I can also see graphs on utilization and locate particular scan guns and wireless devices in the stores." Winters likes the fact that he can get all this information through point and click rather than a CLI.

"The Aruba platform allows this type of data access through the graphical interface without having to know any CLI syntax. Having an easy-to-use GUI makes life much easier," he says. "And we recently upgraded to AirWave 7.3 which offers added

Syslog support, Juniper switch upstream detection and CLI support controls right from the browser."

Aside from ongoing management economies, the upfront cost savings from Aruba's VBN solution was also significant. The Aruba solution was less expensive than some alternative offerings by as much as 35 or 40 percent, according to Winters.

Store installations range from three to eight Aruba AP 105 access points, depending on store size and configuration, and one RAP-5WN for Internet connectivity. "Some stores have horseshoe shapes, multiple stories, large steel support beams and basements, so they need more units," Winters says. "We get excellent, cost-effective coverage."

Gristedes is an outstanding example of a company implementing customer-facing innovation by leveraging its enterprise wireless LAN. Thanks to its Aruba VBN, the supermarket chain will continue to provide the advanced services customers expect in today's digital age.

A Partnership for Success

Choosing and deploying the Aruba Virtual Branch Network (VBN) solution has been a positive, trouble-free experience thanks to Gristedes Supermarkets' partnership with CDW.

It was CDW that originally introduced Gristedes to the Aruba VBN solution. "I hadn't heard of the Aruba solution before CDW suggested it," says Shawn Winters, IT infrastructure manager for Gristedes. "They set up a conference call with Aruba and the rest is history."

After discussing Gristedes' needs and vision with his customer, CDW Account Manager Brad Beno conferred with CDW LAN/WAN Specialist Chris Merlo. "We discussed the different solutions that would fit Gristedes' particular environment," Beno says.

"We understood where the company was headed and what they wanted to accomplish," he adds. "We knew the Aruba offering would be a good fit. We also worked closely with the Aruba team during the entire process."

"There's been a constant feedback loop with Aruba and CDW so there haven't been any surprises," Winters adds. "The entire working relationship has been a pleasure."

Winters also notes CDW's breadth of product offerings. "I can search for just about anything and always find it," he says. "If I have any trouble, I can phone my CDW account manager and he'll find it. And if CDW says it's in stock, it's in stock and will ship quickly."