

CASE STUDY



FUTURE FORWARD

Classified Ventures' Jason O'Sullivan says it's fairly common to see employees toting notebook computers, tablets and smartphones at the same time.

At a Glance

COMPANY: Classified Ventures

HEADQUARTERS: Chicago

EMPLOYEES: 1,500

BUSINESS: Founded in August 1997, Classified Ventures owns and operates the award-winning Cars.com and Apartments.com websites. Both include detailed listing information, photo galleries, videos, reviews, blogs and online calculators to help consumers make more-informed decisions.

A wireless infrastructure upgrade helps Classified Ventures deliver the same mobility perks to customers and employees.



TWEET THIS!

Today, many people expect to use wireless and all manner of mobile devices wherever and whenever they want.

That's why Classified Ventures, operator of the award-winning automotive and rental websites Cars.com and Apartments.com, worked hard to ensure that its millions of online customers can shop either site from their smartphones and tablets while on the go.

The same mobility advantages those customers enjoy extended to the company's 1,500 employees when it unveiled a new 802.11n wireless network at its Chicago headquarters in spring 2012. In recent years, wireless access transitioned from "a convenience that was nice to have to something that's simply expected," says Vice President of Corporate Technology Jason O'Sullivan, adding that the company will take another look at its network — and boost it further, if needed — in mid-2014.

"All I can say is, if I turned the wireless off at any point today, there would be pandemonium," O'Sullivan says. "We support a very diverse group, and whether they're board members or engineers, people expect to just grab their equipment and work in a conference or board room or wherever they want without thinking about it."

The Wireless Buildup

Classified Ventures decided to upgrade its wireless network a few years ago, when mobile devices began to proliferate and the consumerization of IT became a widespread phenomenon. Suddenly, O'Sullivan says, it was common for Classified Ventures' employees to be issued

as many as three devices — a notebook computer, a tablet and a smartphone.

"We needed to make sure we had enough bandwidth and density of coverage to handle the load," O'Sullivan says. "That's when we called CDW to come do an assessment and site survey."

Dan Flood, an advanced technology account manager for CDW, says Classified Ventures was having issues with wireless users being kicked off its network, along with slow and intermittent connectivity. CDW engineers suspected that the problems were caused by an aging wireless solution and increased demands on the company's wireless network.

"The survey entails CDW sending an engineer onsite for a few days to evaluate the wireless network," Flood explains. "The test results proved that users were overloading the wireless infrastructure — a condition that would be solved by an upgrade."

Classified Ventures initially considered implementing the Meraki cloud system, before Cisco acquired Meraki and the cloud-based solution went to market as Cisco Meraki, Flood recalls. The fact that the bulk of the company's employees work in the Chicago office made the need for a cloud infrastructure less pressing, so CDW encouraged the company to stay on-premises with Cisco and perform a network upgrade instead.

"We upgraded all the access points [APs] and increased their density," Flood says. "Now they have control onsite and a network that can be expanded as their needs grow."

Easy Does It

Many of the Cisco 5508 wireless controller's built-in tools make network management far easier than it was 10 or even five years ago, when wireless networks began to proliferate within business environments, says Adam Kerasotes, senior systems engineer for Classified Ventures.

The company uses the controller's "guest captive portal" feature, for example, to set up guest networks for visitors and contractors. The controller's CleanAir technology and Cisco Prime features, meanwhile, allow network managers to automatically set the wireless channels — a welcome benefit for IT staff who previously had to set channels by hand — and to more effectively manage network interference from Bluetooth connections, cordless phones and microwaves. Another Cisco Prime monitoring tool "collects data from the APs and lets us know if there are any problems on the network," Kerasotes continues.

Classified Ventures also offers visitors hotspot-quality functionality on its wireless network, as well as a wired connection. "Visitors can see the Internet, but they can't access any company data," he explains. "They don't see any of our DNS settings and can't route to our internal IP space."



37%

The percentage of IT managers who say the increased use of smartphones, tablets and their associated applications will have a significant impact on their company's IT budgets in the next 12 months

SOURCE: "The Forrester Wave: Enterprise Mobility Services" (Forrester Research, February 2013)

The overhaul included the deployment of 55 Cisco Aironet 3602I APs across Classified Ventures' three floors, along with two Cisco 5508 wireless controllers. The company uses the FlexConnect feature in the controllers to run two to three APs apiece to its main satellite facilities in Santa Monica, Calif., and Austin, Texas. All wireless traffic runs across the local Internet connection at each remote site.

According to O'Sullivan, each AP supports up to 60 client devices, resulting in vastly improved network performance. "We want to let people bring their own devices," he says, "and that kind of density gives us the ability to support it."

Dual-Band: A Big Deal

The new APs and controllers replaced the Cisco 1200 Series APs and 4400 controller that Classified Ventures deployed about six years ago, says Adam Kerasotes, the company's senior systems engineer. "We upgraded from a Wireless B/G network to Wireless N — both to support the many more devices that people were bringing to work and to go dual-band," he says.

Transitioning to dual-band was a big deal, Kerasotes says, and it enables the company to operate the network in both the 2.4-gigahertz and 5GHz spectra. "Running dual-band increases our performance," he says. "The newer notebooks with the 5GHz cards are optimized to run on the 5GHz spectrum. Plus, Wireless N networks tend to run more efficiently over the 5GHz spectrum."

The goal is to have enough bandwidth available to handle the influx of devices on the network, Director of Technology Jim Houska says. Thanks to those improvements, the company's headquarters now has 100-megabit-per-second to gigabit bandwidth levels in some locations. The dual-band helps with traffic segmentation and also minimizes device contention.

Modernizing the Data Center

A strong wireless network requires an even stronger back-end data center that can deliver speedy query response times and roll out applications to project teams in a timely manner.

That's why Classified Ventures also worked closely with CDW to refresh its data center using a combination of integrated servers and switches within Cisco Systems' Unified Computing System (UCS), VMware's server virtualization solutions and EMC storage.

Dan Flood, an advanced technology account manager with CDW, says Classified Ventures had already started down the virtualization path, but was using traditional computing. CDW suggested the Cisco UCS platform could help the company better virtualize the environment, ultimately resulting in greater savings when it came to rack and power space.

"Using CDW's suggestion, Classified Ventures standardized on UCS and has since converted roughly 95 percent of its computing to Cisco UCS and Nexus," Flood adds.

The project began in 2010 with the deployment of Cisco UCS, but accelerated in 2012 when Cars.com chose the VMware/UCS pairing as its primary computing platform, says Vice President of Corporate Technology Jason O'Sullivan.

The combined technologies allow the company to more easily support project teams, adds Jim Houska, director of technology. "Today, we can provide a team with virtual machines for applications in a matter of minutes," he says. "It gives us the agility, flexibility and scalability we need."

That new infrastructure has delivered substantial savings, Houska continues. Physical server maintenance costs (including power and cooling), for example, have dropped 70 percent, and cabling costs are a fraction of what they once were.

For now, company officials have taken a pass on VCE's Vblock data center convergence technology. "But we're planning to do a virtual desktop infrastructure deployment next year, and for that, we'll take a closer look" at Vblock, Houska adds.



22 million

The average number of monthly visitors to Cars.com

SOURCE: Classified Ventures

"We have an increase of people running voice and collaboration applications on Microsoft Lync over the wireless network, so we needed to upgrade to support those as well," Houska continues. "With more people running more devices, applications and technologies, there was no question that the upgrade was necessary."

O'Sullivan says the upgrade went smoothly and was completed in a matter of months. "We delivered the coverage we need for the next couple of years and a network we can scale as our needs grow," he says, adding that CDW also helped the company to work through some of the more technical issues IT encountered.

"As the wireless deployment entered its warranty phase, several locations were cited by our employees as having poor reception. CDW came back and resurveyed

Survey Says ...

All wireless LAN deployments start with a site survey — an important first step to avoiding the technical issues that can arise when projects are poorly planned.

Cisco Systems recently published guidelines for WLAN deployments that outline the three types of site surveys that are available to organizations and how they are used. Here's an excerpt:

Passive: In this method, the survey client never associates to the access point. Such surveys can be helpful when an organization looks for rogue devices or wants to gauge downlink radio frequency (RF) coverage from the infrastructure devices. Passive surveys can identify rogues, quickly locate RF trouble zones, validate final RF settings and perform initial surveys.

Active: Unlike passive surveys, active surveys are performed with the survey client associated to the APs used throughout the survey. When a client is associated, it performs all of the tasks a typical 802.11 client performs, including shifting data rates as the RF condition changes. Active surveys are commonly used for new WLAN deployments because they provide the most detail on which a design can be based.

Predictive: These surveys are performed with a software program that uses information about a coverage area to set AP placements based on RF algorithms. Predictive surveys typically lack field measurements. This method is best used when a deployment environment hasn't yet been built; as a means to obtain a budget for WLAN-related hardware; or in situations in which roaming requirements are less stringent.

SOURCE: *Site Survey Guidelines for WLAN Deployment* (Cisco Systems, April 2013)

the wireless coverage for the areas where we had concerns," O'Sullivan says.

"We anticipated a fix was needed, and their technology confirmed it, but they also made sure the changes were targeted versus a more trial-and-error test," he adds. "We were able to make changes to the network configuration while achieving our primary goal of providing a great experience for our employees and guests."

Photography by Bob Steflo



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