PRACTICAL PERSPECTIVES:

Top Wireless Trends

Today's wireless communication technology is fueling a revolution in the way people access and share information

100% WIRELESS

Today, many companies are going 100 percent wireless. This is a big demand on companies' Wi-Fi systems. Your wireless network is shared among all users. Laptops and mobile devices are "talking" at the same time, using the same system, and users have to wait their turn—like merging onto a highway during rush hour (just imagine the 405 in L.A. during rush hour). Speeds may be slower than users experience with a direct connection.

But there's good news. Today's wireless technologies, including the new 802.11ac Wave 2 standard, are increasing the speed of wireless networks; we can now achieve 1.3 gigabits from a laptop. Rush hour traffic on the 405 has gone from 10 MPH to 240 MPH. But there are still some road slowing down the overall speed. In a similar way, older wireless devices slow down speeds on the wi-fi highway. That is, until Wave 2 in wireless technology arrived. Now this new wireless technology allows older devices to still be slow, but newer devices to operate at racecar speeds. When evaluating your capabilities, consider the amount of time it will take for multiple users to download files as more and more people share your wireless network. Your system design must provide capacity and also coverage to handle multiple wireless users and their various devices simultaneously.

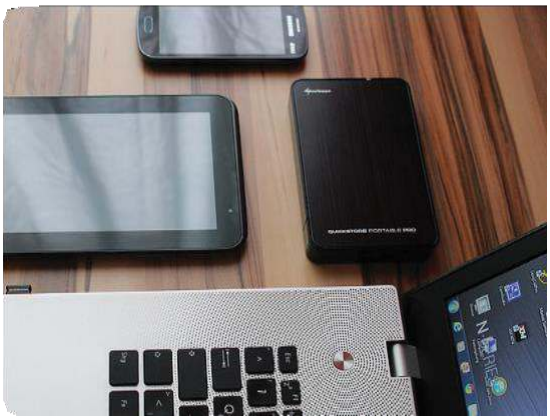
We live in an era where we require access to everything, all the time, from any device, from anywhere.

APPLICATIONS

Your provider must be knowledgeable about how to design your wireless network based on the various applications users need—plus the capacity required. You may have some users viewing training videos, others checking email, some downloading large data files and others participating in video conferences. One of the most challenging applications is simply roaming while utilizing data on a smartphone, as a user moves from area to area. You will need to prioritize and restrict throughput by application to best serve users and manage your resources.

MULTIPLE DEVICES

Look around your conference room and you will see users with an Apple watch, laptop, smartphone and/or tablet—all being used at the same time and all needing reliable, responsive access to your wireless system.



Just a few years ago, access points were designed to handle eight to 10 devices. Today, we see as many as 200 devices per access point. More devices mean increased demand on connectivity, and the shift has dramatically affected access point designs.

Consider what devices your employees use in the

workplace and design your network accordingly.

Don't underestimate the impact of video demand on your wireless network—which relies on high amounts of data being transmitted—as you plan future needs. In the last generation, Disney's innovations in running multiple layers of film at different speeds led to today's compression techniques, which enabled HD TV. Now, we have refined multicasting techniques to stream data so that users can subscribe via devices.

The possibilities are endless for video capabilities—requiring great amounts of resources. The challenge is to define exactly the capabilities and capacity you need and to design your wireless system with the throughput, efficiency, security and flexibility to meet user needs.

BYOD

Many workplaces have implemented Bring Your Own Device (BYOD) policies. This is part of the trend toward a less controlled work environment, with freelancers augmenting the traditional workforce.

A BYOD approach can reduce the need for your IT department to supply and manage desktops and devices—saving time and money. At the same time, BYOD policies require an IT team to handle onboarding all types of personal devices and software, as well as making sure the wireless network can accommodate all the devices. This involves many challenges and risks, especially from potential viruses and hackers. It's crucial to work with a trusted source to plan ahead for a secure environment. Seek the needed expertise.

ACCESS POINTS

When designing a wireless network, IT teams are learning to place access points close to where people are—not in hallways as in yesterday's scenarios. Keep in mind that the further you move away from an access point the slower the speed. As stated earlier, video presents an extra challenge because the number of pixels means there is more data to send, which can affect speed and capacity.

A high concentration of users and activity means you may have to concentrate the wireless signal. Pico cells are small wireless stations that can help improve mobile reception for large pools of users. Controlling access points also helps you manage "air fairness"—making sure each user has a fair amount of access.

Access points today may cover three rooms and 120 people—a huge load. New access points allow you to limit areas you are covering to help manage capacity.

SECURITY

Wireless trends also impact the security requirements for your network. Consider how

you will handle identity management, control applications and restrict access to sensitive information. You should always control security by advanced encryption methods to prevent unauthorized users from stealing bandwidth.

A separate service on the network can control device access. Several manufacturers, including Avaya and Cisco, offer products that enforce security and access for various devices connected to the company's systems. Since security is a vital requirement that involves constant support, vigilance and staff time, make sure to consider this in any network upgrade or expansion.

BACKUP

In this new workplace paradigm, backup protection is the next IT challenge. With contract and salaried workers using various devices, software packages and security systems, how will you protect this valuable IP environment? New cloud applications—and private clouds—offer many options for data storage and file backup. Consider backup security and data management as part of your wireless planning.

NETWORK DESIGN

A major reconstruction of your wireless capabilities will likely require a new network design. Remember that wireless services can place heavy demands on a main switch. For example, in many schools, standardized tests are now taken on the computer, with all students hitting the "start" button at the same time. To increase bandwidth and accommodate users, you will need updated switches, new cabling, and wireless architecture designed to handle your expected capacity.

Wireless done right can help organizations deliver high-quality user experiences for mission critical applications.

You may begin upgrading capabilities one floor or one department at a time, but remember that wireless is three-dimensional. To be truly current, request a full evaluation and design by an experienced wireless provider equipped to meet your specific needs.

Wireless technology is like a fast-moving freeway with lots of twists and turns, so make sure your network is road-worthy. Look at today's wireless trends; consider the needs of your users, and determine the relative IT requirements.

CC&N
Communications·Cabling·Networking

www.cc-n.com

Questions? Interested in more information? Visit our web site or contact our Wireless Team at (262) 506-3199.