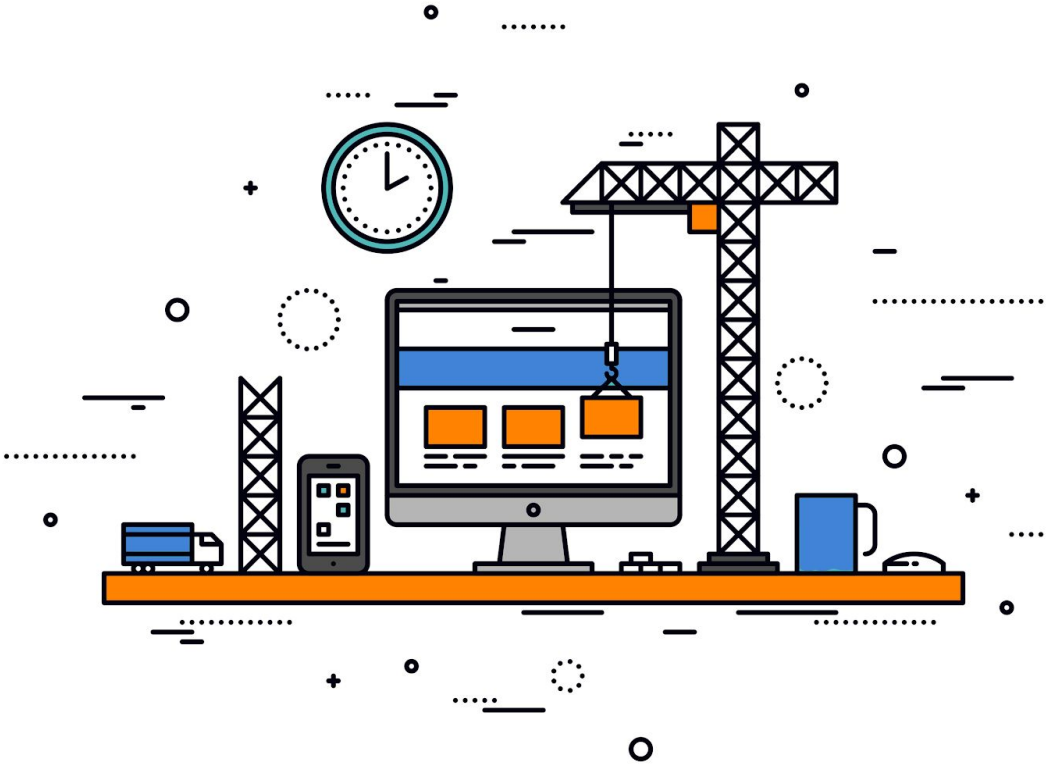
University Wi-Fi Design Guidebook



What's Inside:

Design for Capacity

Schools today are extremely dense and diverse environments; they are living and breathing systems that ebb and flow. In order to support everyone and everything IT leaders need to make sure their wireless platform was designed for capacity.

Many times we see mistakes happen that result in poor performing networks because decisions were made either because of inexperience and/or lack of knowledge.

Capacity means having context which means understanding a lot more than just coverage. Capacity addresses:

- How many devices are accessing the network
- What types of devices are there
- What are the capabilities of those devices
- What types of applications are being used
- How many users are accessing the network
- What locations on your campus are seeing the most activity.

Consider Your Coverage Needs

This is the most obvious and typically most straightforward challenge that colleges and universities have to deal with when designing their wireless networks.

Where do you need to provide wireless access? This can include: academic buildings, dorms, athletic facilities and numerous outdoor spaces.

You have to understand where your mission-critical areas on campus are and plan for them accordingly to ensure you have proper coverage.

Deploying a reliable wireless network takes a lot of skill and experience to get it right the first time and not all designs are created equal. While coverage might seem straightforward there's still a lot involved in terms of getting it right the first time around.

Security is the Foundation

Out of all of these challenges, the one that has most college IT leaders concerned is network security.

With more and more people, devices, and applications accessing the network means more potentially sensitive data that needs to be protected.

With mobile and wireless you need to know where your users are as well as who they are and what they are doing.

This means at a bare minimum having role-based access control, and the right firewall in place.

However, to there's more to proper security than just these two components, check out this recent blog post to learn more.

Density Informs Design

Colleges and universities have to be able to support many different, highly dense areas, containing hundreds or even thousands of users who are all simultaneously connecting to the network.

These areas can include lecture halls, auditoriums, stadiums or any large areas that dense populations of students, faculty or guests are accessing your campus wifi network.

While this is a challenge of in itself, it's been getting exponentially harder to do with the continued expansion and growth of mobile devices and applications.

Teachers are using more technology in the classroom than ever before that need wireless access to stream data, voice and video.

Making matters more complicated are students, on average each student owns between 3-5 devices and growing.

Again, your success will come down to the quality of your WLAN design and which wireless service provider you choose to partner with.

What's Your Bottom Line?

When was the last time you refreshed your wireless network? If you answer is more than 4 years ago, you're way overdue for an update.

The effective lifespan of today's wireless platforms is between 3 and 4 years, that's it. This is due to the pace at which devices, applications, security threats, and even our physical environments are evolving.

Beyond the 3-4 year range and it becomes challenging to maintain needed wifi performance levels and the required reliability you and your end-users have become accustomed to.

This is the reality and so is the cost associated with upgrading your wireless network. It's not cheap and figuring out how to afford everything isn't an easy task to accomplish.

Knowing what you need from an IT perspective is one thing, getting a budget approved to actually pay for it is another.

Think about your school's Wi-Fi platform as a utility, like water or electricity. It's not a luxury to have, it's a mission-critical "utility" that enables the modern day learning and recreational environments.

Be Sure to Monitor Performance

Your campus Wi-Fi network is a dynamic, living system. You can't just set-it and forget it, that will only lead to more wifi problems.

To properly maintain your network and keep it operating as it was designed to do, you have to be proactive.

Your campus Wi-Fi network should incorporate the use of real-time visibility, analytics and a network management system or NMS.

This means monitoring in real-time things like:

- RF Visualization (wifi heat mapping)
- Client Status
- System Status
- Usage Analytics
- Device locations

If you can't see what's going on, there's no reliable way to know how both your wireless platform and the end-users, devices and applications it's supporting are performing.

We can say it until the cows come home, technology is only going to get better, faster, and more diverse.

Your campus's WLAN design and entire wireless platform need to be able to adapt to new devices, applications, prevent security threats, and perform critical system updates to ensure reliability, performance and security throughout your entire campus.

The most important thing you can do to create a successful, campus-wide network is to start with proper planning. By establishing clearly defined goals and working with the right wireless service provider, you can guarantee your campus Wi-Fi network will support today's challenges as well as be ready to take on whatever lies ahead.

Want to know how your campus' WiFi stacks up? Use the attached checklist to assess your current environment and identify your wireless needs.

Need some expert help? Give us a call! One of our wireless specialists can work with you to develop a wifi solution.

Wireless Network Design Worksheet

Project or challenge
Biggest Need – specific requirements:
Timeframe:
Floor Plans:
Installation:

Coverage Area Environment

Square footage:

Building Materials: (circle all that apply)

- Interior (cinder block, drywall/stud, poured concrete)
- Exterior (concrete, metal, brick)

Type of Ceiling:

- Drop tile, hard (drywall/concrete), open
- Ceiling heights

Number of floors:

- Floor count per building
- Type of floor construction (wood joist, poured concrete/pan)

Average Number of daily users (including staff and guests):

Existing Wireless Network
Platform/Age:
Number of AP's:
Switches to support the Aps – PoE+?
Current firewall solution:

Schedule a Call