

**HOW TO PLAN FOR A
WIRELESS ASSESSMENT:
A GUIDE FOR LEADERS AT ALL LEVELS**



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CONTENTS

6 **New to the Wireless Survey Process?**

8 **How Do I Start?**

10 **Not Your Average In-Home Wi-Fi**

12 **Adequately Preparing for
Your Survey**

14 **Types of Wireless Surveys**

16 **What to Expect
from Your Wireless Survey**

18 **Final Thoughts**

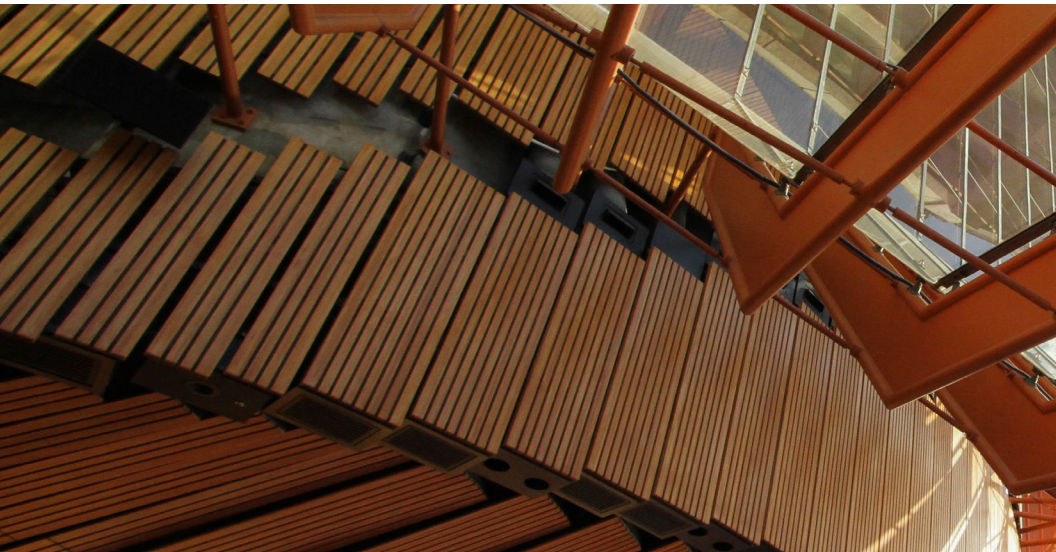


NEW TO THE WIRELESS SURVEY PROCESS?

When you hear the phrase “wireless assessment,” a few thoughts immediately spring to mind: daunting, time consuming, labor intensive, and—worst of all—potential for mistakes.

You probably have a good idea of which areas you had troubles with in the past when it comes to your wireless projects. Whether the issues have been dead areas, drops, slowdowns or even complete disconnects, you have collected the helpdesk tickets, and you probably have repeat offenders on the list of “must fix.”

So, let’s break this down one step at a time to determine which type of wireless survey is required and what you can expect overall.



Whether this is your company's first deployment or fifth, you are going to have to choose a vendor, and there are many to choose from. Determining the appropriate vendor means evaluating which is right for you, which satisfies all your requirements, and—most importantly—how much of a learning curve your staff will face. Decisions like these are not easy, but with the help of experienced wireless architects, these points are easily addressed, and a solid wireless solution will follow.



HOW DO I START?

First, determine the required services that will need to be supported across the wireless network. Do you want to carry data traffic only? Or do you also need to carry VoIP? Possibly even video? These are very important points to consider. The creation of the infrastructure design will be critical based upon these answers.

Ask yourself: will wireless be vital in our environment? To what extent? Can the company handle an outage of 30 minutes, or an hour, or a whole day? These are all critical factors needed for the network design. And just from my own personal experience of architecting wireless designs and performing installations for more than a decade, I can tell you that most networks start out as “a nice to have for employees.” Within weeks, this becomes “required for our employees.” So determine if this is the case beforehand, as it’s much easier to architect fault tolerance in the beginning.

Next, ask yourself: Do we have the skillsets available on staff that can handle this type of workforce mobilization? We’re 10+ years into the wireless occupation of the workforce, and most people have at least some experience with the management and installation of access points and wireless solutions. But wireless, like any other technology, is leaping forward at a tremendous rate. Does your staff

have the time to investigate all the different options available? If you have that talent, then yes, you can attempt this effort on your own. There are free products out there for doing surveys and planning.

But, as the adage goes, you get what you pay for. And in the wireless field, software for these types of projects are not cheap. You will need to carefully evaluate this expense.

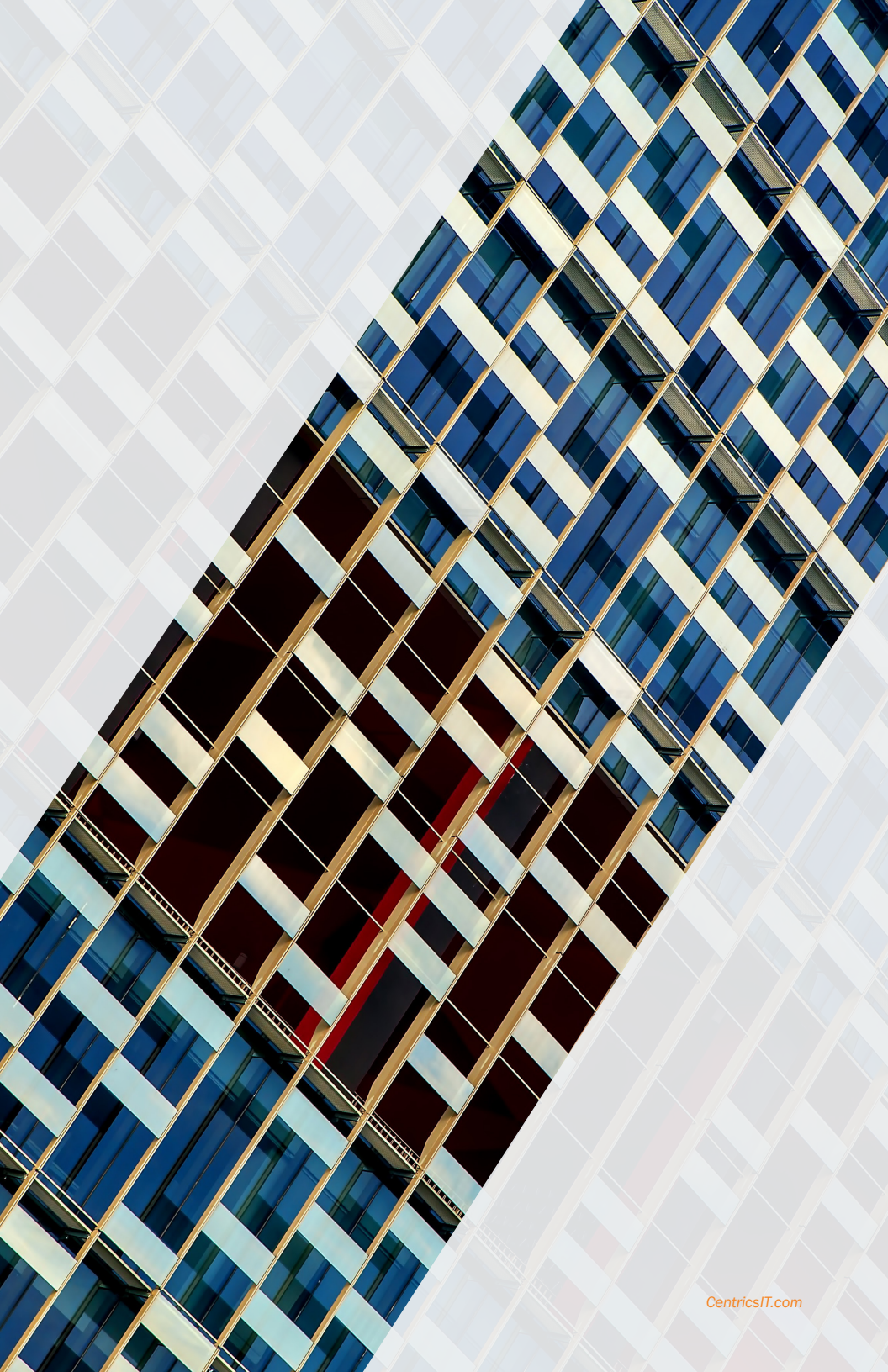
Making this purchase is a decision based on your confidence in the longevity of your technology investment and the budget you have available. Hiring an expert consultant whose job it is to tackle these issues will come into balance at the end of the equation, as this resource will likely save you money in the long run and will certainly save you valuable time.

NOT YOUR AVERAGE IN-HOME WI-FI

Conducting a large-scale wireless assessment is completely different than setting up your home Wi-Fi. Yet some IT Managers assume it's just as easy as setting up an in-home solution.

Here are a few common challenges specifically related to large-scale deployments:

- Deciding between an autonomous or controller based solution
- Avoiding “shoot from the hip” access point placement
- Transitioning between access points
- Setting up security protocols
- Implementing a certificate-based, pre-shared key, 802.1x
- Setting up VLAN Control and “Change of Authority”
- Creating dynamic access control lists
- Formalizing authentication and authorization processes
- Setting up guest access
- Avoiding or addressing failed authentication procedures
- Considering posturing/profiling
- SSID deployment
- Centralized management
- Channel and power management
- Choosing between PoE or Power Injector
- Evaluating infrastructure requirements



ADEQUATELY PREPARING FOR YOUR SURVEY

Whether you have chosen to go with a consultant or with a staff deployed solution, there are a few things the technician will need to plan for a productive and accurate wireless survey.

PROVIDE FLOOR PLANS FOR EACH DESIRED AREA

These can be difficult to come by in some situations. At least attempt to use fire escape drawings, typically located near exits. This sometimes a crude drawing, but an engineer can usually pull enough information to make a go of it.

Be sure to designate on the floorplans, areas that do not require service, such as restrooms or closets. This will help tremendously in the design as well as the overall cost of unneeded access points.

PROVIDE PHYSICAL ACCESS TO EACH OFFICE, CLOSET, CONFERENCE ROOM AND EXECUTIVE OFFICE THAT REQUIRES COVERAGE

Far too many times, I have arrived onsite only to have partial access to the space. This degrades a technician's ability to accurately get a picture of the space and architect a perfect design for you. This will lead to a "best guess" effort and can result in unsatisfactory wireless performance in these areas. I find it best when doing onsite visits with clients to have an employee from the IT Department available to walk around with me and provide access to locked areas, as well

as provide a presence to other employees that may question a lone person walking through their building unattended (and acting very serious while staring at a laptop).

IF UTILIZING A CONTRACTOR, PROVIDE AS MUCH INFORMATION AS POSSIBLE

If that means sending a second “marked up” floor plan, then do so. Provide details like:

- This floor has no drop ceiling and has exposed pipes and conduits
- This floor has very large doors leading into our main conference room
- The walls between offices are concrete, with heavy glass and a standard door

An architect takes these pieces of information into account when architecting a wireless network, and he or she will validate these points during the survey and add additional details.

If scanning existing wireless SSID's, provide credentials for the network so the engineer can establish connection to these SSID's and get valid readings.

TYPES OF WIRELESS SURVEYS



ACCESS POINT ON A STICK

This has been the tried-and-true way of measuring the signal strength onsite and potential placement of access points in each location. I generally agree with this approach, but instead of starting with the AP on a stick, I prefer to gather floor plans and building layouts to get a general idea of the environment. I then create a predictive survey based on the information gathered and produce AP placement guidelines. These will provide some basic ideas of where the APs should be placed.



PREDICTIVE SURVEY

This can be done as a sight-unseen approach. With gathered information from the client, a detailed picture of the space can be mimicked inside of the chosen vendor's planning tools, and a fairly accurate placement map can be generated. But, as mentioned above, I typically create a predictive survey, then go onsite with the AP on a stick to do validation testing. I then do a comparison of what I expected to see from the predictive vs. what I actually gathered from the onsite survey. At this point, tweaks can be made to AP counts and placements.



PASSIVE SURVEY

This is one of the more common types of surveys performed. This is where you simply want to see the RF footprint of any and all devices that are broadcasting available signals in your space—doesn't matter if it's a tenant above or below, or the pizza shop across the street. You will see these devices, and the reports can help you visualize what could and currently is being affected by the surrounding environment.



ACTIVE SURVEY

This type of survey is conducted to get a complete coverage picture of your existing environment. The technician will attach to one of your corporate-owned SSIDs and proceed with the site survey to create a path document with information regarding not only signal strength, but channel interference, signal-to-noise, visible number of access points carrying your SSID, hand off delay between access points, channel utilization, speed, coverage area holes, and a basic overall health of your wireless environment.

WHAT TO EXPECT FROM YOUR WIRELESS SURVEY

A productive wireless survey will uncover areas where your coverage, speed, security and other settings can be improved to increase the quality of your wireless connectivity. Regardless of how well your previous wireless surveys and deployments were conducted, the rapid rate at which this technology is advancing means that there is always room for improvement.

Some examples of potential improvements can be:

BANDWIDTH INCREASE REQUIRED

From Access Level, to Distribution, to Core, or all three—this may require upgrading existing switch infrastructures or increasing the number of uplinks between the switches to aggregate the bandwidth and provide the projected increase in traffic.

INTERNET BANDWIDTH INCREASE REQUIRED

The load from adding an average of 2-3 additional devices per person can quickly consume your once robust Internet connection.

WAN BANDWIDTH REQUIRED

Depending on the design of your WAN infrastructure and the paths your remote sites use to obtain access to the Internet or to corporate assets, an increase in users can bog down these connections.



FINAL THOUGHTS

Don't become overwhelmed by the process. Define your Service Level Agreement needs prior to making final decisions on which vendor you should go with. If you are interested in an independent vendor assessment, a consultant can help. Make sure that the product fits your needs and that your staff is comfortable with supporting the solution.

Most importantly—regardless if this is your first installation, a simple augmentation, or a complete rip-and-replace—always have a post survey performed to validate all the man hours, effort and money that you have spent on this solution. It's a common mistake to assume that, based on all that was done to prepare for the solution, that it will fit and work perfectly from the beginning. The post survey can give you a baseline of what your new network looks like, and this can not only help you sleep at night, but it can also give you a baseline for judging where your solution stands months down the line.



ABOUT CENTRICSIT

When you're looking for help conducting a wireless assessment, architecting a network design, evaluating wireless vendors, or installing and deploying your solution, the expert consultants at CentricsIT are here to help.

CentricsIT helps companies around the world make smarter decisions about their IT spending. We are a global IT lifecycle solutions company that provides strategic, cost-saving alternatives for hardware procurement, maintenance services, professional services, and certified asset disposition. Recognized by Gartner as a leading solutions provider for cost optimization, we help clients around the world improve efficiency and reduce wasteful IT spending by strategically redistributing IT budgets and consolidating data center vendors.





ARE YOU PREPARED FOR YOUR NEXT WIRELESS PROJECT?

Our expertise spans the entire IT lifecycle, and our commitment to innovation and efficiency is what sets us apart, because at CentricsIT, we see IT differently.

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