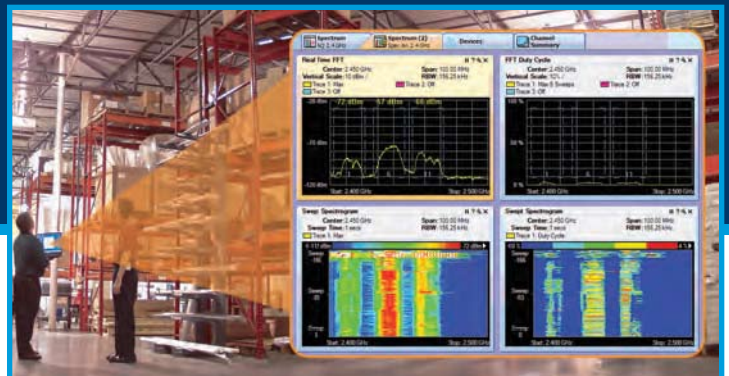


## GETTING YOUR WIRELESS NETWORK INFRASTRUCTURE RIGHT, THE FIRST TIME





# GETTING YOUR WIRELESS NETWORK INFRASTRUCTURE RIGHT, THE FIRST TIME

**Like most things in life, when deploying an enterprise mobility strategy, it pays to make your best move first. And that critical first step has to do with your wireless network.**

In the course of providing hundreds of wireless implementations over the past decade, we've seen many healthcare and commercial organizations that have a solid strategy in place – and others where we've been called in to rectify some of the most challenging network scenarios. In this executive brief, we want to call attention to a few of the commonly over looked keys to configuring a successful wireless infrastructure, in order to provide you with a better understanding of the elements necessary to perform an installation that will flex to meet the needs of your growing business.

## **Your Environment is Alive**

Whether in the healthcare or commercial environment, wireless success starts with understanding one simple fact—your environment is alive. No matter what your business, and no matter its size, your workspace possesses dynamic physical properties that can directly affect your wireless coverage. For example, in the warehouse atmosphere, stacks of products shrink and grow. Pallet racks fill and empty, and fill again according to the demands of the market. To keep up with this workflow, warehouse personnel need to be fast on their feet, and understand how to quickly reorganize the space according to the ever-changing needs of your customers. The same is true of your wireless network. It has to adapt to the changing topography of your building, and the materials stored within. This is important because wireless networks transmit data via radio frequency (RF) waves, and they are sensitive to obstructions that can block radio signals.

## Inventory Affects Wireless Coverage

The intensity of this phenomenon varies with the contents of the goods stored inside the facility. It is easier to imagine as “radio opacity” and “radio transparency.” Metals are very dense, and are “radio opaque,” meaning they stop wireless signals, and reflect them back to their source. This can mean a slow connection or no connection at all. Materials such as paper, wood, glass, water, and ceramics are “radio transparent,” meaning radio waves have an easier time passing through them on the way to and from the mobile devices in your workplace.

But only a perfect vacuum is truly “radio transparent.” Any material will have some ability to stop and reflect radio waves. What’s important to the warehouse manager is that this effect increases in all materials when they are densely stacked, such as on pallet racks.

To compensate for signal loss due to environmental constraints, your wireless network must be engineered to function no matter how your building is being utilized. After studying your space, wireless engineers from an enterprise mobility expert such as InfoLogix can develop an access point topology that will work most efficiently with your situation.



Only after a detailed spectrum analysis, an active site survey, and careful consideration of your business goals can you be truly ready to move forward with a wireless network. And if you follow this plan, you will have a system that will work for your current needs, and your needs well into the future.

## Steps to Deploy an Effective Wireless Network

### Environmental Survey

- Detect background RF that may slow or even stop your network traffic
- Analyze space usage patterns and structural materials that can block wireless signals

### Plan Access Point Topography

- Develop a map to place access points throughout your workplace so that they work most efficiently, with no signal overlap

### Installation and Testing

- Roll out wireless access points at strategic locations to maximize signal intensity, and perform a real-world test to ensure complete coverage

## Hospitals and People-Centric Businesses

Hospitals are quite different than warehouses, but their active environments are subject to the same wireless principles.

In hospitals, bodies are always in motion. Patients, visitors, and hospital staff members comprise a constantly mobile population of RF deflectors, each primarily made of water. The physical makeup of the human body directly affects the way wireless signals travel through hospitals. And that's to say nothing of the Bluetooth devices, cordless phones, microwave ovens, and wireless video cameras competing for wireless frequencies.

We've seen situations where overworked IT staff will simply add new access points where coverage is weak. In a hospital, this approach could best be described as a Band-Aid. As well-intended as this "more is more" logic may be, it discounts the everyday truths of hospital environments, and of wireless efficiency. The more devices you add, the more wireless interference you create.

## Plan Well into the Future

In addition to regular Internet traffic, there are several emerging mobility technologies that promise to revolutionize the healthcare environment. Among them is Voice over WiFi (VoWiFi), which allows voice calls over the IP network. Another is Real-Time Location Services (RTLS) that help staff track equipment throughout the hospital campus.

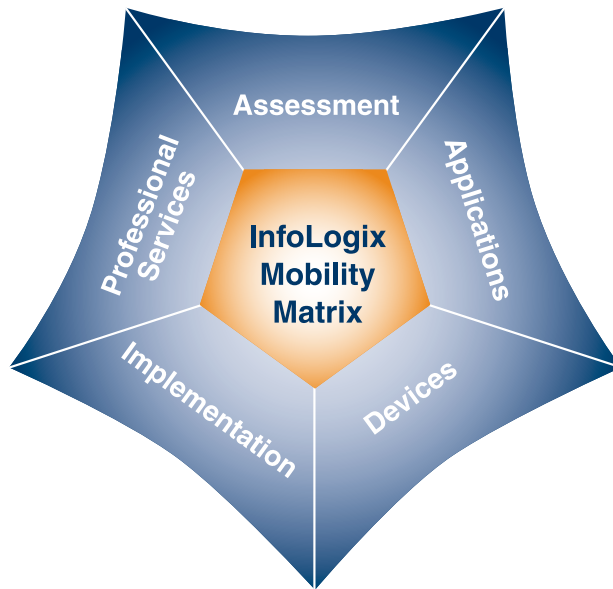
While these emerging technologies promise to have a great impact on employee productivity and workflow, they promise increased demand and careful planning, not just for today's needs, but for the emerging technologies that will become common place in the future.

For example, VoWiFi requires a well engineered network with careful attention to interfering sources. If implemented improperly, these networks can often create interference between their own access points. Similarly, RTLS designs often recommend dense access point networks, which create disastrous radio frequency overlaps. With this approach, not only are you paying more for a greater number of access points, but you're getting less than optimal performance.

To make each one of these systems work together, careful attention must be paid to technology, future goals, background interference, and employee needs. It is recommended that you perform a detailed site survey before spending money on a wireless solution. After all, installing more and more access points is not an effective solution. Only a scientifically mapped out wireless network can remain viable as the environment changes or grows.

## The Key to Starting a Strong Wireless Network

No matter where your wireless network is to be installed, it's critical to start with a solid plan. The most efficient, cost-effective wireless networks are those that are designed using measurable scientific data. Before you purchase equipment, it pays to have a site survey performed by a company such as InfoLogix. Once you have a strong understanding of the way your environment will affect your wireless network performance, it will be easier to make better decisions for purchasing and installing equipment. And with a solid foundation, you will have the flexibility to adopt new mobility technologies as they enter the marketplace, providing your business with a competitive advantage that only smart, strategic analysis can provide.



**Before installing a network,  
it's important to consider  
these five critical areas.**

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## Managing Editor

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## Learn More

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## About InfoLogix, Inc.

InfoLogix is a leading provider of enterprise mobility and advanced wireless asset tracking solutions for the healthcare and commercial industries. InfoLogix uses the industry's most advanced technologies to increase the efficiency, accuracy, and transparency of complex business and clinical processes.

With 19 issued patents, InfoLogix provides mobile managed solutions, on-demand software applications, mobile infrastructure products, and strategic consulting services to over 2,000 clients in North America including Kraft Foods, Merck and Company, General Electric, Kaiser Permanente, MultiCare Health System and Stanford School of Medicine. InfoLogix is a publicly-traded company (NASDAQ: IFLG).

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