



Problem. Solved.

Delivering Wi-Fi in Challenging Public Spaces

COMMSCOPE®

Delivering Wi-Fi in Challenging Public Spaces

Problem. Solved.

In today's connected world, people have come to rely on a continuous, virtually uninterrupted Internet experience, not just at work or at home. This also applies to public places such as shopping malls, airports, train stations, and outdoor parks. Here, people are not only using the Internet for personal enjoyment, but to get real work done. This makes gaps in Wi-Fi service unacceptable especially in busy metropolitan areas. To give today's consumers the connectivity they need to work and play in an online world, forward thinking municipalities, venue owners and service providers have begun to deploy Wi-Fi in popular public places.

Benefits for Service Providers, Municipalities and Property Owners

- High-quality connectivity
- 30% construction cost savings
- Preserved building aesthetics

The Problem:

Public Spaces Pose Wi-Fi Deployment and Performance Challenges

Deploying a Wi-Fi network in an enclosed environment has its own unique dynamics, but open-air public venues bring with them a series of additional challenges that can impact performance and make deployment difficult. While exterior building walls, lampposts, structural beams and other locations are viable mounting points for infrastructure, they are rarely located in the correct place needed to create a continuous, high-quality Wi-Fi experience. Even when they are available, mounting points are often owned by third parties or difficult to reach with cabling for power and backhaul.

Additionally, spectral interference from private networks, personal hotspots or even microwave ovens is pervasive in most public spaces. So, too are physical obstructions such as thick concrete walls, trees, and fountains. Together, interference and obstructions can severely degrade Wi-Fi performance and create coverage gaps in Wi-Fi networks. Therefore these impediments must be factored in well before access points are deployed.

Finally, many public places are intended to be visually appealing - and stay that way through Wi-Fi deployment. Therefore, the aesthetics and architectural theme of the venue must be taken into consideration when deploying access points and connecting them to power and network resources. Preserving the look of a public space - in addition to locating access points, running cabling and mitigating the effects of interference and obstructions can add significant time and expense to Wi-Fi deployment. Without the proper expertise, these dynamics can threaten the business case for service providers and property owners alike.

CommScope Solution:

A Customized Approach to Public Wi-Fi Deployment

There is no formula for constructing a public Wi-Fi network: every space has unique characteristics that must be considered, service levels that must be met, and budgetary guidelines that must be followed.

To ensure that every public Wi-Fi network meets its desired objectives, CommScope leverages its vast experience in deploying networks of all kinds, beginning with a thorough and detailed planning process. Here, CommScope works with property owners and service providers to identify service goals and business objectives, then conducts a detailed audit to gather and analyze critical information about the public space, such as traffic patterns of users, the spots where people congregate most, and the peak times of the day and days of the week when service requirements are at their highest.

In addition, CommScope studies the physical and spectral dynamics of the location. Engineers assess the mounting options for access points, noting where property rights may need to be negotiated, or where special attention may need to be paid to aesthetics. They also document the nearest sources for backhaul and powering, mapping cable routes that minimize intrusiveness and installation labor. Engineers note obstructions that may degrade service in high-use areas, then analyze the 2.4 and 5 GHz spectrum in the service area, logging channel utilization and frequency dynamics in critical locations.

All of this information factors into a comprehensive Wi-Fi network design, which is optimized to meet performance requirements while preserving existing aesthetics. To build the network, CommScope leverages advanced techniques for locating access points and bringing power and network cabling to them in the most efficient way possible. These include standard Ethernet connections, as well as service provider-owned options that are unique to outdoor spaces, such as coaxial cable lines, twisted pair telephone lines and even fiber runs. Using the full range of power and backhaul options, CommScope can help its customers reduce construction costs by approximately 30% when compared to a reliance on Ethernet alone.

Where aesthetics are important, CommScope provides a range of options to blend access points into the space seamlessly. These include low-density foam concealment panels that allow Wi-Fi signal penetration while hiding the access point from sight. Additional techniques include pole mounting solutions and custom painted infrastructure that blends into the existing environment. That the access point can be upgraded to meet future requirements. By consulting the building diagrams, heat maps and spectrum audit throughout this process, CommScope can all but eliminate

performance and coverage issues of the existing Wi-Fi service while avoiding the high costs of overbuilding the new network.



Figure 1 – Customized Solutions to Preserve Building Aesthetics

With the Wi-Fi network deployed, CommScope then tests its performance and coverage using sophisticated heat mapping techniques that measure the Wi-Fi signal throughout the public space. As a result of this process, any coverage gaps or areas of poor performance can be diagnosed and resolved to ensure that the service goals identified at the outset of the project are being met upon its completion.

The Result:

High Quality, Cost-Effective Wi-Fi in Public Spaces

CommScope uses advanced tools and techniques to ensure that Wi-Fi service meets user performance expectations, while adhering to customers' budget requirements. This detailed process goes beyond selecting the right access point to understanding the critical deployment factors that can make or break the Wi-Fi business case. From choosing access point locations that minimize the impacts of construction to understanding frequency dynamics, the CommScope approach to Wi-Fi deployment ensures a quality experience, while keeping deployment costs low and preserving the aesthetics of the space. The result is a public Wi-Fi network that makes visitors want to stay a little longer.

CommScope pushes the boundaries of communications technology with game-changing ideas and groundbreaking discoveries that spark profound human achievement. We collaborate with our customers and partners to design, create and build the world's most advanced networks. It's our passion and commitment to identify the next opportunity and realize a better tomorrow. Discover more at commscope.com.

COMMSCOPE®

commscope.com

Visit our website or contact your local CommScope representative for more information.

© 2019 CommScope, Inc. All rights reserved.

Unless otherwise noted, all trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope, Inc. This document is for planning purposes only and is not intended to modify or supplement any specifications or warranties relating to CommScope products or services. CommScope is committed to the highest standards of business integrity and environmental sustainability with a number of CommScope's facilities across the globe certified in accordance with international standards, including ISO 9001, TL 9000, and ISO 14001. Further information regarding CommScope's commitment can be found at www.commscope.com/About-Us/Corporate-Responsibility-and-Sustainability.

CO-113914-EN (10/19)