Virtual CAT5™ meets Wiring Challenges in Municipal WiFi Deployments

Nashua, New Hampshire, USA

THE CHALLENGE

Connecting a 20 antenna mesh network in a 1.2 mile historic commercial downtown without damaging, costly, or unsightly wiring runs nor deployment delays.

On July 16th, 2008, community and business leaders gathered in front of Nashua City Hall to inaugurate the launch of a new era in the 172 year history of Nashua, New Hampshire - *Wireless Nashua* - a free downtown wireless Internet service that enables people to surf the Web, access their e-mail and conduct business online high speed and free-of-charge.

This service is championed by the Greater Nashua Chamber of Commerce with the collaboration of the City, the downtown revitalization organization and several enthusiastic partners in a private-public partnership. "People will be able to use the service as often as they wish, as long as they wish," said Chris Williams, the President of the Greater Nashua Chamber of Commerce.

"Our project is purely an amenity, or a bonus feature that simply improves the way we live and operate within our community, and allows us to better market ourselves to those tech professionals and young professions who are so critical to our work force sustainability", said Williams.

THE SOLUTION

Electric Connect® solution is designed to enable high speed Ethernet packets to traverse over many different transmission mediums: in-premise electrical wiring, extended distance for twisted pair wires and long distance coaxial cables. This 'VersatileWiring™' capability allows vast opportunities for solving many physical networking infrastructure connectivity deployment related problems cost effectively and can span multiple market segments and applications.

Background

On February 2007, the Chamber first promoted its plan to establish a free wireless signal that would encompass a 1.2 mile stretch of downtown network along Main Street from Library Hill to Southern New Hampshire Medical Center with some coverage onto side streets.

This was a bold plan since no other Northern New England cities have taken no-cost WiFi technology to such a wide Municipality audience.

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Scope of Project

The free Nashua WiFi district, called the *Wireless Nashua* downtown amenity network, runs from Southern New Hampshire Medical Center north to Library Hill, and some blocks on the side of Main Street. The network is to stretch from Southern New Hampshire Medical Center and then going up Main Street – the largest free WiFi network deployment in Northern New England.
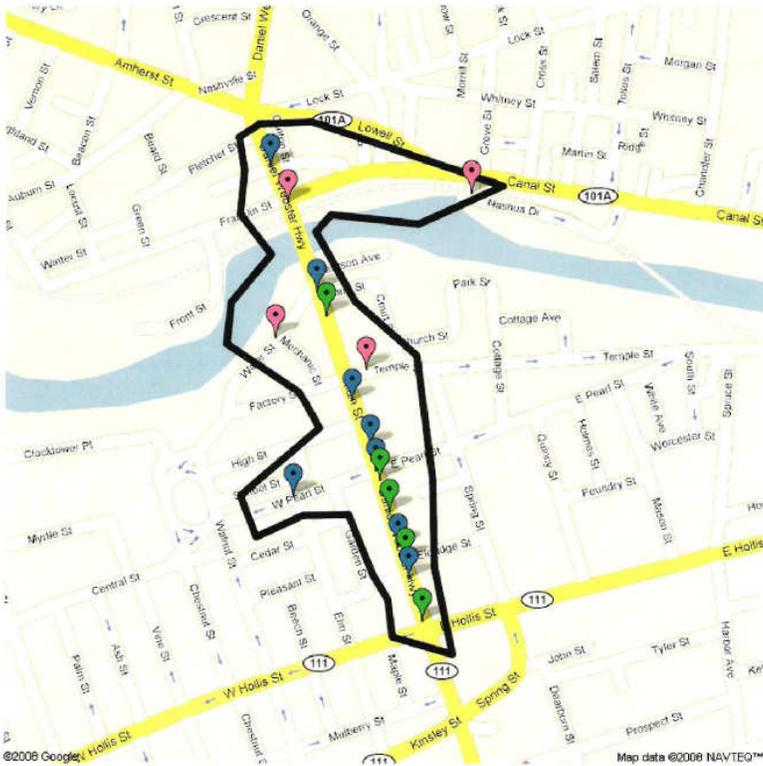
Downtown Wifi Map

A 'meshed' network of 20 antennas 'talk' to each other in a 'meshed' way to allow a constant signal to be fed in the central downtown district (see above).

Project Partners — A Winning Combination

Aboundi
— VersatileWiring™ Infrastructure

Active Edge
— Marketing and Web Design

City of Nashua
— Funding and Support

FairPoint
— Internet Service Provider

Hampshire First Bank
— Sponsorship

Meraki + Anaptyx
— Access Points

Nashua Chamber of Commerce
— Vision and Leadership

NH Division of Economic Development
— Grant Funding

The Greater Nashua Chamber of Commerce adopted a sponsorship model for its downtown mesh WiFi project which removed decision-making and financial dependence on the city or third-party providers.

"We represent the private sector," Williams said. "We weren't even going to explore that option (of a city-owned network)".

It sounded fool proof – the funding mechanism, mostly private donations, was solid. The technology had been selected, Free WiFi access would draw people downtown, and unlimited network access would keep them there.

Deployment Challenges—Wiring the Access Points

Like so many innovative efforts, the downtown Nashua WiFi project proved to encompass hidden complexity and challenges not envisioned. Exceptional levels of creative problem solving was called for as the project progressed.

The initial WiFi technology considered for the project was to place 10 antennas on building roofs through out the area for a calculated coverage requirements. However, "many downtown tenants rejected the idea," recalled John Barker, Director of Information Technology of the City of Nashua. After extensive site survey and resources were already committed, "We had the funding from local business and had hoped to have the network up and running by the end of September, 2007, but our downfall was the belief that it would be easy to get access points up on rooftops," said Barker. "In some instances, we had trouble finding out who owned the buildings, and then some owners wouldn't let us penetrate or attach to the roof for electrical connections."

This objection against the rooftop access-point installation forced the team to examine alternative on-pole installations which put the project on hold for approximately six months. As a result of the rooftop antenna dilemma, Nashua has postponed its downtown WiFi project until May 2008.

Decisive Vision through Innovation

The Greater Nashua Chamber of Commerce remained solidly committed to the launching of the free WiFi service. "We believed that our Yankee "can-do attitude" and our willingness to creatively overcome obstacles is the type of mentality that makes Nashua "the best city to live in" twice over the past 20 years," said Williams.

A decision was made to deploy WiFi antennas in store fronts at street level.

"We found ourselves in the third sub-basements of these old buildings looking at extensive wiring jobs. We realized we did not have the funds for this and had to think of another way," recalled **John Barker, Director of Information Technology of the City of Nashua.** "That was when Aboundi, a Nashua based company, stepped forward with a solution." They offered affordable, enterprise-quality equipment that took care of the expensive, long wiring issues. Installation went from days to hours.

"It was truly plug-and-play", said Barker.

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However, that wasn't the end of the challenges.

Although the antenna location issue was resolved, when it came to actual deployment, wiring CAT5 between the DSL modems to the access points proved difficult both in terms of cost and labor time.

A Proven Partnership and Product from Aboundi

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Conclusion

Now, you can eat, drink, bank, have business meetings, socialize, network, visit art galleries …. All at "Wireless Nashua" in Downtown Nashua, New Hampshire!

The success of this municipal project has earned Aboundi the gratitude of the City of Nashua and Aboundi is looking forward to future partnership opportunities.

Why Electric Connect®
Cost Saving & Time Saving & Easy

- No New Cable™!

- Turns electrical outlets, phone jacks, existing CATV F-type out lets and expired CCTV cables into high bandwidth local area networking infrastructure.

- Easy to extend the Ethernet connection beyond 100 meters.

- Easy to deploy - No need to drill holes and no business activity down time.

- Flexibility - Provides easy removal and reinstall which preserves capital investment.

- No need to obtain Low Voltage cable installation permit.

- Eliminate oversight installation which may result in violation of Plenum cabling code requirements.

- Easy to use embedded diagnostic tool - Capable of providing Certificate of Performance for project acceptance.

- Easy to maintain - When the network breaks it is easy to find and identify the problem.

Lower the Total Cost of Deployment !

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Aboundi, Inc. is the leading company providing POS/Retail/Hospitality, Small to Medium-sized Businesses (SMB), Municipals and Enterprises with commercially advanced and yet cost effective networking deployment solution encompassing the existing/legacy copper wiring as their networking infrastructure. Our combined solution of 'Electric Connect®' together with 'WebEyeAlert®', an enterprise class open IP based remote video surveillance monitoring and management software platform solution provides very effective and yet powerful value propositions for productive business operations.