



## NYSIA's Technology Challenge: Deploying Pervasive Wireless LAN

The New York Software Industry Alliance (NYSIA) is the leading trade association for software, information technology, and Web development companies in the New York metropolitan area. NYSIA is located at the heart of the Financial District, in a 30-story, 400,000 square foot office tower across the street from the New York Stock Exchange. The building at 55 Broad Street is renowned as the original home of New York's technology community, and has won accolades as one of the most high-tech facilities in the City.



NYSIA's mission is to promote and support the growth of the software industry in the region by furnishing state-of-the-art technology, facilities, and IT services to emerging software companies. The NYSIA Incubator, which offers headquarters space to many such companies, provides its tenants over 22,000 square feet of professional, state-of-the-art office space, featuring high-speed connectivity, a full range of IT services and a voice over IP (VoIP) telephone system.

### Meeting the Service Challenge in a High-Demand Environment

NYSIA's IT Department has an especially challenging mandate: to provide voice and data services to 12 separate companies sharing the same space, each with varying service requirements in terms of bandwidth, performance, size, and security. Since this is an incubator facility, tenant companies can grow rapidly, relocating within the facility to accommodate the addition of new personnel. This necessitates a continuous series of office expansions across the two floors administered by the Incubator.

To compound the challenge, many of the Incubator tenants' staff members are often away from their desks, and require their services to work no matter where they are.

The rapid growth of tenant companies has resulted in widely dispersed configurations with offices located in physically separated sections of the facility. The Incubator also provides shared conference room space for use by tenants and their outside visitors. All this equates to a highly mobile user base, as personnel shift between desks, offices, and conference rooms to collaborate on information-intensive projects.

### Above and Beyond the Wired Network

To meet this ever-growing demand, NYSIA had until recently provided only wired Internet. But managing changes and reconfigurations for a

shifting tenant community proved to be time-consuming, costly, and ultimately not scalable. NYSIA looked for alternatives, and wireless LAN (WLAN) technology was the obvious solution. WLAN, however, may create challenges of its own, and NYSIA recognized that selection of the right technology would be key to establishing a pervasive WLAN environment. The objective was to provide the highest possible dependability and performance, given the tech-savvy demands of the user community. Other technical challenges included the need to ensure complete coverage in an environment with many potential sources of interference, and the need to provide the highest possible communications data rate in spite of a mix of 802.11g and the slower 802.11b wireless clients.

### The Wider Possibilities

Initially, NYSIA IT staff conceived of performing a limited deployment, one that would just ensure "guest" wireless access in the public conference areas. But a demonstration of Extricom WLAN technology permitted them to envision much larger possibilities: a deployment that would not only provide reliable and high-bandwidth wireless data service to all users, but also enable Voice over WLAN (VoWLAN) services for both tenants and Incubator administrators. And it would do all this with significantly lower total cost of ownership (TCO) than previously experienced with other approaches.



Extricom's wireless LAN is a technology that I have not seen offered by any other vendor. This unique concept has allowed us to deploy an enterprise-level WLAN in a very short period of time.

Bruce Bernstein  
President  
NYSIA

### Project Scope

Deploy a WLAN system to meet the expanding access needs of multi-tenant headquarters environment, while ensuring that robust coverage, performance, mobility, and security are delivered to all tenants.

### Solution

- Extricom WLAN System, consisting of EXSW-800 WLAN switches and EXRP-20 UltraThin Access Points.
- Multiple applications and device types supported on same infrastructure, with performance and quality of service optimized through channel blanket topology.

### Results

- WLAN quickly deployed in multi-floor facility, providing flexible infrastructure to meet user needs for optimized data rates and seamless mobility.
- Administrative TCO savings by eliminating the need to augment wired cable plant for an increasing and ever-changing user base.

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### Solving Fundamental Challenges with a Single Solution

NYSIA deployed the Extricom WLAN infrastructure in stages. The initial phase involved rolling out the Extricom EXSW-800 WLAN switch and EXRP-20 Dual-Radio UltraThin™ Access Points (APs) on their primary floor, where the majority of tenants and conference room space are situated. Thanks to the unique Interference-Free™ channel blanket architecture of the Extricom solution, NYSIA was able to make infrastructure decisions that would have been difficult, if not impossible, with other WLAN technologies.

Maintaining the best possible data rate for all users was a fundamental business requirement for NYSIA. To meet this requirement, Extricom APs were placed so as to ensure 54Mbps coverage everywhere throughout the floor. While traditional cell-based WLAN systems would have required a time-consuming planning and optimizing process to avoid RF co-channel interference, NYSIA was able to roll out the Extricom APs rapidly and at locations of their choice, rather than locations dictated by Wi-Fi channel constraints. This was possible since Extricom's architecture allows APs to be placed wherever convenient, and to operate on the same channels, while the WLAN switch automatically prevents any co-channel interference from occurring.

The Extricom solution also eliminated the inherent conflict between 802.11b and 802.11g wireless clients, a contention situation that is well known to dramatically reduce throughput for 802.11g clients in so-called mixed-mode implementations. NYSIA set up the system to segregate the two types of clients onto two separate channel blankets, one for 802.11b and one for 802.11g, powered by the same set of APs. This "same band, dual-channel operation" allows 802.11g users to enjoy the full throughput available from the higher 54Mbps data rate, without being slowed down by 802.11b users, thereby maximizing system performance for all.

### The Administrative Payoff: More Demands Met, Less Demands Made

Seamless mobility is one of the unique characteristics of the Extricom technology. Extricom's patented channel blanket topology proved to be a deciding factor in NYSIA's technology selection. The channel blanket is

formed from the combined coverage of all the APs, which operate on the same channel(s). The Extricom switch completely controls all the APs, which merely function as radios, with no software, IP address, or processing. This topology allows NYSIA's tenants to move freely throughout the office space, retaining a constant and seamless connection that never experiences a handoff between APs.

From an administrative viewpoint, deploying Extricom's WLAN solution to provide office-wide Wi-Fi connectivity has proved its worth. While NYSIA tenants now have the high-speed connectivity, mobility, flexibility and security they demand, NYSIA IT staff have much lower demands on their time, freed from the need to pull cables and configure connections each time a tenant moves or adds another staff member. As Bruce Bernstein, President of NYSIA, attested, "Extricom's wireless LAN has proven to be a reliable and uniquely cost-effective solution for providing Wi-Fi."

### Toward the Cordless Future: VoWLAN

With the unqualified success of the first phase of the deployment, NYSIA moved to Phase 2, consisting of expansion of Wi-Fi coverage to additional floors and deployment of VoWLAN IP phones.

Since Incubator tenants are already using advanced VoIP systems, the transition to VoWLAN was straightforward. Extricom blanket coverage enables zero-latency mobility, which is indispensable to VoWLAN, and ensures toll-quality voice connections throughout the entire office. The channel blanket topology also permits VoIP traffic to be separated from high-speed data traffic, a key to ensuring that contention is not just mitigated but eliminated, ultimately enabling NYSIA to guarantee Quality of Service for voice users.

In the end analysis, the Extricom WLAN has enabled NYSIA to provide flexible, cost-effective IT services to their continually expanding tenant base without compromising on the basic service components of coverage, performance, mobility and security. Internally to IT, the system has proven to be easy to deploy and essentially maintenance-free, and has driven significant bricks-and-mortar cost reductions. The Incubator can now concentrate on its primary mandate: to continue to nurture the New York City high-tech community.