



Keeping Wireless Moving: Extricom WLAN at Bie & Berntsen

For well over a decade, companies in the manufacturing, logistics, and retail space have taken the lead in the use of wireless LAN (WLAN) to achieve improvements in both productivity and profitability. Pharmaceutical companies are an excellent example of this, especially since they typically have a mixed warehouse, manufacturing, and office environment in which a wide variety of wireless applications can provide great operating value.



For Danish pharmaceutical company Bie & Berntsen, WLAN was certainly a very attractive proposition to implement in their combined warehouse and lab facility, assuming it could meet their requirements. They wanted a system that would provide seamless mobility for warehouse personnel tracking stock, but would also support the data needs of their laboratories. Outpacing numerous competing solutions, the Extricom WLAN system was selected for its unique ability to deliver the robust, mobile, and easy-to-deploy wireless connectivity that Bie & Berntsen demanded.

Cost-Savings Multiplier

In an industry as efficiency-focused as warehousing and logistics, WLAN today can play an integral role in ensuring companies manage their inventory and operations in real-time. The range of applications for WLAN in a warehouse is considerable, and includes using RFID/Asset Tracking for inventory and supply chain management; providing streamlined workflow processes and cycle counts to reduce excess inventory; quickly building out IT infrastructure as warehouse space is expanded; and enabling Voice over WLAN (VoWLAN) for cost-effective communications between warehouse and back office personnel.

WLAN Moves into Pharmaceuticals

The pharmaceutical environment leverages IT infrastructure heavily, with a strong emphasis on process control and real-time information as products move from research through regulatory approval and into production. WLANs can help provide flexibility to critical back-end infrastructure, increasing the speed with which new products can be brought to market.

It is particularly at the level of pharmaceutical logistics where WLAN is positively impacting the bottom-line, enabling the industry to achieve substantial returns on investment from technologies such as item-level RFID tagging. In an environment where a single pallet of drugs can be worth tens of thousands of dollars, the ability to avoid overstock situations or closely

track inventory for compliance purposes can bring enormous operational advantages.

The Problematic Side of a Warehouse

Bie & Berntsen wanted to install WLAN at their headquarters in Copenhagen, Denmark, but only if it could meet their very stringent requirements. Whatever they deployed would have to be flexible and powerful enough to drive multiple applications.

First among these was a mobile handheld scanner solution that employees would use to check stock and to handle orders in the warehouse. The scanners ran a .NET application that required a continuous server connection. This therefore mandated a WLAN solution that would provide a robust, highly stable connection, without drops or interruptions of any kind, even as the devices were in constant motion throughout the facility.

Furthermore, the wireless system could not afford any coverage "dead zones," as this would contribute to lower grade wireless connectivity. In all, these requirements represented an insurmountable obstacle for traditional WLAN solutions.

The basic issue lies in a warehouse's physical environment. Although the wide, open spaces of a warehouse might seem ideal for wireless signal propagation, in fact the presence of large amounts of metal, as well as varying levels of stock on shelves, makes for an environment in which coverage holes can crop up from



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CTO
Bie & Berntsen

Project Scope

Implement WLAN that would provide robust connectivity for mobile handheld scanner solution in dynamic warehouse environment. Also support data connectivity needs for adjoining administrative offices.

Solution

- One Extricom EXSW-2400 switches and twenty-four EXRP-20 APs deployed to provide seamless mobility and guaranteed data rate throughout the campus.

Results

- Successful implementation ensures highly stable network with 100% uptime and “future-proofed” infrastructure that allows Bie & Berntsen to add other applications as needed.

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something as innocuous as the arrival of a large shipment of medicine in bottles. For cell-based WLAN solutions, which require careful balancing of wireless signal to avoid connectivity-killing co-channel interference, this can be a highly problematic challenge to overcome and may require a complete, and expensive, RF cell-planning survey to remediate.

Meeting Critical Requirements

But “highly problematic” and “remediate” would not be acceptable for Bie & Berntsen’s IT strategy. As Ken Hannsen, the company’s CTO, attested, “100% uptime for our scanners was an absolutely critical requirement. We could not tolerate downtime because of the impact on our business. Any outage, however short, translates directly into loss of revenue.”

Hannsen reached out to Neuco A/S, a local solution provider with experience in challenging Wi-Fi environments. Neuco’s review of the products available in the market revealed that the only Wi-Fi solution capable of meeting Bie & Berntsen’s requirement was the Extricom WLAN. Hannsen was impressed by what he saw: “We hadn’t seen any other vendor bring a solution like Extricom onto the market, and we wanted to be the first in Denmark to take advantage of it.”

Mobility without Roaming

What makes the Extricom system so different is its unique architecture. In this topology, known as the “channel blanket”, all of the system’s access points operate on the same channels to form multiple and overlapping blankets of Wi-Fi coverage, all controlled in real-time by a central wireless LAN switch. In such a system, the wireless client actually associates with the switch rather than the AP, and the result is an environment in which business-critical components such as scanners never lose connectivity from the system because there is no “handover,” or de-association and re-association, as they move from AP to AP.

While mobility is perfected, connection stability is guaranteed by the channel blanket topology, since multiple APs are always collaborating to provide real-time path diversity for communications between the client and the infrastructure. No other solution in the market can do this.

“The elimination of the classic AP-to-AP handoff problem, and the always-on connection enabled by the blanket’s path diversity are absolutely

key,” stated Neuco Wireless Consultant Hans Natorp. “The way in which the Extricom WLAN establishes and maintains such mobile and robust connectivity, even in a harsh industrial environment, made the solution ideal for Bie & Berntsen. This project experience proved to us that the Extricom-enabled infrastructure brings unique benefits that no one else can provide.”

A Flexible Deployment Model

Working collaboratively with Bie & Berntsen, Neuco performed a short pilot of the solution, mainly focused on validating compatibility between the scanner application and the Extricom system. With that completed, the WLAN was quickly rolled out to the company’s entire facility.

In a testament to the system’s flexibility, Bie & Berntsen initially deployed the system in so-called “mixed mode,” with 802.11b/g clients being supported on multiple channels. This was done to provide a wireless network access solution for back-office and laboratory employees who worked in a separate section of the building. But Bie & Berntsen soon discovered another of Extricom’s unique, market-first innovations: the layered channel blanket approach allows for the co-existence of both 802.11b and 802.11g users without incurring any of the performance impacts seen in other solutions, caused by the lower-speed .11b users slowing network access for the higher-speed .11g clients.

What Really Matters

Bie & Berntsen’s WLAN deployment has proved highly successful and system expansion to an additional campus is now planned. The “future-proofed” nature of an Extricom WLAN, and the fact that it can support any standard 802.11 device for data, voice, video or locationing applications, is a key benefit. But in the end, it may well be the robust, problem-free operation of the system that has most impressed IT and users alike at Bie & Berntsen, providing a caliber of Wi-Fi that was never before thought possible. As Hannsen summarized it, “It’s a great advantage to us that we can easily add other applications onto our infrastructure and have the confidence that the Extricom system will support them. As impressive is what’s happening today: a 100% stable network, that operates 24 hours a day, providing users with total mobility without dropped connections or performance issues.”