

C3 Clears Log Jam Allowing Customers To See The Wood Through The Trees

Tracking logs was a long-standing problem until a modern wireless network solution was implemented which enabled C3 customers the ability to monitor their consignments at the Port of Tauranga...

Forestry is one of New Zealand's largest export sectors. C3, New Zealand's largest on-wharf logistics company, provides logistical services for 21 million logs and 6.3 million tonnes of forestry products annually. In order to provide their customers with real-time web-based access to the status of their consignments, which is captured by an array of wireless handheld bar-code scanners, C3 needed to significantly expand the wireless coverage of their port facility. To help them identify the most appropriate network topology, optimise the placement of wireless access points to maximum coverage and offer value-added services for on-going support and further network development, they turned to Mobico.

C3's new wireless mesh network, powered by a configuration of indoor and outdoor access points provided by Mobico, now covers 13 hectares (32 acres), up from 3 hectares (7.5 acres). In addition, the coverage can be easily expanded as required and even ported off-site. C3's flexible and scalable wireless solution underpins their current log management applications, provides the infrastructure to support their customer portals and gives them a competitive edge for winning new business."

OUTDATED SYSTEM

C3 had been running a proprietary wireless network to support their log handling and warehousing solution. "We had been operating a legacy wireless network to support our handheld terminals," says Jason Garrett, IT manager at C3. "At the time of installation, 2002, our network was the most advanced wireless solution on the market and it had supported our applications as well as we could reasonably expect. Our technology partner, Mobico, had been supporting the network and had provided our handheld terminals. But, especially in the wireless space, the technology moves right along and we started to think about upgrading."

The legacy network only covered about three hectares (7.5 acres) of the wharf area, just two (out of four) log berths. "We found ourselves limited with our current coverage," explains Garrett. "We shift logs all over the facility and if we moved them out of the coverage range, away from the log berths, we lost the signal. At the same time we were thinking of extending our wireless RF and bar code scanning applications to include sawn timber and containers. Again, we didn't want to be constrained by our coverage area."

One of the drawbacks of the legacy network was its ability to scale. "We were limited to three nodes

on the network," says Garrett, "so we really couldn't just add a few more access points here and there. We trialed a couple of 'off-the-shelf' consumer/office access points to see how they would work, but for any number of reasons they didn't have the capabilities we wanted. We had been hearing about a new wireless topology, mesh networks, and started to ask around to see if that would be appropriate for our needs."

At the same time, Garrett and his team wanted to upgrade their handhelds. "While our older terminals had worked well, they were based on the Palm Operating System which was no longer the most appropriate platform," he explains. "Most of the newer crop of handhelds ran Microsoft's mobile OS so we started to look around for some replacements."



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Jason Garrett, IT Manager, C3

Finalist for the 2009 TUANZ Innovator of the Year Award

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CASE STUDY

> C3 Limited

AT A GLANCE

Business Objective

- > Expand wireless coverage of wharf area to support vital port operations
- > Upgrade handheld scanners to be compatible with enhanced log tracking applications
- > Provide flexibility and scalability in wireless network for expanded coverage

Solution

- > Motorola AP-5181 outdoor and Motorola AP-5131 indoor access points to support mesh wireless network
- > Wireless handheld scanners

Business Benefits

- > Expanded coverage from 3 hectares to 13 hectares
- > Flexibility of mesh network means C3 can move access points without reconfiguring network
- > Mesh networks are fully wireless expanding flexibility and reach while reducing hardware requirements

FOR MORE INFORMATION

- > Mobico, www.mobico.biz

MESH WIRELESS NETWORKING

“Jason is a hands-on manager and makes a major effort to stay current with the latest trends and technologies,” says Allan Moyle, Account Director at Mobico. “He was asking us for advice about extending his wireless coverage with a mesh topology as well as upgrading his handhelds. He was spot on with his homework, though, because Motorola had just released the mesh-enabled indoor access points.”

The key advantages of mesh technology are its scalability and flexibility. Mesh networking is based on a series of ‘nodes,’ each of which is capable of providing wireless network access to local users. Mesh technology offers a cost-effective solution for extending wireless coverage for large outdoor facilities by increasing the range and coverage of the network without increasing system cost. In addition, mesh networks only require cables for power. This makes mesh networks ideal for outdoor wireless networks and hard-to-cable buildings, such as historic or very large buildings that require long data cable runs.

After a few discussions, Garrett commissioned the Mobico team to perform a formal wireless site survey and recommend an appropriate wireless infrastructure. “We had been dealing with the Mobico team for years,” says Garrett, “and they have always given us excellent service and good advice. They are always quick to help and they maintain what they sell. In fact, they’ve even honoured a warranty even though our own repairs had voided the exact terms and conditions. Now that is what we would expect from a trusted partner.”

“We sent one of our technicians out to their facility,” continues Moyle, “and prepared a comprehensive site survey that identified 17 locations for access points that would give them the coverage they required. We specified a mix of wired and wireless access points with some requiring Power over Ethernet capabilities to avoid running power cables.”

“The site survey was exactly what we needed,” continues Garrett. “It showed us where to place the access points and outlined the additional coverage we could expect.”

“The advantage of the mesh topology,” he says, “is that we can add nodes as we need them without too much configuration. During the initial roll-out Mobico helped us test the network and offered a few technical tips to make it work more efficiently. Because the initial installation went so well, we’re in the process of adding more access points whenever we need to expand our network coverage.” Currently, C3’s mesh wireless network covers 13 hectares (32 acres), over 40% of the facility, and expands the reach of the wireless mesh network to include all four log berths and the majority of the log marshalling yard.

OUTDATED SYSTEM

The flexibility of the mesh network gives C3 even more options. “We placed a Motorola access point inside our ‘Portacom’ command centre, which is a shipping container that contains a mobile office,” says Garrett. “We simply move the Portacom next to a berth or work area, connect it to the power leads and we have a fully-functioning office with network access. We can even use the Portacom as a network extender if we need to temporarily expand the coverage. Or we can even move it off-site if need be.”

While Garrett and his team have a firm grasp of the technology, he appreciates the professional services from Mobico. “Sometimes it’s hard to get the specialised advice we need to move ahead with our IT initiatives,” says Garrett. “Allan and the team from Mobico are fantastic when it comes to keeping us up-to-date. They, and the Motorola people as well, tell us what’s new and how we can add even more value to our network. We are always expanding our capabilities and the mesh network has given us a wireless backbone that will allow us to fully support our RF and related initiatives.”