



SPC ARDMONA CASE STUDY

About SPC ARDMONA

From historical beginnings early last century as the Shepparton Processing Company and Ardmona Foods, to the modern, high-tech, high quality business that is SPC Ardmona today, Australia's premier fruit and vegetable processing company, has always proudly delivered consistently great products sourced from Victoria's rich Goulburn Valley.

After being acquired in 2005 by Australia's largest beverage company, Coca-Cola Amatil (CCA), SPC Ardmona was further strengthened, with extra funding on "State Of The Art" warehousing, new production capacity and optical sorting technology to improve the Company's Goulburn Valley manufacturing operations.

Objective

SPC Ardmona has three production facilities in Victoria's Goulburn Valley which processes up to 180,000 tonnes of fruits. These facilities are **Shepparton** (21 hectares), **Mooroopna** (18 hectares) and **Kyabram (8 hectares)**.

Each of these three facilities has state of art production, warehousing and sorting technology. To further leverage the benefits of the "State Of The Art" operations of these facilities with up to 1800 seasonal employees working across 3 shifts, 7 days a week, SPCA needed a fast, efficient and seamless communications network between them. Some of the major challenges in the way to achieve this were:

- Lack of bandwidth efficient services offered in Regional Shepparton
- Services offered by Carriers were neither fast enough nor cost effective
- Three facilities were spread across 40kms radius

David Frizzell – Head of IT at SPC Ardmona had been exploring various alternatives to improving the connection speed between the three facilities so that 'State Of The Art' operations at these facilities can be shared for improved productivity.

In August 2007 David Frizzell invited Wave1 to discuss and explore options for a fast and efficient Microwave WAN between Shepparton, Mooroopna and Kyabram facilities.

The meetings outlined the following key requirements;

- A fast and reliable Wide Area Network (WAN) between Shepparton, Mooroopna & Kyabram delivering at least 50 Mbps
- Such a WAN shall be able to support Real Time applications running at each facilities
- Proposed network shall be able to support Voice and Quality of Service across the whole network
- That the network shall be upgradable in future

Wave1 was asked to do a feasibility study for providing a fast, bandwidth efficient and a reliable Microwave WAN to meet all of the above key criterias.

Wave1 went back and took up detailed analysis with following outcome:

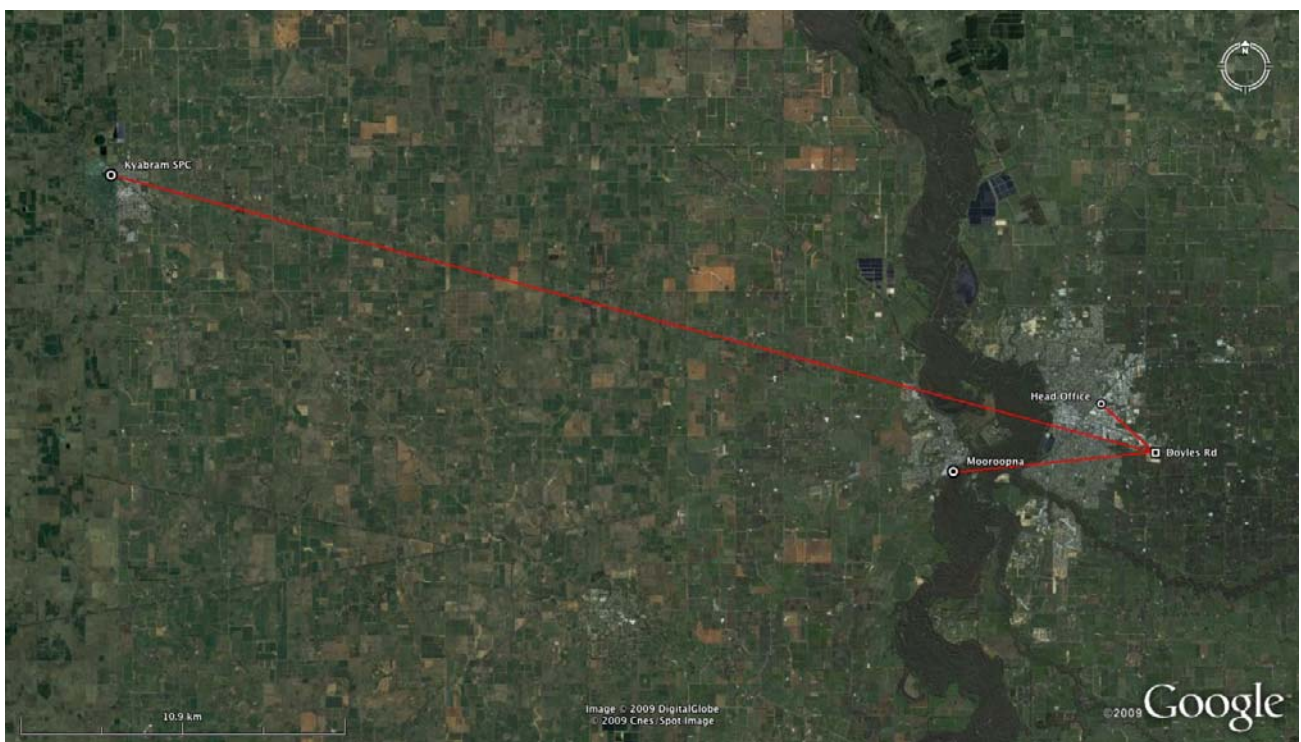
- A detailed computer mapping of terrain in order to assess if terrain was feasible to deliver such a network.
- Shepparton is a flat terrain however extremely tall trees in the region pose great Line of Sight (LOS) challenges
- Wave1 identified a few repeater options that could be used to ascertain LOS to each of these sight
- Based on these studies a preliminary design proposal was presented to SPCA

The key recommendation from Wave1 was that whilst a Microwave WAN is possible along the lines of SPCA requirements, a physical LOS survey is a must in order to confirm the most suitable repeater locations.

SPCA ordered a Sight Survey with cherry pickers which led to consolidation of a final network design and Microwave based WAN Proposal.

Solution Proposed by Wave1:

There was no direct LOS from Shepparton to Kyabram or Mooroopna. Instead Shepparton Council's Tower was identified as a potential repeater to achieve LOS. The Microwave WAN design was proposed and implemented as follows:



Microwave WAN Overview: SPC Shepparton

- Wave1 proposed the Council's Doyle Road 60 meter Lattice Tower to be used as a Repeater.
- A full duplex Digital 50 Mbps licensed band Microwave between the Shepparton facility and Doyles Road Tower
- A 50 Mbps full duplex microwave between Doyles Rd Tower and Mooroopna facility
- A similar 50 Mbps Licensed microwave link from Doyles Road Tower to Kyabram facility.

Microwave Link between Doyle Road Tower & Kyabram:

- A 35m lattice tower was recommended and installed on top of the roof at Kyabram to support a microwave dish.
 - A 600mm dish was installed at the top of the 60m tower at Doyles Road
- A detailed structural engineering analysis on the Doyles Road Tower was conducted to ascertain the tower is structurally strong enough to sustain antennas at the 60m height (right on top of the tower)



Wave1 Engineers and Riggers working at Doyle Tower (Repeater) in Shepparton

Microwave Link between Doyle Road Tower & Mooroopna

- A 25m lattice tower was recommended and installed on top of the roof at Mooroopna to support microwave dish.
- Similarly a 600 mm dish was installed at the top of the 53m tower at Doyles Road



25m mast at SPCA facilities at Mooropana

One of the most critical aspects of implementing this WAN was Civil and Structural engineering work associated with erecting the 25 and 35m masts at Mooroopna & Kyabram. This included:

- Carrying out the Civil & structural engineering of roofs of Mooroopna and Kyabram to ensure the 25 & 35m towers are installed safely
- Designed, supplied, installed 25m and 35m mast including mast engineering
- Carried out Structural engineering analysis of Doyles Road Tower
- Assisted SPCA in their efforts to obtain Town Planning permits from Council

Since the initial site survey in September 2007 to final installation in April 2008, Wave1 in conjunction with the SPCA Network team, project managed the whole job.

Since final implementation, the Microwave WAN has been working flawlessly, much to the satisfaction of SPC Ardmona.

Benefits:

The Microwave WAN supplied by Wave1 has resulted in some major benefits to SPCA.

- 50 Mbps full duplex microwave backhaul now implemented is nearly 40 times faster than the carrier service available before
- The extra bandwidth available allows SPCA to share their state of the art resources across the three facilities
- SPCA can run real time applications across their network which helps improve their productivity
- Fast, full duplex network with additional bandwidths now allows SPCA to run VoIP across the network and this has resulted in significant cost savings.
- The Microwave WAN not only allows SPCA to run data, voice and real time applications but also serves DR (Disaster Recovery) strategy quite efficiently.
- SPCA now owns the microwave infrastructure and no longer has to pay high annual fees to Carriers for running services that were far too inadequate and limiting.

David Frizzell is the very proud IT Manager at SPC Ardmona whose vision resulted in the implementation of this WAN. He sums up –

Due to our regional location it was not possible to provide high bandwidth cost-effectively.

We needed to link 250 desktop users over 3 sites within a 40 km radius. The microwave solution that Wave1 provided us with has provided many benefits, in particular, we have increased the bandwidth by 40 times and reduced the operating costs to 1 tenth of what they were before the implementation of the microwave solution.

Other benefits include - We are no longer tied to a carrier and only have small maintenance fees, we have since installed voice over IP which has significantly reduced the inter-site communication costs, Application delays are eliminated so solutions like RF scanning have since been implemented in each site, Consolidation of servers is now made possible, Importantly we have set up real-time replication of critical transactions across the sites thus providing ideal DR and Business Continuity processes. With the previous land based connections, reliability was an issue for one of our sites.

Overall, we are very satisfied with the results.

For further information on this project, please call:

Himanshu Mishra
Sales Manager – Asia Pacific
61-3- 9212 7200.
hmishra@wave1.com.au