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Airspan

Submission to the Regional Telecommunications Independent Review Committee

“Broadband Solutions for Remote Areas”

Introduction

Airspan welcomes this opportunity to comment on Broadband Solutions for Remote Areas.

Wireless has always played a role in delivering vital services to Australia's remote areas and, with continuous developments in the technology, remains one of the most cost-effective and reliable solutions available to Remote Areas.

For the purposes of this response, we assume "Remote Areas" refers to the remaining 2% of the population not covered by the Federal Government's proposed National Broadband Network (NBN).

About Airspan

Airspan is a global manufacturer of wireless equipment providing broadband and voice services to hundreds of thousands of people around the world. The current-generation wireless technology, first introduced in 2005, is called "WiMAX".

The Airspan local presence, in Sydney for the past 8 years, supports Australian service providers currently using Airspan technology to deliver wireless broadband and voice services to regional areas, often with the assistance of an Australian Government funding program.

Airspan also plays a key role in maintaining the existing "Proximity" fixed-wireless telephone system that Telstra uses today to deliver USO telephone services to customers in remote and regional areas across Australia; areas where other technologies are not cost-effective.

Remote Areas and Wireless

Broadband and Voice service delivery consists of two parts – Access and Backhaul.

Access is the method whereby an individual customer connects to the nearest provider infrastructure – e.g. a radio tower or a telephone exchange. **Backhaul** is the system that carries those services from the providers' local radio-tower, exchange etc. back to a national network. Backhaul is usually built with either Fibre Optic cables or Microwave Radio.

Delivery of services into Remote Areas requires both components – Access and Backhaul. Remote areas provide challenges for both of these components.

Customers can receive services over existing standard copper telephone wires. Broadband via ADSL, however, is limited to a few km from the telephone exchange. The exchange itself can have limitations in terms of the capacity and cost of the backhaul available. Many exchanges also now house ADSL equipment installed by competing (i.e. non-incumbent) service providers, who can make their own backhaul arrangements, providing an element of competition for those broadband customers fortunate enough to be located near an exchange.

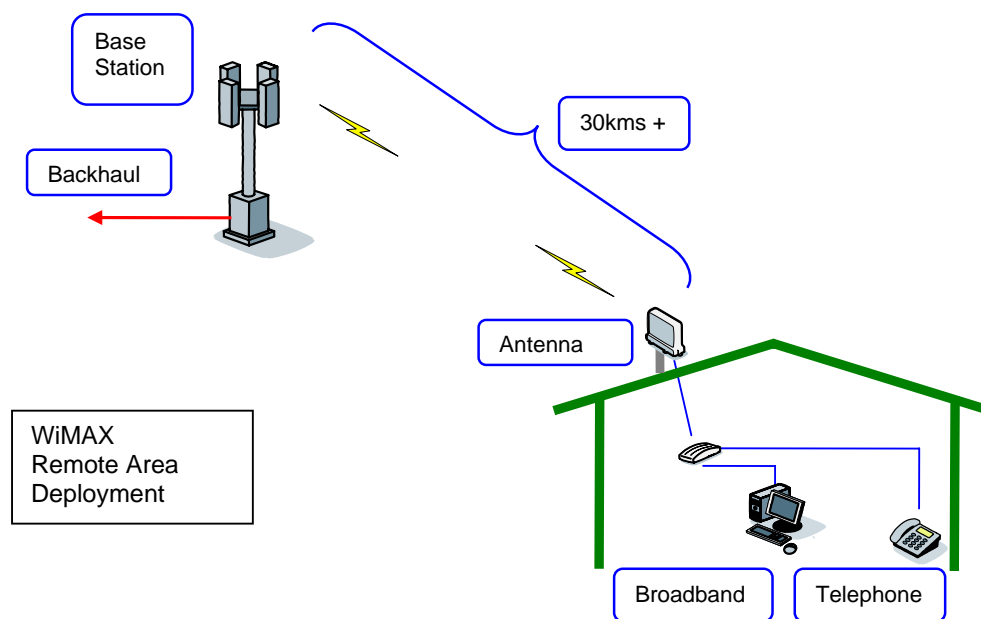
WiMAX technology can “leap over” existing infrastructure to provide Broadband and Voice services independent of the length, condition or ownership of copper wires. Unlike “Mobile Phone” (voice-oriented wireless technologies), WiMAX was specifically created to deliver high-speed IP services (i.e. Broadband and VOIP) cost-effectively.

WiMAX wireless technology is very cost-effective in low-population density areas. WiMAX technology is proven and solving communications problems around the world today.

WiMAX deployments are versatile, and can be equally designed to accommodate populated areas with large data-capacity demands, or solar-powered low-cost sites for large cell-sizes in sparsely populated areas.

Airspan's position is that WiMAX wireless technology should be used wherever it is more cost-effective than other means of delivering broadband and voice services.

Once deployed, WiMAX offers the ability to scale with increasing data demands, and can take full advantage of lower backhaul costs as the NBN rolls-out.



Case Study : Regional WiMAX Wireless Deployment

Internode, a South Australian telecommunications company, is today delivering Broadband and Voice services with wireless technology to the Yorke Peninsula

(Ref: <http://www.internode.on.net/news/2008/01/71.php>)

From Press Release on Internode public website:

Internode's WiMAX network on the Yorke Peninsula is delivering real-world wireless broadband speeds as fast as six megabits per second up to 30km from its base stations.

Internode rolls out 'real world' WiMAX in regional Australia 25-01-2008

Internode has started connecting customers to its high speed national network, becoming the first Australian broadband company to deliver a region-wide, wireless broadband service using WiMAX.

Internode has several installation teams working on the Yorke Peninsula, west of Adelaide, to connect more than 200 people who have ordered broadband through the Federal Government's Australian Broadband Guarantee (ABG) program. Many of these people live too far from a telephone exchange to get ADSL-based broadband.

Through a network of 10 WiMAX base stations using the 3.4 gigahertz licensed spectrum, Internode is achieving transmission speeds as fast as six megabits per second at distances as far as 30km from the tower, as long as good line of sight is available.

Internode's first commercial WiMAX customer, farmer Ted Buttfield, who was connected to the Internode network on Monday, January 21, said Internode's WiMAX broadband service was terrific. "Compared to the dial-up service we've had until now, it is wonderful," he said.

"We use the Internet for many things including Internet banking, which was painful over a dial-up connection. My wife used to get very frustrated with the length of time it took to get through the security mode. Even something simple, like downloading Norton upgrades, could take an hour and a half, with dropouts. Last night, it took us only minutes.

"One thing we are looking forward to is using Internode's NodePhone service. We have a son who lives in Melbourne, so I reckon that will save us a few dollars in telephone calls.

"Internode has been extremely helpful. I have nothing but praise for them as they've bent over backwards for us. I think a lot of people here are putting their hands up for broadband. If you go to the pub, or meetings of the Progress Association, broadband is a topic of conversation at every meeting."

Internode is using WiMAX wireless broadband technology throughout the Yorke Peninsula to connect customers who are beyond the reach of "wired" ADSL services, which are limited by telephone line quality and distance from the telephone exchange.

Internode managing director Simon Hackett said Internode's experience demonstrated that WiMAX worked perfectly using licensed spectrum. "With WiMAX equipment installed on 10 of our towers, we are providing virtually 100 per cent coverage of the Yorke Peninsula," he said.

"With good line of sight, we are achieving speeds as fast as six megs per second at distances up to 30km from the base station. This is not a theoretical result – it's a real world outcome. All of our base station equipment is now installed, so it's just a matter of setting up equipment at our customers' premises. We have two surveyors and four installation teams on the road to make sure we can get the equipment deployed as quickly as possible.



An Internode solar-powered WiMAX Base-Station site.

Wireless and Satellite

Wireless

Wireless can deliver services (Broadband and Voice) at 12Mbps+ peak-speeds to customers located up to 20km from the basestation, 6Mbps+ to customers located up to 30km away, and 3Mbps+ to those located >30km away.

“Fixed” wireless systems use high-gain antennas, typically fixed to a rooftop much like a TV antenna, to provide services reliably over very long distances. The ability to work at long distances means that areas with a very low population-density can be served cost-effectively from a minimum of infrastructure.

Wireless infrastructure, once built and maintained, incurs no incremental cost for data actually delivered. In other words, as the volume of data (cap) on broadband-plans increase over time, as it inevitably will, there is no extra cost in the actual delivery of this extra data to the end-user from the service provider’s base-station. As new submarine cables across the Pacific bring down the price of Internet data in Australia over the next few years, these reductions can be passed-on to wireless (terrestrial) users.

Satellite

Satellite technology can deliver broadband. It is technically possible to also deliver voice calls of an acceptable quality over satellite, though systems in-use today vary in their ability to deliver this.

Satellite technology incurs the unavoidable delays (latency) imposed on data-streams that must travel to a satellite in geosynchronous orbit and back again, amounting to some hundreds of milliseconds. Some types of broadband internet applications can suffer poor performance because of this delay.

Though satellite can currently deliver acceptable speeds, the actual amount of data transferred is a fixed part of the charge made by Satellite providers to users, as this represents utilisation of a very expensive orbiting platform with a finite capacity that must be recovered. This means that data-caps in broadband-plans for satellite are likely to remain low, with expensive excess-data charges that are linked to the satellite’s fixed capacity.

Satellite is an appropriate technology for delivery of broadband where (terrestrial) wireless is not cost-effective to deliver; for example:

- Where terrestrial wireless signals are compromised by local terrain, and the cost of overcoming this is not justified by the number of additional customers that could be covered
- Extremely low population-density areas
- Very remote areas where the backhaul required to reach potential basestation tower sites is too expensive to build
- Temporary connections

Remote areas and the NBN

Customers using wireless infrastructure built today can benefit from the NBN project in the future. As discussed above, wireless infrastructure, once built and maintained, can deliver large amounts of additional data at no incremental cost.

Where the NBN deployment pushes towards a Remote Area, it can potentially bring with it a reduction in backhaul costs, both in reducing the costs of transporting the data to the local wireless infrastructure, and also the rates for the quantity of data itself. These reductions can be passed on to the consumer.

Satellite services by-pass the NBN altogether, and are delivered over a proprietary infrastructure.

Remote Areas and Targeted funding

Airspan welcomes the announcement of funding for the Australian Broadband Guarantee (ABG) program to the value of \$270.7 million until June 2012, *independent of the NBN project*.

Airspan applauds the recent directions as indicated in the Australian Broadband Guarantee Draft Guidelines 2008-09, which include an emphasis on whole-of-region projects and longer-term support for building sustainable, quality wireless infrastructure.

Competition in Remote Areas

It is recognised that competition alone cannot bring services to remote areas at a cost that users located in those areas are willing, or capable of paying. Schemes such as the ABG provide the shortfall funds to provide services to remote areas at "Metro-comparable" prices.

ABG Draft Guidelines show that there is, however, a process in-place whereby providers and technologies are effectively allowed to compete for the funding-dollar itself, ultimately resulting in the most cost-effective solution delivering services of a defined quality to a given region.