Australia Outback could soon get web via TV aerial

December 5 2010, by Amy Coopes

An Australian high school student uses Wi-Fi to connect her laptop to the internet in a Sydney garden. Australia's sheer size makes universal Internet access a huge challenge, with many millions of square kilometres stretching through deserts and mountains from the Indian Ocean to the Pacific and from tropics to snow.

The humble old rooftop TV aerial could bring superfast Internet to even the most remote shack in the Australian Outback and help solve the problem of how to connect isolated communities across the globe.

Researchers in Australia from the government science agency CSIRO have developed new technology which could achieve connection speeds to compete with the best: through the tangled piece of metal already attached to most roofs.

"The basic premise is if you get good high quality analogue television you should be able to get reliable high-speed communications," project leader Ian Oppermann said.

Australia's sheer size makes universal Internet access a huge challenge, with many millions of square kilometres stretching through deserts and mountains from the Indian Ocean to the Pacific and from tropics to snow.

In some places the population is so sparse, Oppermann says they calculate the "nanopeople" per square kilometre.

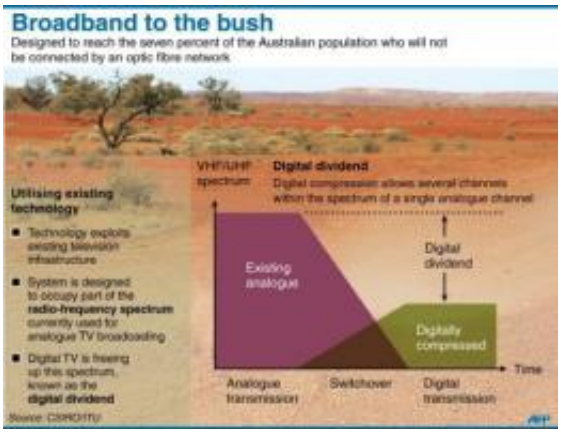
The Australian government has the National Broadband Network (NBN) in the works which aims to connect 93 percent of the country to high speed Internet via a fibre optic network.

But that still leaves seven per cent without what is becoming, increasingly, a basic human right.

The NBN promises speeds of 100 megabits per second, but the new project team reckon they can match that and connect remote Australia through the spectrum once used for their TV sets.

Most people have access to a television signal and more remote communities have relatively little interference -- perfect conditions for low-frequency Internet transmission on the VHF/UHF bands.

Australia's "big bold" Internet experiment is being watched by a number of other countries mulling similar plans, many of whom Oppermann said had either completed the shift from analogue TV or were in the process of doing so.



Graphic on an Australian scheme to use TV aerials to connect remote communities to the Internet. Researchers in Australia have developed new technology which could achieve high-speed broadband connection through the rooftop device.

"There are lots of parts of Australia which look a little bit like big parts of Canada, Russia, China, parts of the US, most of Africa from the perspective of where the population is distributed and the sort of conditions that people live in, purely from a communications perspective," Opperman said.

"I think Australia really stands a chance of being of global test case. If we get it right there is really an opportunity that other countries will follow what Australia is leading with."

Australia began switching off its analogue TV signals in June and the transition to digital-only transmission is expected to be complete by the end of 2013, five years before the rollout finishes for the NBN.

The spectrum is then expected to be auctioned off for communications purposes and this low-frequency analogue television spectrum could be the perfect solution.

"To give you an analogy, this is beachfront property," Oppermann told AFP.

"The reason that it's expensive is that it's relatively low frequency and low frequencies travel very well. If you're after reach it's a very good piece of spectrum to have."

Unlike current GSM or 3G networks which lose download speed exponential to increasing users, Oppermann said an analogue signal would provide a consistent speed no matter how many users there were.

A handout photo released by Marais-Lucas Technologies shows the cutting wheel of a trenching machine, designed and built in to lay the first of millions of kilometres of fibre-optic cable, the first step in a multi-billion dollar scheme to connect the nation to boradband.

This high-speed communication could revolutionise life for people living in Australia's isolated Outback, allowing for virtual appointments with a doctor or government officials.

Six farms on the southern island state of Tasmania will test the technology, which will only work in towns of less than 1,000 homes

because too many buildings will obstruct the signal, next month ahead of a wider field study.

"It's not just an idea anymore," Oppermann said. "We can demonstrate that it's actually something useful."

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