#### **PEOPLE WORKING WITH TECHNOLOGY IN REMOTE COMMUNITIES**



1011

REGIONAL TELECOMMUNICATIONS REVIEW // THE END OF REMOTE COMMUNITY TV BROADCASTING? CAT'S HOME INTERNET PROJECT // HERON LOBAN // THE NBN // CONNECTIVITY EMPOWERS FIRST NATIONS PEOPLES

BUSH TECHS: Useful smart phone Apps for remote communities // Setting up Internet banking



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COVER PHOTO: Monica Ray learning to use photo booth at the Community Centre in Alpurrurulam. Our Place Magazine is printed on a 55% recycled paper and BUSH TECHS are printed on a certified green paper. Printed by Colemans Printing using a chemical free plate process and vegetable based inks.



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#### WARNING:

This magazine contains images of Indigenous and non-Indigenous people. Caution should be exercised while reading this magazine, as some of these images may be of deceased persons.

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## Key issues and challenges in ICT

There are a number of challenges and opportunities in Information Communication Technology (ICT) that affect remote Indigenous communities. This edition explores and highlights some of these issues and opportunities, many of which have been discussed through the newly-created 'Broadband for the Bush Alliance,' at its recent Forum in July 2012. Key issues and challenges raised included:

• THE UNMET DEMAND FOR BASIC TELEPHONY SERVICES, ESPECIALLY MOBILE TELEPHONY is not being addressed through the NBN. Most remote Indigenous communities in Australia don't have access to a mobile network. Where they do, there is very limited coverage. Implications for communities include: negative impacts on monitoring health; emergency situations that can arise in the wet/dry seasons; or, in the event of a natural disasters due to limited coverage.

#### LATENCY DELAYS MAY RESTRICT THE USE OF TWO-WAY HIGH-SPEED APPLICATIONS USED IN REMOTE SERVICE DELIVERY

Sometimes there can be a delay between an instruction being given and the action being completed. This is known as 'latency'. Latency is a major issue in remote Indigenous communities, as it presents a significant barrier that restricts two-way-high-speed applications needed in service delivery applications for health, education, justice and other services.

#### **3** LOW UPTAKE AND ACCESS LEVELS TO THE INTERNET

In remote Indigenous communities, ongoing research shows extremely low levels of uptake, even though these very communities have more to gain by going online. Current levels of access are low due to socio-economic issues and remoteness of many Indigenous communities from necessary infrastructure. The ongoing viability for remote communities and towns will increasingly depend on effective broadband access. Where there is access, the indications are that there are many benefits that

communities are discovering and therefore engaging in use of the Internet.

#### LIMITED BANDWIDTH AVAILABLE ON REMOTE COMMUNITIES

With some remote service delivery providers currently operating in Central Australia, up to 40% of their bandwidth is taken up by Microsoft and Apple updates. The high cost of Internet access in remote locations can be prohibitive, with up to \$10,000 being paid to contractors for satellite and internet installations. Due to slow Internet speed, the high cost and limited bandwidth available, some shire offices in remote locations are reverting to manual systems.

## **5** THE NBN IS AN IMPORTANT AND MUCH NEEDED NATION-BUILDING PROGRAM

However, the current NBN solutions risk increasing the digital divide and exacerbating a two-speed economy, limiting economic and social development opportunities for remote Australia.

#### **B** BETTER USE OF BACKHAUL CAPACITY OF EXISTING NETWORKS

Backhauling is when network data is sent over out-of-the-way routes in order to get data to its destination sooner or cheaper. The potential to use current and planned backhaul capacity to improve mobile telephony exists. Under current policy, however this capacity is under-utilised. There is an opportunity for the NBN to take into account this infrastructure to increase the mobile coverage footprint in remote Australia.





From left: Jim Bray; CAT Chair, Peter Renehan and Frank Curtis.

### CAT Board members win NAIDOC Person & Elder of the Year Awards

July 16–21, 2012 was a festive occasion as residents of Alice Springs and nearby communities celebrated National Aboriginal and Islander Day of Celebration (NAIDOC) 2012. The theme for this year was 'Spirit of the Tent Embassy: 40 years on'.

This year, the 2012 NAIDOC Alice Springs Person of the Year was awarded to Mr Frank Curtis. Over the last few years, Alice Springs and nearby Indigenous Communities of Central Australia have received a lot of negative publicity about Indigenous youth. Rather than avoid the issue, Frank Curtis has dedicated his life to working with disengaged Aboriginal youth and is constantly chipping away at the problem, tackling it head-on. Frank has done this work very quietly, with humility, drawing very little attention to what he's been doing. Frank is a long-serving member on the Board of the Centre for Appropriate Technology.

In addition, the 2012 NAIDOC Alice Springs Elder (Male) of the year was awarded to Mr James Bray. As an advocate for social justice, education opportunities and livelihood pathways for Aboriginal people, Jim's commitment and work over the years with Indigenous people living on homelands and outstations has been exemplary, particularly in Alice Springs and nearby Indigenous communities of Central Australia. He is a shining example for future generations of Aboriginal and non-Aboriginal Australians. Jim has served as Chairman of the CAT Board for more than 10 years. He helped establish the Desert Peoples Centre, providing vision and leadership in creating the Desert Knowledge movement.

Congratulations to Jim and Frank for being recognised by the community for their contributions!

### ACCAN Conference looks at the revised Telecommunications Consumer Protection Code

Tn September 2012, a representative of CAT attended L the Australian Communications Consumer Action Network (ACCAN) annual conference held in Sydney. ACCAN is a relatively new body (formed in 2009) and is the peak organisation for consumers of communications technology. It advocates strongly for consumers in regional and remote Australia and for people with disabilities: it was impressive to see most conference sessions being 'signed' and also transcribed onto a large screen in the conference hall for participants with hearing impairments. The conference theme was 'Delivering for Consumers'. Speakers addressed important current issues including: a greatly revised Telecommunications Consumer Protection Code, resulting from the very high level of customer complaints about misleading or confusing information from service providers, particularly about mobile services. The new code will help to reduce problems such as 'bill shock', where customers receive unexpectedly high phone or Internet bills. The conference also looked at the 2012 Regional Telecommunications Review. The Review found that the single most important issue for rural and regional Australia is inadequate mobile coverage. 'There is opportunity for all levels of government and local communities to work in partnership with carriers to extend coverage.' (Sinclair Review p10)

### Broadband for the Bush 2 Forum creates Alliance to advocate for remote Australia

The second annual Broadband for the Bush Forum was held in July 2012 in Alice Springs, resulting in the formation of the 'Broadband in the Bush Alliance.' At this stage the Alliance consists of: Indigenous Remote Communities Association (IRCA), Australian Communications Consumer Action Network (ACCAN), Centre for Appropriate Technology, Desert Knowledge Australia, Centre for Remote Health and Ninti One Ltd. The aim of the Alliance is to help develop a critical mass of shared voices that advocate for the best possible access and social and economic outcomes for remote Australians and remote communities. The Forum looked at a range of ICT issues impacting remote communities including: what the NBN will achieve, government policy and planning for remote Australia, outcomes of the Regional Telecommunications Review, the digital divide, social inclusion and access issues. Overall, the Forum brought together a wide range of views, creating networking, advocacy and enterprise opportunities and linkages for remote communities and stakeholders.

Heron Loban (left) shares a copy of the Sinclair Review with Madly Bodin (right) from Desert Knowledge Australia, at the 'Broadband for the Bush 2' forum.

## A passion for connection: Heron Loban

Hailing from the Torres Strait, Heron Loban is a Lecturer in Law at James Cook University. Her life is about creating change, not only for Aboriginal people but for the wider community. Heron's service on the Sinclair Review is one example of the passion she has for ICT issues.

#### By Hujjat Nadarajah

orn on Thursday Island in the Torres Strait, Heron Loban hails from a family that comes from the islands of Mabuiag and Boigu. Fluent in English, Heron speaks a bit of Torres Strait Creole too. Along with her passion for ICT, Heron has a strong interest in Aboriginal and Torres Strait Islander art.

Growing up in Brisbane, after finishing high school, Heron studied law and arts at the University of Queensland. 'For some reason, from the age of about 12, I started telling everyone I was going to be a lawyer. So during my high school years this was my goal — to study law at university', she says.

Later in her career as a solicitor, the work she did on native title while living in the Torres Strait changed her life. 'Working as a solicitor for traditional owners in native title claims, I was very fortunate to be able to talk to and learn from Elders about our ways. A personal and professional highlight for me was representing the people of Mabuiag in the Federal Court at the determination of native title. It was a rare honour and one which I could experience because of my university studies', she says.

Heron's involvement in Information Communication Technology (ICT) issues came about as a result of her work as Chairperson of an Indigenous consumer organisation in Cairns.

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I would like to see Aboriginal and Torres Strait Islander people now and through the generations having chances and choices — ICT provides the best opportunity yet to deliver on these.

This led to her election to the Board of the Australian Communications Consumer Action Network (ACCAN), a national body, which has as its primary focus consumer and communications issues.

For Heron, this career path reached another milestone, with her recent involvement in the Regional Telecommunications Review, also known as The Sinclair Review.

The second of its kind, The Sinclair Review is part of a major public consultation process established under legislation and conducted every three years to examine the state of telecommunications services in regional, rural and remote Australia.

The Review conducted 27 public consultations and received 222 submissions that contributed towards the Report. Heron notes how she 'learnt that independent reviews like the Sinclair Review play a vital role in ensuring the voices of the community and their needs can be heard.' She firmly believes that it is because of this independence and because the report is a reflection of what the community is saying that it is being given so much credence.

So why is ICT important, and how can ICT help people living out in remote Indigenous communities? Heron points out that '... for the first time we have the opportunity to do away with the 'remote'. Indigenous communities no longer have to be isolated — they can be connected. Limitations of time and space no longer need to apply.'

A number of barriers to ICT uptake and access impact remote Indigenous communities. 'The barriers and challenges to ICT uptake essentially fall into two categories - one, access to reliable infrastructure and two, knowledge about how to use that infrastructure. The first of these is a an issue which is addressed in part by the NBN though further thought needs to go towards optimal ICT infrastructure solutions for remote Indigenous communities. The second of these issues, though not technical, is a more complex one because it is about people. The need for knowledge is agreed but how

that knowledge is best taught and best learned is the challenge. I think Indigenous communities themselves have the answers to these questions — if we ask', she states.

Among the challenges associated with ICT for Indigenous people is the need for more female-identified ICT roles. 'I would like to see more Indigenous women in ICT-related roles. Men and women, particularly in remote Indigenous communities, have distinct points of view and both are needed if Indigenous communities are to best take advantage of ICT. I am not sure whether this situation is changing but would certainly consider opportunities to mentor Indigenous women who feel they could benefit from my experience', she says.

Reflecting overall on her life, ultimately the effort she makes as an active member of her community in Cairns and beyond, allows Heron to focus on areas that can create change not only for Indigenous people but for the wider community.

'I think partnerships, collaboration and cooperation are key ingredients for the enduring betterment of the lives of Indigenous people in Australia.'



## CAT'S HOME INTERNET PROJECT: Taking community computing in a new direction

Most Australian families, particularly in urban and regional areas, typically have one or more computers in their own homes, making it possible for adults and children to access the Internet at all times and to manage the computer as a resource of their own. Since 2010, the Centre for Appropriate Technology (CAT) has been working with residents in three Northern Territory outstation communities to introduce home-based computing. The Home Internet Project is exploring how this approach can be applied in remote communities. The project is a collaboration between CAT, Central Land Council and Swinburne University.

#### By Andrew Crouch

or more than 10 years now, a range of government programs have provided computing, Internet connections and training for residents of some of the larger remote Indigenous

communities. These programs have focussed on the public Internet centre or library model, whereby facilities are set up in a shared community building which is supervised for daytime access several days per week.

In 2009, aware that most Australian families had moved on from depending on local Internet centres for access to computing facilities, CAT initiated an exploration of other ways in which residents of remote Indigenous communities might use computers. A project was developed to assist people to obtain and use computers and Internet connections in their homes, while documenting what worked in this situation.

In partnership with researchers at the Central Land Council (CLC) and the Swinburne University of Technology's Institute for Social Research (SISR), CAT developed the project further. An early step was to obtain interest from communities to participate in the project. The residents of Kwale Kwale, Mungalawurru and Imangara in central Australia were enthusiastic, and the Home Internet Project was born.

These three communities are typical of central Australian outstation communities. They vary in size, distance from their regional town and access to services. All are relatively isolated. One community has a small school and station shop nearby, while residents of the other

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BEING CONTACTABLE to answer the public phone anymore as people will send an email if they need to reach us.

**AUTONOMY** I want to learn how to do Internet banking so that I don't have to ask [the shop keeper] all the time, I want to do it myself.

Community residents doing Home Internet Project evaluation.

two communities need to travel up to 80km to schools and shops. There is no mobile coverage, and everyone relies on a single telephone for communications. The only option for these communities to connect to the Internet is via satellite. Although the power supply arrangements vary from diesel to solar to grid connection, it is reliable.

Since none of the communities had the opportunity to participate in previous government funded Internet centre schemes, and therefore had no existing equipment or connections, the Home Internet Project was conceived as a combined implementation and research project - one that supported community needs, whilst providing valuable data on the issues that impact Internet access on country that is very remote. Clearly, a major practical factor was that funding was needed both to obtain the equipment and services, and to fund the research component of the project. Fortunately, support was obtained from a variety of sources. Each of the project

partners (CAT, SISR and CLC) contributed in-kind personnel time and expertise. The consumer body the Australian Communications Consumer Action Network (ACCAN) and the Australian Research Council (ARC) provided funding for the research phase and the Aboriginals Benefit Account (ABA) funded the equipment and services. The project was structured in THREE PHASES:

PHASE 1: A baseline study was undertaken to examine people's existing knowledge and experience with computing and the Internet, and their aspirations in this regard. The study interviewed 50 groups of residents and individuals ranging from primary school aged children to older adults. Their existing skill levels ranged from a reasonably mature degree of computer literacy down to no familiarity with computers at all. (Rennie et al 2011)

PHASE 2: An implementation phase, where each participating household received a computer

and printer, and each community had one or two shared satellite connections and a local WiFi network installed, connecting all of the computers to the Internet. Ongoing technical support and training continues to be provided as an integral part of the project. (Crouch, A. 2012)

PHASE 3: A longitudinal research phase will continue for the three year duration of the project. This phase will observe how people are using the facilities and identify factors — human and technical - which help or hinder effective and sustained use of these tools for communications, learning, entertainment, and personal business. A particular aspect is observing whether a growing sense of the value and utility of the computers to the residents themselves will lead in turn to a preparedness to sustain and support the facilities after the project funding ceases.

Almost all householders in the three outstation communities chose

#### FROM THE HOME INTERNET STUDY:

- 1. 60% had never used the Internet.
- 2. 30% own mobile phones for use in town.
- 3. Significant new uses: Basics Card and Internet banking. Some households are doing online shopping to buy cars, car parts, DVDs, toys for kids and clothing.



Pictured top right: Mungalawurru Outstation one of the three communities that are participating in CAT's Home Internet Project.

to participate in the project. Regular face-to-face engagement with the project team has ensured their active engagement in the project.

The equipment was installed over a period of about four months in mid-2011. An off-the-shelf personal computer (the residents chose mainly desktops), printer and table were provided to each participating household. A number of residents asked if the equipment could be made secure when they were away from home, or stowed away at times when they did not want their young kids to use it. A lockable cover that was large enough to enclose the computer and printer and to protect the equipment from dust, food and mice was designed and built by CAT and these were ultimately provided to most of the households.

Alice Springs based computer networking contractors were engaged to supply the WiFi facilities. This involved the installation of point-to-point wireless links with roof or eave-mounted antennas between each satellite dish location and its cluster of houses. In some cases these links had to cover several hundred metres across hilly terrain.

Since the completion of the installations, CAT has visited each of the communities on a monthly basis. At these visits, follow-up tutoring has helped residents learn how to use the various applications, and repairs are carried out where necessary. A relatively low level of equipment failure has been experienced to date, mainly due to the computers and printers succumbing to dust and grit. People are still coming to grips with the need for computer work spaces to be kept very clean. A sense of personal or household ownership and physical care of the equipment is developing.

The computers are being well used — particularly by women and children. Popular activities include use of entertainment applications such as music and video downloads, sharing and printing of photos, school numeracy and literacy applications, online banking and purchasing, social networking and email. The satellite services have been reliable, though the variable speeds can limit the performance of on-line applications.

The project continues until late 2013. Apart from the obvious benefit to people in the three communities involved, the research findings will help to guide the future of computing in remote Indigenous homes.

#### FURTHER READING:

Rennie, E, Crouch, A, Wright, A & Thomas, J 2011, Home Internet for Remote Indigenous Communities, Australian Communications Consumer Action Network, Sydney. Download this report of the baseline study from http:// www.icat.org.au/wp-content/uploads/2012/05/ Home-internet-remote-indigenous-communitiesproject.pdf

Crouch, A. 2012, Home Internet for Remote Indigenous Communities. Technical Progress report June 2012. http://www.icat.org.au/ wp-content/uploads/2012/10/Home-Internettechnical-progress-report-1-10-12.pdf

## REGIONAL TELECOMMUNICATIONS REVIEW: Empowering Digital Communities



Rosemary Sinclair from the Regional Telecommunications Review presenting at the 'Broadband for the Bush 2 forum'.

The Regional Telecommunications Review is established under legislation and conducted every three years to examine the state of telecommunications services in regional, rural and remote Australia. The 2012 Review, also known as The Sinclair Review, after its Chairperson, Rosemary Sinclair, made major findings with regard to access to faster, more affordable and reliable broadband services and the benefits that the digital economy will provide in the delivery of health, education and local government services, paving the way for further local growth opportunities. By Andrew Crouch and Hujjat Nadarajah

very three years, the Regional Telecommunications Review Committee visits capital cities and travels widely in regional and remote areas to consult with community and other stakeholders on telecommunications issues of importance

to them. The 2011/2012 Sinclair Review was informed by 27 stakeholder consultations held all around Australia and included government and community consultations with 222 written submissions.

The Committee reports back to the Australian Government, making recommendations that ensure developments in telecommunications are available equitably to consumers across Australia. Income from the third partial sale of Telstra in 2005 was set

Don't wait for the NBN to turn up. Communities need to prepare for the roll out with a clear idea of what they want to get out of it.

aside to provide a pool of funds to give substance to the recommendations accepted by future governments.

The Sinclair Review is the second such review, and is the first since work commenced to establish the National Broadband Network in its current form. The Review Committee reported to the Australian Government in March 2012 with findings showing strong support in regional areas for the NBN, but a need for more detail on the rollout program and network extension policy.

Issues of special relevance for remote areas highlighted in the Key recommendations of the Sinclair Review included:

- » the need for a program to expand the mobile coverage footprint in regional Australia;
- monitoring the Digital Divide in remote Indigenous communities (access, take-up and usage of services);
- » practical assistance needed to improve digital literacy in regional Australia, by extending the Digital Hubs training program into additional regional areas;
- continuing and expanding the Indigenous Communication Program, with tailored localised training;
- continuing the provision of untimed local calls in extended zones;
- » continuing the Satellite Phone Subsidy Scheme;
- » determining scope to allow remote schools, health facilities and Indigenous communities to access the NBN Interim Satellite Scheme (this recommendation has been partly actioned: remote schools, clinics and local government facilities are now eligible);
- » providing clear information about the applications that can be used effectively over the NBN satellite services;
- » developing and implementing a strategy to raise awareness of consumer safeguards amongst people in regional Australia.

Reflecting on the findings of the Review, some practical advice shared by participants at the 'Broadband For The Bush 2 Forum,' held in Alice Springs in July 2012 included the following:

- 1. Don't wait for the NBN to turn up. Communities need to prepare for the roll out with a clear idea of what they want to get out of it.
- 2. Communities and support services need to get together now to think about opportunities for training and information services that can be accessed now and in the future. A strategic approach is essential.
- 3. There is an issue of removing ADSL when NBN comes into play that was likened to ripping up a bitumen road and putting in a dirt road instead. The Australian Government has indicated its commitment to ensuring that remote communities don't end up with a lesser broadband service than they have right now.
- 4. Satellite broadband is part of the NBN suite of offerings. However, there is still uncertainty on what can be delivered by this technology. To address this a series of case studies could be developed based on real trials and examples citing the prospects and realistic uses of satellite broadband.
- 5. Mobile communications are considered essential for people to run businesses and for communities to have reliable communications for emergencies. However, the issue of mobile coverage is that it is largely approaching its limit of commercial viability.



The Australian Government is embarking on an extensive Digital Television Switchover program, with analog television services to be switched off and replaced by digital services by the end of 2013.

By Daniel Featherstone, General Manager, Indigenous Remote Communications Association (IRCA)

ccording to the Australian Government's Minister for Broadband, Senator Conroy, the Digital Switchover is 'the biggest technological change in broadcasting since colour TV was introduced in this country more than three decades ago' (Media Release 25/6/12). Remote Indigenous communities will now receive 17 mainstream television channels plus some open narrowcast channels. The big change is that households in remote and regional communities currently supported

by self-help retransmission sites — through which communities are able to locally broadcast community generated programs — will now receive TV direct from the VAST (Viewer Access Satellite Television) digital satellite by a Direct-To-Home (DTH) model with a satellite dish on the roof. Selfhelp TV transmission equipment and the current Aurora satellite system will be switched off at the end of 2013.

#### Loss of Community Broadcasting

For communities serviced by Remote Indigenous Broadcasting Services (RIBS), this means the end of being able to broadcast community TV content in local language.

2012 marks the 25th anniversary of the Broadcasting for Remote Aboriginal Communities Scheme (BRACS). Based on early broadcast trials in Yuendumu (NT) and Ernabella (SA) and recommendations in the 'Out of the Silent Land' report (Willmot et al, 1984), BRACS was introduced in 1987 to enable remote Indigenous communities to produce and broadcast their own radio and video content. Community broadcasting was described as 'fighting fire with fire', aimed at keeping language



Remote community residents filming and producing their own content on country, showing Indigenous culture and viewpoints.

and culture strong against the tide of mainstream TV being introduced via the newly-launched AUSSAT satellite.

There are now over 147 Remote Indigenous Broadcasting Service (formerly BRACS) communities across Australia, able to broadcast community-produced radio and TV content, supported by eight remote indigenous media organisations (RIMOs). Ironically, the new VAST digital satellite will be delivered Direct-to-Home (DTH), with no funding options for upgrading selfhelp TV re-transmission facilities to digital, effectively abolishing BRACS community TV.

There are also other implications regarding cost of ongoing maintenance and viewing options. The need for a cable link to a satellite dish means remote viewers can no longer watch TV outside of a house or in sorry camp.

### Direct-to-Home and the Satellite Subsidy Scheme

Rather than upgrading the existing RIBS and self-help re-transmission facilities from analog to digital, the Digital Switchover Taskforce (DST) chose the Direct-to-Home (DTH) model, arguing this is the most cost-effective way of providing an equivalent range and quality of service to remote viewers as their city counterparts. It also reduces the ongoing maintenance costs by transferring them to the householder after the one year equipment warranty period. The Government has introduced a Satellite Subsidy Scheme (SSS) to assist remote area householders to make the transition to the new digital services.

#### Under the SSS:

- » The government is fully funding the installation of one satellite service per household: a satellite dish, set top box (STB) and wall socket.
- Additional services can be installed at householder expense (approx. \$280 per STB and about \$135 per wall outlet).
- » Non-residential buildings (e.g. community office, store, school, media/arts centres) are not covered under SSS but can have services installed during the SSS installation period, saving on contractor travel costs.
- » New houses completed to lock-up stage are eligible for SSS.
- » Houses in homelands that do not currently receive self-help TV transmission are not eligible for SSS.
- » However, if they have an existing Aurora satellite dish, this can receive VAST by replacing the Aurora decoder with a VAST settop box.

- » People in non-SSS dwellings who are on Centrelink pensions (Age Pension, Disability Support Pension or Carer Payments) may be eligible for the Household Assistance Scheme (HAS) to help cover the cost of satellite equipment.
- The SSS rollout has already been carried out in Queensland. It is currently underway in South Australia with Local Community Contacts (LCCs) collecting lists of households to have satellite equipment installed under the scheme. NT and WA communities were required to opt in to the SSS in early 2012. The installations will be completed in WA by mid 2013 and in remote central and eastern Australia in December 2013 (Source: Media Release 25/6/2012).

#### Maintenance issues:

While there is a one-year warranty on equipment or installation defects, further maintenance of the satellite equipment or set-top box is at the householders' expense, including technician travel costs.

In remote communities, there is a high risk of damage to satellite equipment, STBs and cabling. Householders cannot afford the high costs of contractors, including travel from a regional centre, to undertake

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#### Key points

- » The new satellite digital TV service called VAST provides 17+ channels for remote Indigenous Communities.
- Analog TV re-transmission services via community self-help facilities will cease after December 2013. Upgrade of these facilities to digital will not be funded except at the community's expense.
- » Unless a community can afford to upgrade its re-transmission facility, to get digital TV in future each household will need to have a satellite dish installed, a wall outlet and a set-top box. This is called Directto-Home (DTH).
- The government will pay for one new Directto-Home installation per remote community household under the Satellite Subsidy Scheme (SSS). The equipment will be maintained under warranty for a period of 12 months.
- » Extra outlets and set top boxes and can be added during SSS rollout at householder expense.
- » People who are not eligible for SSS, but are on Centrelink pensions, may be eligible for assistance under the House hold Assistance Scheme.
- » With DTH, households will no longer get local community TV but will get ICTV and NITV channels.
- » To find out more about the Satellite Subsidy Scheme, visit: www.digitalready. gov.au or contact your digital switchover Local Community Contact.



Belle directing a KP feature in a river bed.

repairs. This will potentially leave people without a television service.

The recent Indigenous Broadcasting and Media Sector Review (the Stevens Review) recommended that remote Indigenous communities have their equipment and services maintained for free (Rec. 38). The Digital Switchover Taskforce proposes that community house owners, being state government, shires or land councils, be responsible for ongoing maintenance. However this has not been agreed and no arrangement for ongoing maintenance has been established at this time.

#### **ICTV & NITV**

In 2001, the sharing of video content between regions led to the establishment of Indigenous Community TV (ICTV), initially via Imparja's second narrowcast channel 31. This grew to a full-time remote service by 2005 and became very popular with community audiences. However, with the launch of National Indigenous TV (NITV) in 2007, the Imparja channel was reallocated, leaving ICTV without a channel.

In 2009, ICTV was re-established as a weekend service on the WA Government's Westlink channel 23 on the Aurora satellite. Many communities currently switch from NITV each weekend to receive the ICTV service.

Following lobbying from the remote media industry over several years, Minister Conroy recently announced that ICTV will have a full-time open

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The government will pay for one new installation per household under the Satellite Subsidy Scheme (SSS).

narrowcast channel on the VAST satellite, making it freely available to reach remote communities from early 2013.

A government directive for NITV to merge with SBS from 1 July 2012 has meant that NITV now has a digital channel on the VAST satellite as well as free-to-air terrestrial broadcast in towns and cities.

#### Conclusion

Arrangements for ongoing maintenance need to be resolved if remote Indigenous householders are to have sustainable access to TV services.

IRCA will continue to advocate for at least an additional digital transmission channel to be allocated to enable the continuation of community broadcasting of language and culture services for a local audience.

Following the Direct to Home digital rollout, communities can still apply to the regulator for approval to upgrade their analog self-help facility to local digital transmission at a future time.

Out of the silent land / report of the Task Force on Aboriginal and Islander Broadcasting and Communications, Chair Willmot E, Australian Government Publishing Service, Canberra, 1984

FOR FURTHER INFORMATION ON: The Digital Switchover: http://www.digitalready.gov.au/Home.aspx

The Satellite Subsidy Scheme: http://www.digitalready.gov.au/Households/ government-assistance/satellite-subsidy-scheme.aspx The 'World's Tallest Totem Pole', (127 ft, 7 inches), located in Beacon Hill Park, Victoria, British Columbia. This Totem pole was carved by Mungo Martin, David Martin, and Henry Hunt. It was dedicated on the 2nd of July, 1954.

> Connectivity empowers First Nations peoples

INTERNATIONAL

Canada's First Nations have the same challenges and opportunities as we do when connecting to the virtual world. We learn from First Nations Technology Council CEO Norm Leech about how they are rising to the challenge of connecting their First Nations communities to technology and the Internet.

As part of a scholarship from the lan Potter Foundation, CAT staff member Andre Grant recently visited Canada and met with Norm Leach.

Interview by Andre Grant and Andrew Crouch with Norm Leech. Written by Hujjat Nadarajah

he First Nations Technology Council (FNTC) in British Columbia, Canada is a Canadian Aboriginalowned organisation with a mandate to assist First Nations with ICT issues. FNTC's formation focused on increasing connectivity in remote Canadian Indian reserves as well as a desire by many of the province's Chiefs to see communities benefit from access to the world through the Internet. FNTC provides essential human services and advocates for those communities that remain unconnected.

'Technology as a tool helps the communities with all the challenging areas that First Nations are tackling — like unsafe drinking water and uncontrolled development in their territory ' says Norm Leech, CEO of FNTC. Norm served as Chief for five years and then as Administrator for three years of the T'it'q'et community of the St'at'imc Nation.

#### Accessibility in a First Nations community

In British Columbia, Canada, there are 203 First Nations communities

across the province. The size of a community ranges from a dozen people living in a small community to 3,000 people in a large one. A community may have three to four sub-communities or sub-divisions — some on opposite sides of mountains that are several thousand feet high.

Typically, a community has an office that is connected to power, phones and the Internet. The office is responsible for managing health programs, education programs and infrastructure of the community, maintaining roads, housing, water, sewerage. It is an entire level of functioning local government as we in Australia understand it, but run by First Nations people. 'Not all homes in the community would be connected to the Internet. In terms of mobile phone coverage, the more distant remote communities have limited coverage,' says Norm.

'More than half of the 203 First Nation communities have mobile phone coverage and access to Internet, at speeds that are better than a dial-up connection. Approximately fifty communities still lack high-speed Internet connectivity.



# PHOTO

Community member participating in planning at Cowichan Tribes First Nations BC , Canada

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The real work of communities is about improving the life of communities: helping the elders, safe housing, getting community development happening and accessing better healthcare. Technology can really help in all the planning and decisionmaking for these areas, if its used properly.

#### **Raising awareness of ICT** is important

A key service FNTC provides is training and education to First Nations peoples so they understand the many technologies that are available and can choose the right technology for their needs.

'We make a case that technology is not the answer, but it can used to advance the real work in communities,' says Norm.

Structured training is provided because '...there are some potential negatives if we don't,' says Norm. 'People can be afraid about becoming disconnected, access porn, or be subject to victimisation on the Internet. Awareness and education is the best defence against these risks.' For example, Norm points out they raise awareness of the risks by providing simple solutions '... don't



give a child a computer to use alone in their room — leave it out in the living room; and teach them basic rules like not giving out your phone number or your address when you're chatting online. These people are strangers that you're chatting with on the Internet, so precautions are needed ... it's a process of raising awareness, this is the best approach we find,' he adds.

#### Annual First Nations Technology Conference

The annual First Nations Technology Conference held in British Columbia is the highlight of the FNTC's work. The Conference has been running for the past six years, and each year the number of participants continues to grow. The majority of the people who attend are from First Nations communities. Industry and Government representatives also attend. It is an opportunity for industry to showcase and network their products and services. 'The space serves to get everyone together, ask questions and learn from each other and talk to each other. 'I call it a geek fest, but really it's a great opportunity to understand what others are doing, and ramps up enthusiasm and potential,' says Norm.

### Technology as a means of empowerment

The FNTC has developed several tools to support communities in dealing with technology. The 'community technology planning toolkit' was an attempt to create a template for communities to make good use of technology to meet the requirements of a First Nations community.

'We found determining what technology to use was labour intensive for the community. So we created a network of community planners to do this work. We have other toolkits in place now — for example in digitalisation, where we send out equipment to communities to record language, and transfer archival tapes to a digitised version, to preserve some of our endangered languages,' says Norm.

Overall, the feeling you get when talking to Norm is that First Nations communities, through organisations like FNTC, are systematically empowering themselves to take on more responsibility, and technology is helping them achieve this. Norm reflects how, 'it wasn't that long ago that we were colonised here, but there is a cultural memory of the time before colonisation where each community had all the responsibility to manage their territories, use them, protect them, defend them — all in a good way.

'We know that we used to be completely self-reliant, we see technology as one of the tools that can help us achieve that freedom again,' says Norm.

'For us First Nations people, we see this as a sacred responsibility that we have for our Territories and we haven't given up,' Norm adds.



## The NBN: a bigger eye in the sky

The quality, speed and download rate the National Broadband Network will provide for remote communities is an issue currently under debate in remote Australia.

By Dr Tony Eyers

hile a Final Satellite Solution looks promising, the Interim Satellite service is

somewhat limited in terms of what it can provide, and whether this works or not for remote community users remains to be seen.

The National Broadband Network (NBN) plans new broadband infrastructure for all Australians. 93% will receive a fibre connection to their premises and 4% will get a fixed wireless broadband service. The remaining 3%, the most remote, will receive a new NBN satellite broadband service. Satellite broadband is already widely available. A remote community media centre, such as the one located at Irrunytju (Wingella), may have several satellite dishes; some for TV, others for broadband. Some remote communities have shared Internet facilities, fed by one or more satellite broadband services.

This satellite broadband infrastructure is expensive, however the Australian Broadband Guarantee (ABG) program has subsidised much of the service cost, so that satellite broadband subscriber prices are similar to ones for fixed broadband in metropolitan areas.

While the prices may be similar, the services are not. Satellite broad-

band has three major drawbacks compared to fixed broadband: lower data rates, increased delay, and lower monthly download limits. In particular, satellite broadband monthly download limits are generally less than 1/10 of their fixed line counterparts. Worse still, this small monthly satellite capacity allocation may be shared between many remote community residents.

Also, satellite link delay, often more than half a second, severely degrades voice calls. Low cost Voice over Internet Protocol (VOIP) services are common for fixed broadband subscribers, and are an attractive option for remote communities. However, satellite link delay limits their usefulness.

The remote community satellite broadband issues outlined above are well known, and were confirmed by several organisations at the July 2012 Broadband for the Bush forum in Alice Springs. Many speakers doubted that the NBN satellite broadband services would be much different.

Given these concerns, what will the NBN provide for remote communities?

Two NBN satellite broadband services are proposed. The first, known as the Interim Satellite Service (ISS), has been available since mid 2011, and is managed by Optus, with additional satellite capacity from IPSTAR. The maximum downlink rate is 6 Mbps, maximum uplink is 1 Mbps. 20 Gigabyte/month plans are available for less than \$100/month.

While NBN Interim Satellite Service is a significant improvement over previous satellite broadband services, availability is limited. Priority is given to subscribers who have never had an ABG satellite service, or have an ABG service more than 3 years old.

The second NBN satellite broadband service, sometimes called the Final Satellite Solution, will be available from 2015, and plans to cover 200,000 remote subscribers. It will operate over two new satellites, currently under construction for NBN Co (the company building the NBN).

These new satellites operate in a different frequency band, called the Ka Band, with much greater capacity than existing satellite frequency bands. One hundred and one 'spot beams' will cover Australia, each beam providing 700 Mbps downlink/200 Mbps uplink, shared by around 2000 subscribers.

The resulting NBN satellite service will provide maximum downlink rates of 12 Mbps and maximum uplink rates of 1 Mbps. Higher rates may be available in future. Also, monthly download limits of 60 Gigabytes will be feasible, more than 10 times most current satellite download limits. Remote community residents will appreciate this change the most. In short, the NBN satellites will

provide a bigger eye in the sky.

An additional NBN satellite service feature is 'Quality of Service'. In particular, an upper delay bound guarantee of 350 milliseconds will be provided for a small portion of the NBN satellite traffic. This high priority NBN satellite traffic stream (known as Traffic Class 1) can be allocated to voice services. Due to the relatively low delay, phone call quality over this high priority NBN traffic channel will be noticeably better than existing satellite based phone services.

The NBN satellite broadband greatly improves capacity for remote communities. However the NBN is just a pipe, albeit much larger than previous ones. Remote community services enabled by this new pipe will require further study. ■ www.tektel.com.au



## Key opportunities in ICT

#### **1** IMPROVING LIVES THROUGH USER-GENERATED CONTENT

Indigenous people's lives are changing through user-generated content like pocket schools for literacy / education, NT Mojos creating citizen journalists, ' Thumbs Up' healthy eating programs and student-generated podcasts in language.

http://ntmojos.indigenous.gov.au www.thumbsup.org.au https://pocketliteracy.com



#### 2 SHOWCASING INDIGENOUS CULTURE ONLINE

Indigenous people aren't just being swamped by the mainstream culture, they're using their own culture as well and putting it up on the Web. Distribution of local music online, through sites like IndigiTube promotes local culture.

#### www.indigitube.com.au



#### **3** DIGITAL TECHNOLOGIES HAVE GENERATED AN EXPLOSION IN MUTLI-MODAL LITERACY

MOODLE (a learning management system) is a means of flexible learning using 'second life' applications. It is already generating 80-100% attendance rates amongst remote Indigenous students. https://moodle.org

#### **4** BEING CONTACTABLE AND TAKING BACK CONTROL

Having a single public phone in a remote Indigenous community is a real hassle. Internet and mobile connectivity creates more autonomy and independence and Indigenous people living in remote Australia are discovering this to their benefit. Residents on community with Internet access now say, 'we don't need to run to answer the public phone anymore as people will send an email if they need to reach us.'

#### **5** REMOTE AUSTRALIA HAS MUCH TO OFFER THE NBN

The ongoing viability of remote communities and towns will increasingly depend upon effective broadband access. Stakeholders in remote Australia have much to offer NBN Co and government planners. Our participation in the national digital economy, in terms of social, economic and cultural outcomes, can inform how greater benefits for remote Australia can be delivered.

#### **6** E-HEALTH CARE IS ON THE RISE

Systems like Citrix work quite well in remote communities, if your comms system is reliable. Citrix technology helps health care organizations to modernize systems, improve application accessibility and mobility throughout their organizations, lower total IT operations cost and increase security, regulatory compliance and overall patient confidentiality. Quite a number of major remote health clinics that are on ADSL are using this Citrix effectively. www.citrix.com



#### **D** ACCESS INCREASES UPTAKE

Young Indigenous people are using technologies at a faster rate; they observe, collaborate, imitate, and by trial and error get tech savvy. This uptake can be channelled into e-learning, beta-testing for games and enterprise development.

#### 8 INNOVATIVE TECHNOLOGIES FOR REMOTE LOCATIONS TRIALS INCREASE ACCESS AND AFFORDABILITY

Technologies for terrestrial delivery and last-mile sharing should be trialed in remote locations across Australia, to increase access and affordability. e-learning and enterprise development.