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Indigenous Remote Communications Association

IRCA Submission to the Regional Telecommunications Review 2011-12

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BACKGROUND - REGIONAL TELECOMMUNICATIONS REVIEW 2011-12

The 2011–12 Regional Telecommunications Review (RTR) seeks to build upon the progress achieved since the 2008 review. In doing so, the Minister has asked the committee to have particular regard for the opportunities that the NBN creates for the emerging digital economy to improve the delivery of:

- health and education outcomes
- business efficiencies and opportunities
- growth in local economies
- government services and programs, including local government services

The committee is also interested in other telecommunications issues that are important to regional, rural and remote communities. These include:

- the communications needs of Indigenous Australians, particularly those that live in rural and remote communities
- developments in the terrestrial and satellite mobile phone sector
- the consumer concerns of people and businesses in regional, rural and remote Australia.

EXECUTIVE SUMMARY

The Indigenous Remote Communications Association (IRCA), as the peak body for remote Indigenous media and communications, is pleased to respond to this Review. IRCA represents the interests of people living in remote Indigenous people throughout Australia, with a membership made up from the 147 RIBS communities in Australia, supported by eight Remote Indigenous Media Organisations (RIMOs) (Further information on IRCA In Appendix 1).

This submission refers primarily to the communication needs of remote Indigenous people and communities, and the needs of remote Indigenous media organisations (RIMOs) in production and distribution of media and supporting improved communications access within their regions. Appendix 2 provides an overview of the specific context & issues for remote Indigenous communities.

Effective and accessible communications are essential for people living in small disparate communities to overcome the inequities due to remoteness[1]. Most remote communities lack the basic services that other Australians take for granted. Telecommunications, ICT and media communications can play a crucial role in improving access to these services (health, education, banking, Centrelink, justice, employment and enterprise opportunities etc), especially as human services are withdrawn and service delivery increasingly moves on-line. In the convergent digital environment, communications can also provide significant opportunities for Indigenous social and economic development, training and employment, connecting up separated families and supporting the maintenance of Australia's unique Indigenous culture and languages. The future viability of communities will be largely determined by the quality of communications infrastructure connecting them.

However, telecommunications in many remote areas is still desperately inadequate, with a majority of remote Indigenous households still unable to access basic telephony services let alone ICTs or Internet. For many remote Indigenous people a home telephone, or preferably mobile telephone service, is the highest priority to enable communications with friends and family across vast remote regions. Despite the USO and many telecommunications infrastructure programs over the last 20 years, there still exists a vast digital divide, both in backhaul infrastructure and household access, for most remote Indigenous communities.

IRCA sees the rollout of the National Broadband Network as a critical time to address all of the communications needs of remote communities. Broadband services should be "high-speed, symmetric, affordable, reliable and ubiquitous" (Dr Ian Opperman, CSIRO). Broadband delivery to remote areas should enable symmetrical upload/download and sufficient speed for two-way real-time applications such as videoconferencing. Despite 25 years of building a remote indigenous broadcasting and communications sector to provide culturally appropriate applications, current planning for the NBN and Digital Switchover threaten to reduce the capacity of remote Indigenous communities to manage their own communications and broadcasting. They will transfer from centralised management, maintenance and cost-sharing of communications and television services towards individual household management and expense, with at least two satellite dishes required for each dwelling in order to access the services.

CURRENT SITUATION

Under current NBN planning, 93% of Australians will have access to the fibre-to-the-home solution with symmetric speeds of up to 100Mbps, while 3% of Australians living in remote areas of Australia will receive a satellite solution at asymmetric rates of 12/1Mbps and 4% in the vicinity of regional centres receiving a wireless solution also at 12/1Mbps. There is real concern that this discrepancy will lead to a two-speed economy, reducing the ability to provide two-way applications needed for remote health, education, justice and media services, and will effectively limit the economic and social development opportunities in remote Australia. Further, the latency and high

[1] ATSIC identified communications as "central to the future of the Indigenous economy" and urged that it "must be treated as the essential fourth service (after housing, power and water)." (p17, ATSIC submission to Regional Telecommunications (Estens) Inquiry 2002)

operational costs of the satellite solution will most likely exclude mobile telephony from being commercially viable in remote areas.

IRCA strongly urges the use of terrestrial broadband delivery (i.e. fibre optic or microwave) rather than satellite backhaul delivery for remote areas to reduce ongoing costs and latency, improve reliability and provide future capacity and address current infrastructure deficits. In particular, IRCA urges that existing fibre networks in remote areas (installed through previous government-funded broadband programs) be linked into the NBN and be built upon to extend the reach of terrestrial broadband. Regional nodes or exchanges in remote areas should conect with the national network, enabling scalable capacity and outreach to nearby communities and homelands via wireless solutions. State/territory governments, local government and regional agencies should be consulted to become partners in further extending the reach and outcomes of the NBN.

IRCA urges a long-term usage analysis prior to selection of technology for remote areas, taking into consideration current and future technology limitations (latency, upload/download speeds, contention ratios, real-time streaming capability and high-speed two-way applications) and costs (consumer usage costs, maintenance costs, download caps, ability to aggregate usage), network management needs, and last-mile delivery systems. This analysis, which has not yet been done by NBN Co, will help to determine the most appropriate backhaul technology to meet current and future needs for remote communities.

Equivalent levels of infrastructure are the key to equivalent access and reducing the digital divide. Without adequate infrastructure in place, Indigenous and non-Indigenous people in remote areas will not be able to access on-line and tele-visual services available to other Australians, which are necessary for remote service delivery. Remote people are rapid adopters of new digital technologies, mobile/smart phone telephony and ICTs when these are available. In order to bridge the digital divide, remote areas need not only broadband infrastructure and last-mile distribution, but also affordable access to ICT facilities, training programs, technical support and appropriate on-line services and relevant content.

Under current infrastructure planning and regulatory frameworks for the NBN, IRCA believes that the digital divide for remote areas is likely to be widened not closed. Without adequate telecommunications infrastructure (high-speed broadband, last -mile delivery, mobile telephony), in remote communities will result in a two-speed digital economy. Remote Australia risks being left behind within the broadband environment.

IRCA also has concerns that the renewed Universal Service Obligation[2] and Extended Zones contracts[3] have not been updated to reflect current telecommunications technologies and needs, with the opportunity to update the USO this year missed by limiting the scope of the review. We strongly believe the USO should include mobile telephony, pre-paid services and Internet access in remote areas where commercial market imperatives fail. However, with all government funding for telecommunications now funnelled into the NBN, there is no capacity for addressing the gaps between the NBN and the USO, which are most apparent in remote indigenous communities.

IRCA is happy to provide further documentation in support of this submission upon request. We look forward to the outcomes of this review.

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[2] To be managed by Telecommunications Universal Service Management Agency (TUSMA) from July 2012

[3] Under the agreement between the Commonwealth and Telstra for the provision of improved telecommunication services to customers living in the remotest parts of Australia, which commenced in July 2001 and operates for a period of 10 years, Telstra is required to provide:

- un-timed calls at the local call rate in the extended zones;
- enhanced services, including the offer of an always-on internet access service, improved dial-up access speeds and improved timeframes for the connection of new services in the extended zone; or
- an upgrade of the telephone network in the extended zone..

RESPONSES TO RTIRC QUESTIONS

1. The digital economy

Question 1. How is the use of telecommunications services; and information and communication technology (ICT) evolving in different industry sectors and what is the impact of these changes in regional Australia?

Remote Australia is increasingly reliant on telecommunications and ICT for accessing essential services that are more physically accessible and taken for granted in other parts of Australia. Where fibre optic cable has been rolled out in remote areas, the uptake of applications such as videoconferencing, mobile telephony, server-based (thin-client) networking across regions, and internet access facilities has become possible, radically changing both service delivery and Indigenous access and uptake of new communications tools. However, many areas still do not have any reliable broadband access, especially with the Extended Zones satellite network (rolled out on 2002) severely over-subscribed, leading to low and unreliable speeds. Additionally, household access to, and affordability of, telecommunications remains a big issue for most remote Indigenous people.

Other than POTS telephony, some of the telecommunications services and applications that are being used in Indigenous communities (where backhaul infrastructure allows) include:

- **Mobile telephony** – there is high uptake of mobile phone subscription by remote living people where it is available, including for accessing internet and on-line services (eg-banking), SMS and on-line communications (especially Facebook) and media production, viewing/listening and sharing. Mobile telephony is an ideal primary telephony service fro remote Indigenous communities, where people are highly mobile, live in shared households (making a single fixed line service problematic), and where last-mile copper networks are often incomplete. However, the primary issue with mobile telephony is the high cost of usage. (See Q2 for more detail). There has been extensive research (ACA 2004, Tangentyere Council 2007, Brady indicating that this is the most appropriate and well-utilised communications technology by remote Indigenous people where it is available.
- **ICTs**- Computers are becoming an increasingly normal part of life for indigenous communities, being common in most workplaces (offices, school, store, media or art centre etc), IT access facilities (e.g. Telecentres in WA, PY Ku centres in APY Lands of SA, Indigenous Knowledge Centres in NT and Queensland etc) and with most children gaining IT skills and familiarity in schools. Programs like Networking the Nation, Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC), Backing Indigenous Ability and the current Indigenous Communications Program have helped to provide ICT facilities, internet access, IT training and technical support and on-line content in remote communities. Several remote media organisations have played a key role in delivering these programs and have built ICT into their scope of activities. However home ownership of ICTs and internet access is still relatively low. While there are cultural and social factors involved in Indigenous uptake of ICTs (e.g. requires English language, western–value embedded content, not user-friendly, inappropriate content, unsupervised communication) there is generally an enthusiastic and rapid uptake "limited only by a difficulty in accessing the technology due to cost, isolation, poor telecommunication infrastructure, low computer literacy and lack of awareness" (Dyson 1993[4]).
- **Videoconferencing** - Videoconferencing is highly popular in remote communities as a communications tool (where available), enabling large groups to be involved and enabling link-up with distant family members who are incarcerated, in hospital, on renal dialysis or in aged care facilities. Videoconferencing is increasingly being used for remote service delivery for education, e-health, court hearings, meetings and training delivery, reducing

[4] Dyson, Laurel Evelyn (2003) Indigenous Australians in the Information Age: Exploring Issues of Neutrality in Information Technology , presentation to European Conference on Information Systems

costly travel to remote areas. However, the equipment costs and ISDN costs (reliant on fibre backhaul) are currently prohibitively expensive for general usage. IP videoconferencing is a more affordable solution if high bandwidth broadband is available to communities at affordable rates. Alternatively, on-line services such as Skype are more affordable, although the quality is not sufficient for large group interaction.

- **Digital Media and Archiving** – Remote media organisations are using digital media technologies to produce and distribute Indigenous community media content, enabling self-representation and language and cultural maintenance for remote Indigenous people. Also, through digitisation of extensive collections of analog recordings and repatriation of other institutional collections, community-managed digital archive projects are being used to make these records accessible back to communities (as against central repositories). A good example is the Ara Irititja Archival project, a community access digital archive project, developed in the APY Lands of South Australia but used in many other regions of remote Australia. Where broadband capacity allows, this and other projects are moving to on-line delivery and upload. See article *Plugged in: Remote Australian Indigenous youth and digital culture* (2010) by Dr Inge Kral of Centre for Aboriginal Economic Policy Research at The Australian National University for examples of how young people are engaging with new digital media technologies and using non-school environments for literacy and learning.
- **On-line Media** – As ICTs become more accessible and people develop IT skills, on-line media (via YouTube, Facebook, iTunes Store, and other sites) is becoming increasingly popular. IRCA and Indigenous Community TV have established an Indigenous media portal called IndigiTUBE, which is becoming very popular. However, limited download caps under current satellite plans (up to only 1GB per month under EZ satellite plans, non-shaped) and high excess usage costs has led to exorbitant bills. Even as bandwidth increases under NBN's satellite broadband solution, the cost of downloads will limit IPTV opportunities in remote Australia.
- **Digital TV Switchover**- Switchover to digital Television via a Direct-to-home model is currently threatening to extinguish self-help rebroadcasting services in remote Australia and the capacity for insertion of community-produced content in language. Also, the remote-produced Indigenous Community TV service will no longer be able to reach remote audiences via satellite without a dedicated channel on the VAST satellite. The recent Stevens review into the Indigenous Broadcasting and Media Sector proposed that ICTV become an on-line portal, but with less that 2% of remote indigenous households with internet access, this is not likely to be a viable alternative to broadcast television for many years to come.

See IRCA's application to the 'Inquiry into the Role and Potential of the National Broadband Network' (February 2011) for further details on applications used in remote communities.

Cultural and Social Impacts: With technological and ideological change happening very quickly, many senior people in remote communities are concerned about the potential negative impacts of ICTs on cultural authority and language. The increased exposure of young people to western media, values and commercialism can increase the generational divide as their interest in the traditional culture of their grandparents wanes and they aspire to the 'universalist youth culture' portrayed through mainstream media and internet (Kral 2010).

Question 2. What is needed to extend and accelerate the role of telecommunications services and ICT in delivering benefits to regional economies?

Inclusion of Existing Broadband Infrastructure in NBN

Over the last 15 years, there have been numerous government programs aimed at increasing fibre optic network infrastructure into remote Australia (Networking the Nation, Broadband Connect program, Coordinated Communications Infrastructure Fund etc), resulting in many remote regions now having fibre optic backhaul. However, under the $12billion NBN deal with Telstra, much of this was not purchased for inclusion in the NBN. Instead, NBN is proposing a satellite solution as

the only backhaul solution for remote areas, rather than build on and expand out from the existing fibre networks in remote areas. IRCA see this as a retrogressive step that will ultimately limit the remote Australia's access to much of the capability being offered by the NBN.

Fibre optic cable (owned by Telstra) is already rolled out to many remote regions including the APY Lands in SA, Ngaanyatjarra lands in WA, many communities in NT (eg Hermannsburg, Yuendumu, Lajamanu, 18 communities in Arnhemland) and Cape York in north Queensland. This has enabled capacity for ADSL 2+ and ISDN services in these communities as well as Next G mobile telephony in some larger communities. Currently, much of this existing fibre optic cable to remote communities is not included in the NBN plan to upgrade to 100Mbps, with these communities to be moved back to a satellite solution.

IRCA urges that existing fibre optic networks in remote areas should be added into the NBN planning to extend the reach of terrestrial broadband. The coverage area of terrestrial broadband could be extended further by branching out from hub ('node') sites to the surrounding cluster of communities using wireless (microwave) technologies.

Microwave can provide a relatively low latency and high bandwidth traffic flow, provided distance to the 'node' is not too long. Remote areas are familiar with the use of microwave for telephony and, while there are occasional outages, a well-designed network can build in redundancy loops to avoid this. Telstra towers, used for microwave telephony, are already in place in many areas.

For more information, see the powerpoint presentation 'A Remote Perspective' (Appendix 4) and press release from the 'Broadband for the Bush' forum hosted by IRCA in conjunction with Desert Knowledge Australia on 30th June 2011.

Terrestrial vs Satellite Broadband Delivery

Terrestrial broadband infrastructure (fibre optic, wireless) has the following characteristics:

- Low latency;
- Robust infrastructure, more reliable, low maintenance;
- Capacity for high speed two-way streaming;
- More affordable services and download usage;
- Ability to use as backhaul for mobile telephony, fixed telephony, and network extension.

The key issues with satellite delivery are:

- Latency (delay time due to signal travelling 28,000km each way), affecting real-time applications such as videoconferencing, VoIP, and other two-way streaming and server-access applications;
- Speed- the12Mbps down, one Mbps up- these are peak speeds and will be significantly slower in reality once contention increases;
- Lack of symmetry- reduces ability for use of two-way applications and slows access to remote based servers;
- Cost (while wholesale rates for basic service costs are fixed, the download costs will be significantly greater when using high-data application such as videoconferencing, IPTV, movie downloads and so on);
- Satellite delivery system may be limited to broadband services only and not address the critical issue of lack of telephony services;
- Loss of signal in heavy cloud, cyclones, smoke or dust, potentially leaving sites without access to safety information when required (e.g. during cyclones or storms, common in the Top End); and
- Higher incidence of outages and delays while awaiting maintenance- Satellite dishes tend to require more maintenance than other technologies, especially in coastal regions with corrosion and high winds.

Last Mile Distribution- the Key to Access

While ADSL-2 is the preferred form of last-mile distribution, due to incomplete copper networks in many remote communities and homelands, wireless transmission (WiFi, WiFi Mesh or WiMax) would provide effective last-mile distribution and enable affordable access to online services in remote communities. The small size of most remote communities, with existing central broadcast towers, makes them ideally suited to wireless internet delivery. Ethernet over Power is another option worth exploring for small communities with a single electricity cable run.

Shared WiFi networks are being trialled in the Ngaanyatjarra Lands with successful outcomes, including an increase in home computer usage, connection using smart-phones, and increased ICT awareness and skills. Shared WiFi enables after-hours access to internet services and provides access for visiting support staff in community, who would otherwise have no connectivity for email or on-line services.

WiFi 'hot spots' enable affordable community access to internet services, with users paying for what they use (with pre-paid time or download allocation) rather than pay monthly bills and risk disconnection.

If there is sufficient bandwidth, reliable throughput ('Busy Out Throughput') and affordability, this would also enable mobile communications using Voice-over IP telephony (VoIP) - a key communications mode in the future.

Address Unmet Need for Basic Telephony and Mobile Telephony

There is still huge unmet demand for basic telephony services in remote Australia, which is not being factored into the NBN rollout. The primary telephony access in most remote communities (under the USO) is still via public phone, with equipment failure leading to a regular lack of access to basic telephony.

Mobile telephony (3G or 4G) is more appropriate than fixed line telephony for remote areas because:

- lack of last mile copper networks and lead-in to many households;
- high mobility of remote people (enables portability of phone/contact);
- allows an individual phone number rather than shared phone/ bill in large households;
- provides a platform for communications, internet access & on-line services (e.g. banking), media creation and sharing;
- can be on a pre-paid service rather than monthly bills;
- limited access to ICTs and internet connectivity.

In remote communities where mobile telephony has been installed, it tends to be more popular and utilised than fixed phone services. However, the primary issue with mobile telephony is the high cost of usage. Recent research by Laurel Dyson undertaken in Hopevale (Indigenous community in far North Queensland) where a mobile tower had been installed in 2008, indicated that 55% of people owned or shared a mobile phone. The average monthly usage costs were $378, compared with about $47.95 for a fixed line phone for the same number of calls, or about $45 using the public phone. For remote Indigenous people, the high costs of mobile are prohibitive, with many people owning phones but not able to afford recharge cards.

IRCA proposes that mobile telephony be included under a USO or Extended Zones arrangement to ensure affordable access and capped call rates and free mobile calls to 1800 numbers. This would ensure that telecommunications companies provide services for people living in remote areas even where there is no commercial incentive for them to do so.

With television re-broadcast planned to become redundant under digital switchover, existing self-help broadcast facilities (tower, broadcast room, power conditioner etc) should be considered for providing localised mobile coverage (and/or VoIP telephony using WiFi form the same facility). This would reduce the primary cost of tower construction, facility maintenance and power conditioning and backup.

Question 3. The committee would like to hear from businesses and organisations about their participation in, experiences of, and expectations about, the digital economy. Examples could relate to specific sectors such as agriculture, mining, manufacturing or retail; business-to-business activities; productivity; teleworking; and the development of new knowledge-based industries.

With convergence of media and ICT, the ability of remote media organisations to deliver media services and training, and connect communities to regional communication networks (intranet, radio broadcasting, IPTV, videoconferencing) is determined by the quality and affordability of broadband services.

In some regions where fibre optic cable has been rolled out and exchanges upgraded there has been a rapid uptake in ICT access and use of on-line digital media and archiving (mostly via IT access centres), IT training participation, mobile telephony, and videoconferencing for regional and long-distance communications. The outcomes for these communities are pronounced in terms of community awareness of ICT capability, skills development and active participation in the digital economy (on-line sales from art centres, e-tourism, uploading of local media content to iTunes Store, Facebook, YouTube, indigiTUBE etc).

Remote Indigenous media organisations (RIMOs) are able to produce and distribute local productions and community service announcements over multiple platforms (radio, video/TV, web) and are becoming proficient in Web 2.0 applications. See PAW Media's website for examples of the on-line media delivery being developed by RIMOs. The remote media sector has also been exploring use of IPTV technology for sharing of community content regionally and nationally, but this requires high-speed broadband, last-mile distribution and low download costs to effectively reach remote Indigenous audiences.

The large majority of Indigenous people in remote communities still have limited access to broadband, computer facilities and training, or even basic telephone services. In those regions still reliant on HCRC telephony and 2-way satellite internet, only basic internet access is possible. Remote media organisations have reported that many community radio studios still cannot link via codec to regional radio networks due to poor line speed or lack of phone line availability. Lack of access represents a huge disadvantage, and an inability to participate in the creative economy. There is still a long way to go in overcoming the digital divide.

RIMOs have increasingly become involved as 'regional agents' in lobbying for telecommunications in their regions, having identified this as fundamental to delivery of media and communication services. Some RIMOs (e.g. PY Media, Ngaanyatjarra Media) have also been involved in setting up communications infrastructure, including public phones, home phone services, broadband satellite equipment, UHF radio networks, and community WiFi networks.

For a case study on the development of a regional broadband network, involving all levels of government and community organisations, see the attached article *The Ngaanyatjarra Lands Telecommunications Project: A Quest For Broadband In The Western Desert*, published in Telecommunications Journal of Australia (Appendix 5).

Videoconferencing and Web-based networking

As outlined in Question 1, videoconferencing is being used (where available) by schools and TAFE training facilities, clinics and hospitals, police stations and courts (for remote court hearings and probation meetings etc), local government and regional service providers. This can significantly reduce costs of travel to remote areas for face-to-face meetings or service delivery. Skype is being used extensively for communication, although tends to be unreliable over current satellite services.

Question 4. The NBN will help the range of online government services to continue to expand. The committee is interested in views and experiences about engaging with government services online, whether local, state or federal.

With government policy of centralisation of remote communities (eg the Growth Towns program in the NT) and withdrawal of funding for homelands, lack of post office and banking services, abolition of CDEP and increasing withdrawal of face-to-face government service delivery in remote communities, effective access to on-line service delivery is increasingly important for the ongoing viability of many remote communities.

However, access to IT facilities, effective internet service, IT skills and familiarity with using on-line services, and literacy in English-language text-based navigation are all critical to accessing these services. Further, being able to provide all necessary information for identification, remembering passwords and having an address that is recognized by the computer-based system (often an issue in remote communities without street names or local postcode) are all common obstacles to use of on-line services. In many cases, community members require assistance by a staff member to navigate these services and often a phone call is required to complete the transaction or request. On-line services intended for use by remote Indigenous people need to be made as user-friendly as possible and appropriate for people with ESL and should be tested. Helpline numbers should be clearly identified on websites.

Question 5. What are some examples of what you want to see happen to encourage greater participation in the digital economy by people living and working in regional Australia?

IRCA sees the training and employment of remote indigenous people as critical to the future self-management of remote communities. This requires IT skills development and on-line services and resources that are designed to be user-friendly by Indigenous people, especially those with English as a secondary language.

- Indigenous businesses (art centres, media organisations, e-tourism ventures, cultural awareness, etc) and on-line sales, ordering and service delivery;
- Development of Indigenous on-line resources and applications (eg-iPhone apps);
- Increased regional and community information for visitors via websites, including entry permits, weather/road conditions, sites to visit, community services (accommodation, fuel, store, post office) and so on;
- Remote community media/music production, distribution and sales via on-line platforms such as IndigiTUBE and iTunes Store;
- Need more modelling and pilot projects in remote areas to look at innovative solutions for the Bush;
- Online Education – providing access to worldwide educational and library repositories, online learning courses, secondary schools and tertiary institutions. (i.e. the success of the Sunchild Cyber School in Canada);
- Increased employment and training opportunities for indigenous people using ICTs and digital media production and distribution technologies.

Question 6. What are the main barriers to regional communities increasing their use of information and communications technologies and do you have any ideas for ways in which regional communities could progressively overcome these barriers?

Barriers to increased use of ICTS include:

- Lack of adequate broadband backhaul infrastructure;
- lack of community access to internet facilities/ computers (mostly in larger communities);
- Lack of ongoing IT training or technical support; most funded training programs to date have been one-off or intermittent and do not recognise the need for ongoing access to ICTs and support to develop enduring skills;

- Lack of appropriate computer interface and relevant on-line content, including locally specific content (eg- community news and media, language and cultural heritage archives) and sites designed for ESL or low-literacy users;
- Last-mile Solutions for access out of hours- WiFi, mobile telephony.

RIMOs and the remote Indigenous media sector are ideally positioned to act as regional agents for supporting broadband uptake and coordination of ICT facilities and programs.

2. Regional health and education outcomes

Question 7. Do you have ideas for ways in which high-speed broadband could enhance the delivery of education and healthcare outcomes in regional communities?

Education and health providers are two of the key users of broadband in remote communities, where on-line services can significantly reduce the cost and time of remote service delivery. While this is not IRCA's area of expertise, suggested broadband applications for health and education include:

- Increased use of IP videoconferencing for tele-health, professional development, meetings and training delivery for remote communities;
- Videoconference patient consultation prior to sending Royal Flying Doctor Service for non-life-threatening cases (many cases could be addressed through a remote consultation and support of community nurse and save the RFDS well over $10,000 per trip);
- Online education resources such as games, worksheets;
- On-line projects that promote interaction with people in other communities, cities or even other countries;
- eBlackboards could access Indigenous controlled platforms acting as repositories for historic and contemporary Indigenous images, audio and video content thus making education more relevant and valued to remote language speaking Indigenous people;
- WEB 2.0 virtual classroom technologies that enable remote training delivery (e.g. as used by School of the Air and TAFE networks- see Q8 below).

Question 8. The committee would like to hear from individuals and organisations about their participation in, experiences of, and expectations about, online health and education service delivery.

Remote communities are increasingly reliant on tele-health services which rely on effective broadband. For legal and insurance purposes, the quality (resolution) requirement for any remote medical diagnosis or surgical support over videoconference is dedicated 384kbps symmetrical or above (ideally 512kbps symmetrical). Currently this requires terrestrial backhaul to achieve these guaranteed speeds. Tele-medicine is increasingly being seen to require speeds in the order of 10-50Mbps, which are only possible via dedicated bandwidth on fibre optic cable.

Training providers, such as schools, TAFE and School of the Air, are using web 2.0 applications such as Elluminate, Blackboard Collaborate or Centra for virtual classroom applications across multiple participants and sites, videoconferencing for remote lectures and IPTV networks to present training resources. As broadband capability increases, the opportunities for training and education for remote people increase, helping to close the gap in education outcomes. Satellite broadband backhaul will limit the types of applications that can be used due to latency limiting the potential for real-time two-way streaming.

3. Communications needs of Indigenous people and communities

Question 9: Are there examples of the internet being used by Indigenous Australians in ways that take advantage of economic, social or cultural opportunities?

There are many examples of internet usage by remote indigenous people, primarily around IT community access centres (Community Resource Centre network sites across WA, Indigenous

Knowledge Centre in NT and Queensland, PY Ku centres in APY Lands of SA, Gap Youth Centre's Internet Café, youth and arts facilities) and as part of IT Training or content development programs. Computers are used in all aspects of media production, distribution and viewing, young people are creating and sharing media using mobile telephones, digital cameras and MP3 players are ubiquitous, and on-line community access IT centres (telecentres, RTCs, PYKu centres, community colleges or libraries) are becoming common in remote communities. While most internet usage is currently for accessing on-line services (banking, shopping, purchasing music), entertainment (on-line media or music, games) and personal communications (Facebook, email etc).

Some remote organisations, such as media organisations, art centres and cultural centres are using the internet to promote and/or sell their services, produce, and merchandise, as well as market e-tourism and other enterprises. The web is the ideal platform for marketing the unique services/ products from remote providers where there is not enough passing traffic to be otherwise sustainable.

Programs like Networking the Nation, Telecommunications Action Plan for Remote Indigenous Communities (TAPRIC), Backing Indigenous Ability and the current Indigenous Communications Program have helped to provide ICT facilities, internet access, IT training and technical support and on-line content in remote communities. Several remote media organisations have played a key role in delivering these programs and have built ICT into their scope of activities.

The IT in Indigenous Communities (ITIC) conference hosted by AIATSIS in Canberra in 2010 had over 70 presentations of innovative IT-based programs going on in remote areas, from land management, media, archiving, mapping/ Geographic Information Systems, linguistic and cultural maintenance and documentation, and so on.

Most remote Indigenous people currently have limited access and usage of ICTs, particularly within Indigenous households[5]. IT and Internet access is commonly available only via workplaces (office, store, media centre, art centre, service providers offices), school/ TAFE, or shared access facilities (eg- Telecentres, Rural Transaction Centres, Indigenous Knowledge Centres). Public access on-line computers have been provided to communities under a range of government programs since the early 2000s but have varied levels of public access.

While fibre optic cable has been rolled out in some regions enabling ADSL capability, most internet access in remote communities is currently via satellite services installed by internet service providers under government subsidy programs to improve internet access (eg-Telstra Extended Zones program under USO, HiBIS, Australian Broadband Guarantee). However, Internet access is currently not included under the USO.

In determining distribution/access modes for remote areas, there are numerous unique considerations:

- Different living situations (eg-not living in a house, communal housing, grey nomads/campgrounds);
- Low IT literacy;
- limited access to IT facilities, mostly via shared facilities open only during work hours;
- lack of existing access equipment (eg-computers, smartphones) in Indigenous households;
- lack of mobile telephony or alternate internet access services.

The limited access to IT facilities, training, relevant on-line content and service delivery, and affordable broadband services will increase the digital divide as the rest of Australia is linked up to fast broadband with the rollout of the NBN. The ongoing viability of remote communities will increasingly depend on broadband access.

[5] See 'Home Internet for Remote Indigenous Communities' report (2011) of research being undertaken by ARC Centre of Excellence for Creative Industries and Innovation, the Centre for Appropriate Technology and the Central Land Council.

Where access is provided, Indigenous people tend to be rapid adopters of new technologies and active content producers. Affordable broadband access, combined with support for ICT facilities, training and applications, will build the capacity of remote Indigenous Australia and help to bridge the divide with the broader Australian community.

IRCA and ICTV have set up an on-line platform for remote media called Indigitube (www.indigitube.com.au), which showcases radio broadcasts and video content from remote communities. There are numerous other on-line media delivery platforms developed for Indigenous community access in Australia (i.e. Ara Irititja archiving project) and around the world[6]. Without broadband access, viewing or participation in programs such as these (as well as Youtube, ABC's iView an other mainstream sites) is not possible.

Broadband and on-line streaming (like ABC's iView) are increasingly becoming the way community media and Indigenous media service are expected to reach their audience. Currently IRCA and ICTV are working with remote communities to develop strategies for distributing remote video content after 2013, with the planned direct to home delivery of digital television, making BRACS local broadcasting obsolete. However, on-line delivery and IPTV will only be feasible if communities have high-speed broadband capacity and affordable access.

Low English literacy levels is a key factor influencing types of ICT applications being used, with many users tending toward audio-visual, icon-based and media applications – music, digital photography, video production, music recording, digital archives, interactive games – rather than text-based applications. Additionally, with MP3 players, digital camera, mobile telephones and even laptop computers becoming more affordable, remote Indigenous people are increasingly purchasing these tools for media creation, storage and viewing/listening. Young people are becoming engaged in and wanting to develop further media and ICT skills and actively produce their own media.

IT is a powerful tool for youth engagement and learning, with young people developing technological competence using the new digital tools and using this to re-engage with language and culture. They are developing a role as mediators for old people, using new technologies to preserve culture and build social capital for the future.

Question 10. What further initiatives should the committee consider to improve awareness within Indigenous communities of the opportunities provided by improved broadband services?

As outlined above, recurrent IT training, support and multi-media content production programs will help to engage people in a productive and creative way with ICTS, digital media and broadband capability. Similarly, use of new broadband-enabled technologies within existing work programs - land management, health, training, media, municipal services, language recording, archiving – will help to engage people in a hands-on and productive capacity with the benefits of broadband.

Applications that are identified as important by communities are those that enable personal and family communications across vast regions, such as mobile telephony, UHF or HF radio, videoconferencing and FaceBook. Digital media production and distribution is also a winning application. By building on these rapid uptake technologies, awareness of other applications and opportunities can be added.

It is crucial that broadband applications and access are not confined to non-Indigenous staff and workplaces, as has happened in many communities to date, as this effectively creates a localised digital divide.

[6] These include: Sunchild Cyber School in Canada (www.sccyber.net) which provides an online interactive indigenous schooling platform leading to tertiary education; Inuit television and film (www.isuma.tv); Ngapartji Ngapartji online Pitjantjatjara language course and videos (www.ngapartji.org); Us Mob (www.abc.net.au/usmob); Deadly Mob; Ara Irititja Archival Project (going on-line soon) and many more.

Question 11: What recommendations do you have for remote communities to take advantage of the progressive increase in availability of high-speed broadband?

The key challenge for RIMOs in promoting broadband and ICT infrastructure into their regions involves balancing a complex set of agendas:

- Raising awareness of the pros and cons of internet access in communities through consultation and training, so that remote Indigenous people are empowered to be active 'drivers' for the rollout and can decide if or when to take up internet access;
- Providing community access to ICT services and facilities, through locally run on-line media centres and free or affordable access to broadband;
- Ensuring that broadband rollout clearly addressed community concerns and needs, including telephony, access to local media content, internet banking;
- Reducing the social and cultural risks of broadband and ICTs via content filtering, anti-virus software, and training and awareness;
- Creating appropriate on-line resources, training tools and local content;
- Staging the roll out of new technologies at a pace that people felt comfortable with and could engage with;
- Providing regional coordination, training and technical support;
- Libraries as IT Centres, to allow access to national and international educational resources, including databases and on-line education programs.

As shared community IT facilities are often opne only during work hours, the challenge is to enable after-hours and weekend access and home-based access. By establishing last-mile distribution via ADSL, WiFi, WiMax, Next G or other technologies, remote people will increasingly be able to use ICTs or smart devices and access on-line services when and where they choose. Remote Indigenous people tend to be rapid uptakers of new technologies and digital literacy, meaning that use of broadband is limited more by the current restrictions on access and cost than interest and aptitude on the part of remote community users.

Question 12: What more could be done to improve digital literacy amongst Indigenous Australians and within Indigenous communities?

- More training
- more appropriate and relevant on-line resources
- improved access facilities
- cheaper home computers and other tools- smartphones etc
- Use of community media and broadcasting to raise awareness & inform about opportunities and risks.
- affordable access to internet via last-mile WiFi distribution (either free or pre-paid services).
- See Dr Inge Kral research documenting the success of technology in engaging youth in non-school environments.

4. Developments in the terrestrial and satellite mobile phone sector

Question 13. Have you been able to readily obtain information to improve your mobile phone coverage, such as using an external antenna or choosing particular phones that are better suited to rural or remote coverage?

This is not relevant to most remote areas where there is no mobile coverage. We have actively advocated for increased mobile coverage in remote communities as the most appropriate form of telephony. We have been advised by NBN Co that mobile telephony (or any other telephony backhaul) is not a consideration under NBN planning and there are currently no programs to support further mobile services in remote areas that are not commercially viable for telcos to deliver services.

Due to shared households and lifestyle (mobile populations, living outside of houses), mobile telephony is a more appropriate form of telephony access then fixed line telephony. Where mobile telephony is available in remote communities (eg- Warburton, Ernabella, Yuendumu, Lajamanu and many Top End and Cape York communities) there is high take-up of mobile telephony as a primary telephony service (as users can have their own phone number and handset rather than a shared household phone). Most users prefer pre-paid services as they are not fixed to a monthly bill and 2-year contract, only use what they can afford (although call costs are very high on pre-paid services) and can still receive calls even if they don't have credit. However, it is not unusual for a $30 credit (about 10-20% of the average weekly income) to last less than an hour of usage.

Even in sites where there are no services there is high uptake of mobile phones for use as a media storage tool and for use when in coverage areas. Mobile phones are being used as a media creation/distribution tool, sharing content via Bluetooth, and will increasingly be used for the next generation of media makers.

IRCA recommends inclusion of mobile telephony under the Universal Service Obligation to ensure affordable capped usage. IRCA can confirm common feedback from the regions that there is strong take up of mobile phone usage by people living in remote Australia. The popularity, flexibility and safety features afforded by these devices is evidence that there needs to be recognition of this communication mode within the USO in relation to the particular needs and rights of people living in remote locations.

Based on research carried out on mobile telephony usage in a remote community (Bloomfield River Valley) by Laurel Evelyn Dyson[7], she proposed the following recommendations:

- *"The long-term provision of equitable mobile phone services in remote communities will need to be provided through the equivalent of a mobile Universal Service Obligation as there is little likelihood of a sustainable business case.*
- *Lobby the Government and Telstra for more appropriate remote area mobile calling rates, e.g., the extension of Country Calling to allow for dual tariffs for prepaid mobile phone cards in remote areas with limited service.*
- *Investigate means to ensure community members have reliable access to public computers and that opening hours also suit the needs of working clients.*
- *Continue to develop and use local strategies to raise awareness of acceptable mobile phone use.*
- *Liaison between different Government departments and service providers in the Bloomfield River Valley (anywhere remote) should be conducted to achieve better co-ordination of technical support and sharing of information regarding service visits.*
- *Promote the use and development of mobile technology-based services, such as emergency services, local information services, polling community opinion, work coordination, health, disability services, education, cultural transmission and entertainment."*

IRCA supports these recommendations to be extended all remote communities. We would encourage the RTIRC to consider the whole research document, as well as others undertaken in Hopevale Queensland in relation to this Inquiry.

VoIP

Additionally we encourage the consideration of VoIP as an appropriate communication technology for remote communities. VOIP is revolutionising telephony and provides a more affordable option

[7] Report to Wujal Wujal Aboriginal Shire Council on 'Mobile Technology in the Bloomfield River Valley' by Fiona Brady and Laurel Evelyn Dyson, June 2009, Page 8-9
www.staff.it.uts.edu.au/~laurel/Publications/MobileTechnologyInBloomfieldRiverValley.pdf

to other forms of telephony. Indigenous communities can be expected to quickly adopt VOIP telephony as they gain access to the internet.

Question 14. Are you aware of emerging technologies or initiatives that could be used to improve mobile phone coverage in regional Australia?

While we understand that such technologies may be coming, they will not be able to address the key issue for remote areas which is the lack of mobile telephony infrastructure and backhaul capability. While satellite broadband may be capable of providing mobile backhaul (3G requires 5-10 Mb per second bandwidth), this will be an expensive and prohibitive option for any commercial telco. Mobile telephony will only be extended into more remote communities if it is to be included in the USO or specific government programs are set up to cover the capital setup (ie - tower construction, antennas/cabling, exchange upgrade, power supply upgrade etc) and partial operational costs.

The $8million Mobile Connect funding program established by DBCDE in 2008 aimed at extending mobile coverage to the 10 most populated sites without towers. However this funding was not taken up by any telcos because it covered only infrastructure but not recurrent costs, the backhaul was not in place, and it was not seen to be a viable commercial arrangement due to low usage in sparsely populated areas. Accordingly no replacement program has been put in place, with the only programs currently the Satellite Phone Subsidy Scheme and the public phones program targeted at communities with less than 50 people.

If low-cost mobile transmission equipment could be added to existing self-help transmission tower infrastructure in communities, this could provide a more viable solution for enabling mobile communications. Alternatively new VoIP telephony handsets may provide a cheap alternative to mobile telephony by linking up through community-wide WiFi networks. IRCA urges that trials of any such technology be undertaken to assess the viability and robustness for remote community use.

There is also a need and opportunity for creating more Indigenous content, applications for viewing, and for reaching people using mobile devices.

Question 15. What have been your experiences with satellite mobile phones?

Most remote media organizations and other service providers have satellite phones for emergency use while travelling on remote roads where no other emergency communications are available. In general, satellite phones are very expensive to purchase (even with subsidy), for monthly bills ($30-$70/mth depending on plan), and for call costs (over $2.00/minute) for a service that it rarely used. The cost is prohibitive for remote Indigenous people or individuals who have to pay for the service personally (ie-not covered by business or organisation), particularly since the closure of the CDMA network limited handsets to being satellite use only. Without a car kit, satellite phones are also unable to be used while in a vehicle or under a shelter.

Also, Globalstar services have been notoriously ineffective in recent years, with a limited number of satellites making call connections very difficult to initiate and maintain (sometimes taking an hour or longer to connect). This has made the satellite phone ineffective as an emergency service. Other networks are better but there may still be a delay in linking to the required number of satellites.

PAW Media have recently implemented an alternative emergency system for all vehicles, a satellite-based tracking system with SMS messaging capability, which is much more affordable and appropriate to the need. EPURB is also a useful emergency device although it does not enable communications.

5. Consumer issues

Question 16. Are there any significant consumer issues specific to rural and remote communities that you consider are not being addressed?

New Connections

It has been increasingly difficult to get new phones connections in remote communities since Telstra introduced the ruling that the householders are responsible for the lead-in and trenching within the property. Without contractors in remote communities to do the trenching and lay conduit (some Telstra–approved contractors have indicated a reluctance to travel to remote areas without a large number of orders to fill) it can take many months or in some cases years to get a new service connected. Much of this issue could be rectified by Telstra providing conduit and instructions for communities to do their own lead-in trenching.

Pre-paid Phone Services Not Included Under USO

Telstra claim that they are not obliged to provide a phone service within the 20 working day period under the Extended Zones contract (or USO) unless the service is on contract with monthly billing. In the Ngaanyatjarra Lands of WA, this meant that only 34 of 199 applications submitted in 2003 (under the DCITA-funded iConnect project) for pre-paid phone services were installed, with others not installed due to limited exchange infrastructure. When the network was upgraded to fibre optic in 2007 and exchanges upgraded to accommodate more lines, most of these requests were still not honoured based on lack of lead-in to houses. IRCA has urged for several years that the USO be broadened to include pre-paid services, however the scope of the recent USO Review did not permit such changes and the opportunity was lost.

Question 17. Do people in regional areas, particularly those in vulnerable or disadvantaged groups, have appropriate access to information about their consumer rights and the service options available to them?

No. There are no regional agents in remote communities for supporting community access to telecommunications services. There are also no help-line services for people who speak only an Indigenous language.

There have been many examples of people being sold services or plans that do not work in remote communities (in particular mobile telephones), or are over-priced compared with similar services available. Also, people have signed up for two-year billed plans without realizing, even though they may move house within that period, lose the handset, or have other people use their service without contributing to the cost of bills, they are still liable. This often results in services being disconnected and people unable to get a new service until all previous bills are paid off. Often the community's name is included in the Customer name, meaning that no other customers in that community can get services until the outstanding bill is paid.

Question 18. If not, what additional strategies could be put in place to assist individuals and groups to better understand their consumer rights and responsibilities?

An appropriate strategy would be to employ/contract regional communications support workers or trainers who work for the regional media organisation or other trusted community-based organisation. This person could provide information on consumer rights and responsibilities, assist with selecting appropriate services and setting up new accounts etc and deliver basic training and technical support. Helpline or phone-based services are rarely effective for remote people, partly due to limited access to telephony to access support, language differences and unwieldy identification information required to gain access to services. These calls often lead to frustration from both sides. Even the intialising of, or adding credit to, a pre-paid mobile phone is often too difficult for Indigenous people as it requires the reading/typing of long strings of digits.

Within a response to the ACCAN review this year, IRCA recommended a dedicated telecommunications advocacy specialist be allocated to work with or alongside the Remote

Indigenous Media Sector to advise government on the particular telecommunications needs of remote Indigenous peoples.

Question 19: Are there specific cyber-safety challenges that arise from the way that communications technologies are being used by regional, rural or remote communities?

Pornography and inappropriate content: There is a need for content filtering on all public internet access facilities and services to prevent access to pornography, violence and other inappropriate content. This is a serious issue in remote communities, where there are many reported instances of pornography being accessed or sought, on public computers. There are several instances of senior people seeking to have internet access disconnected or computers removed due to this behaviour. While content filters have been introduced in most sites, particularly in NT where it is mandatory under the Intervention laws, these are not always effective and some inappropriate content invariably gets through. The more significant issue is that Bigpond has no filtering in place so internet access on 3G/ Next G mobile telephony or wireless internet is unfiltered.

Internet Fraud: The other issue is that Indigenous people are often not aware of the issues of internet fraud and could give over internet banking details (a common practice among family and friends, as is handing over keycards to unscrupulous dealers) without realising the implications.

Future Issues: While we are not aware of instances of on-line bullying or predatory behaviour at this time, with the high take-up of Facebook and other social networking applications as well as mobile telephony, it is only a matter of time before this becomes a serious issue.

Question 20: How can education and awareness of the risks of using mobile devices, such as smartphones, be improved for consumers in regional areas?

As mobile phone outlets do not provide any training or awareness on the risks of using mobile phones or other devices, it is necessary for this information to be available within the community. The most effective method is face-to-face training, however radio and community TV content announcements (in language where required), posters outlining the risks and on-screen visual warnings (before allowing access to an unauthorized site for instance), are also effective means of conveying the risks.

Other issues

Question 21. Are there any other issues relating to telecommunications services in regional Australia that you would like to bring to the committee's attention?

Multiple Use of Self-Help Telecommunication Facilities

We note the opportunity for multiple use of existing self-help transmission facilities for telecommunications access in remote communities. In particular, this could enable mobile telephony within the vicinity of communities as well as WiFi for internet access (trialled in Ngaanyatjarra communities since 2009). While these towers are continuing to be used for radio broadcasting in communities, the use of the facilities is planned to be reduced if the existing self-help television retransmission facilities become redundant under the planned Direct-to-Home TV model. The existing infrastructure – broadcast tower, air-conditioned transmission room, UPS and/ or power conditioner, security fence, access road, power supplies etc)- may be able to be used for other purposes.

Indeed in some remote areas the towers could be used for symmetrical broadband wireless delivery to homes. An example of this was demonstrated at an IRCA Technical Forum in Alice Springs in June 2011, where the head of CSIRO's ICT Media Centre, Dr Ian Oppermann, presented outcomes of the trials of innovative wireless technologies using analog television infrastructure to provide symmetric (two-way) speeds of up to 50Mbps. There was strong interest for similar trials to take place in Central Australia, and IRCA would be keen to play a role in facilitating such a trial with the sector.

Alternative Communications Systems- UHF Radio Networks

Some regions (e.g. Ngaanyatjarra Lands and APY Lands) also have existing UHF radio repeater network infrastructure installed under the NTN program but not functioning due to no recurrent operational or R&M funding. These should be brought back into working order to enable free 'chatline' communications across regions, including coverage of the vast areas between communities to assist with emergency communications.

The positive aspects of the UHF Radio Network were:

- Coverage of most of the Lands;
- Affordable technology;
- Free usage;
- Mobile, easy to use;
- Repeater network enabling 'chat line';
- Primarily in language;
- Provides emergency communications on roads.

HF radio is also useful, with greater range, but handsets are very expensive to purchase or replace (compared with UHF), making it inaccessible for community users.

Public Access to Data on Telecommunications in Remote Areas

IRCA has had difficulty gaining access to details about telecommunications in remote communities in order to provide effective advocacy on behalf of communities. Much of this information is held by Telstra but, as the work has largely been carried out under the USO, we feel that it should be in the public domain. Much of the data IRCA has access to is based on our own research within RIBS communities but does not provide an overall picture and quickly becomes outdated.

We have previously requested from Telstra up-to-date maps showing all fibre optic cable in remote Australia (the most recent publicly available ones we found are from 2001), as well as details of microwave broadband infrastructure, microwave telephony infrastructure (HCRC and DRCS) and Extended Zone 2-way satellite services in remote communities. We did not receive this information.

Information that would be useful to have access to for each remote community includes:

Telecommunications Services:

- Telephony Backhaul: HCRC, DRCS, satellite, fibre optic
- Current no. telephone services in community
- Number in Indigenous households
- Number of public phones
- Number of days of outage for public phones per annum
- Mobile telephony service/ type
- Primary broadband/internet backhaul: Satellite/ fibre optic/ wireless/ dial-up
- Last-mile distribution: copper wire/ cable/ fibre optic, WiFi / other
- No of internet satellite services in community
- No of ADSL services in community
- No of ISDN, G-BIP or other telecommunications services in community
- Other services/ locations: (eg- in school, clinic, police station etc)
- Other Communications Services: UHF radio, HF radio, satellite phone
- Telecommunications/Broadband Issues/ Unmet Needs/ R&M issues
- Current broadband spend/month per community

Key broadband applications used in community:

- Education- School
- Other training/ e-Learning
- Health org/clinic
- Accounting

- Police/ justice/ other government agencies
- Thin client systems
- Videoconferencing facilities
- Other users

While this level of detail may be beyond the scope of this Inquiry, it would be useful to have a publicly available database where this information can be accessed. This would help IRCA and other agencies greatly in presenting a clear picture of the needs of remote Australia.

This data would also help with planning for the delivery of appropriate level of service under the NBN. To date, no needs analysis has been done under NBN planning in remote communities to inform the level of services needed and types of applications being used. IRCA is concerned that assumptions are being made and choice of technology selected (i.e. satellite delivery of NBN) which will significantly limit future applications (especially high-bandwidth and symmetrical applications such as IPTV, videoconferencing, accessing server-based audio-visual records, gaming and so on) and will lead to high cost of usage for remote users.

The ACMA report 'Communications Infrastructure and Services Availability in Australia 2008' provides some information but this is mostly national statistics (sometimes showing metro, non-metro), with no delineation of the data specific to remote areas.

Training and Employment

The cost of maintenance is one of the biggest issues in remote areas, especially with contractors coming in from regional centres to undertake even basic repairs. Currently large outside agencies are being tendered to do VAST and NBN satellite dish rollouts.

IRCA urges that NBN include a training program to build local technical expertise and employment opportunities in each region to Indigenous communities should have training and development and employment opportunities. Tasks could include doing telephone lead-ins, trenching for plumbing, electrical and telecommunications, installing and resetting satellite dishes, and running cables an wall plates.

A certificate course should be offered in cabling, electrical services, working at heights, as well as occupational health and safety. The RIMOs should be supported to establish technical services units to provide regional maintenance and support of NBN and other telecommunication, satellite and broadcasting facilities.

Future of the USO and Remote Services

Most telecommunications infrastructure in remote Australia is currently owned and maintained by Telstra. If Telstra were to lose the USO or EZ contracts, would Telstra continue to provide site maintenance for remote facilities? Telstra could re-focus its attention on service delivery in urban areas where profits are highest and lose interest in remote areas. This is a major risk for remote areas, with a low likelihood of another telecommunications provider having the same interest (or experience) in remote service delivery without owning the infrastructure.

Appendix 1: BACKGROUND ON IRCA

IRCA asserts, through its membership and Board, its authentic, specialist and direct representation of the media and communications interests of remote and very remote Aboriginal and Torres Strait Islander communities in Australia.

IRCA recognizes that remote indigenous media practice has an historical and proven role in the maintenance of language and culture, self–representation and community development; and that remote indigenous media organisations have played a pro–active and decisive role in the development of a remote media and communications industry. The

IRCA's sphere of activity encompasses discrete and diverse communities that continue strong traditions of language, Law and cultural practice; it specifically represents the unique needs of remote indigenous people far from urban and regional population and service centres whose media and communications practice is critical and essential for their well–being and cultural integrity, and whose needs and interests are not represented by any other organisation in a focused and dedicated way.

IRCA was founded in 2001, and has been operating now for ten years. It advocates on behalf of remote Indigenous people with regard to media and communications services. IRCA represents people within 147 remote communities in Australia, supported by eight Remote Indigenous Media Organisations (RIMOs):

- Pitjantjatjara Yankunytjatjara (PY) Media
- Ngaanyatjarra Media
- Pintubi Anmatjerre Warlpiri (PAW) Media & Communications
- Pilbara and Kimberley Aboriginal Media (PAKAM)
- Top End Aboriginal Bush Broadcasting Association (TEABBA)
- Queensland Remote Aboriginal Media (QRAM)
- Central Australian Aboriginal Media Association (CAAMA)
- Torres Strait Indigenous Media Association (TSIMA)

RIMOs provide a range of support services to their RIBS network within their region, including: training and employment, production support, regional radio networks, technical support, regional coordination, other media programs (e.g. music, ICT, archiving), representation in the national forum. RIBS provide local radio and television production and re-broadcasting facilities where local Aboriginal people have produced programs and stories in local language(s) for broadcast either locally, regionally or nationally.

IRCA, through the RIMOs, serves 147 communities with Remote Indigenous Broadcasting Services. These communities are made up of populations of at least 80% Indigenous people. However IRCA is committed to the Media needs of all Indigenous people living in remote Australia. There are currently 1113 Indigenous communities in the Remote Sector.

IRCA is also committed to seeing the ongoing provision of Indigenous Community Television (ICTV) for remote viewers. With ICTV, IRCA also co-manages and moderates an online platform (www.indigitube.com.au) to provide appropriate content and provide Indigenous media producers with a showcase for the work.

In the last year, IRCA has hosted a Remote Digital Technical Forum to address key concerns in relation to the Digital TV Switchover and co-hosted the recent 'Broadband for the Bush' forum with Desert Knowledge Australia. IRCA has an Advisory Group made up of RIMO Managers and technicians working in remote regions.

Appendix 2: CONTEXT & ISSUES FOR REMOTE INDIGENOUS COMMUNITIES

Typically, people in remote communities do not have access to the basic services available in regional towns and cities. Despite this, they choose to live in these communities in order to maintain connections with custodial country and homelands, family, social and cultural networks and customs. While travel to and from regional centres for services and visits is common, relocation is rarely an aspiration due to language differences, 'foreign country', and the higher incidence of social issues caused by limited employment, lack of housing, access to alcohol and racist attitudes. While remote communities differ in terms of size, population, distance from regional centres, services provided, and social, cultural and historic influences, there are unique needs and challenges for many Indigenous Australians living in remote Australia.

Some of the unique challenges include:

- Low socio-economic conditions with primary income for most people from CDEP or welfare;
- Higher cost of basic items such as food as fuel, leaving little disposable income;
- Limited access to secondary education (many schools only to primary level);
- Indigenous languages often spoken at home, with English a secondary language;
- Limited access to banking or government services, such as post office, police, hospital, child welfare or youth services, legal support;
- Limited employment opportunities or work options (being further eroded by abolition of CDEP);
- Limited adult education, training opportunities or access to library services;
- High incidence of chronic disease (diabetes, renal failure, heart disease, mental health disorders etc) and significantly lower life expectancy (up to 20 years);
- High rates of incarceration with young Aboriginal people up to 28 times more likely to be detained than non-indigenous juveniles (source: ATSIA Committee Inquiry);
- Lack of housing, leading to overcrowding and social issues[8];
- Indigenous people often live outside of a house, making fixed telephony or media services inappropriate;
- Unreliable water and power supply[9];
- Long unsealed roads with high incidence of accidents and wear and tear on vehicles;
- Roads subject to flooding and closure, disrupting supplies and service provision;
- Reduced local governance and community input into decision-making;
- Reduced municipal funding for local maintenance equipment and materials;
- Outsourced essential service provision to external service providers and contractors.
- On-line services are needed which recognise the linguistic and cultural diversity of indigenous Australia;
- Face to face or oral communication is more appropriate than written/ text-based communication. A lot of information is conveyed in body language and facial gestures;
- Highly dispersed and mobile populations, regular changes of address/community, with extensive travel for family, cultural and 'sorry' business.

These factors impact on the selection of appropriate communications technologies and media service delivery models.

[8] Shared housing also makes billed phone services problematic as many people use the phone but the bill is an individual's name. Pre-paid phone services are not currently covered under the USO with many requests for installation not met as a result.

[9] Pre-paid power card meters have been installed in Indigenous households in WA communities.

Appendix 3: ACRONYMS

ACMA	Australian Communications and Media Authority
DBCDE	Department of Broadband, Communications and the Digital Economy
DEWHA	Department of Environment, Water, Heritage and the Arts
DEEWR	Department of Education, Employment and Workplace Relations
DRCS	Digital Radio Concentrator System (microwave telephony)
DTH	Direct-to-home
FaHSCIA	Department of Families, Housing, Community Services And Indigenous Affairs
HCRC	Higher Capacity Radio Concentrator (microwave telephony)
HiBIS	Higher Bandwidth Incentive Scheme
IBMS	Indigenous Broadcasting and Media Sector (2010 Stevens Review)
IBP	Indigenous Broadcasting Program
ICT	Information and Communications Technology
ICTV	Indigenous Community Television
IRCA	Indigenous Remote Communications Association
IPTV	Internet Protocol Television
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
NBN	National Broadband Network
Ng Media	Ngaanyatjarra Media
PAW Media	Pintubi Anmatjere Warlpiri Media and Communications (formerly Warlpiri Media Association
PAKAM	Pilbara and Kimberley Aboriginal Media
POTS	Plain Old Telephone Service
PY Media	Pitjantjatjara Yankunytjatjara Media Aboriginal Corporation
QRAMAC	Queensland Remote Aboriginal Media Aboriginal Corporation
R&M	Repairs and maintenance
RIBS	Remote Indigenous Broadcasting Service (formerly BRACS)
RIMO	Remote Indigenous Media Organisation
RTIRC	Regional Telecommunications Independent Review Committee
RTR	Regional Telecommunications Review
SBS	Special Broadcasting Service
TAFE	Technical and Further Education
TEABBA	Top End Aboriginal Bush Broadcasting Association
TSIMA	Torres Strait Islander Media Association
TUSMA	Telecommunications Universal Service Management Agency (oversee USO from July 2012)
UHF	Ultra High Frequency (Radio)

USO	Universal Service Obligation
VAST	Viewer Access Satellite Television
VoIP	Voice over Internet Protocol
VHF	Very High Frequency
WiFi	Wireless Fidelity
WiMax	Worldwide Interoperability for Microwave Access