

APN submission to the RTIRC Committee

9 December 2011

INTRODUCTION

Australian Private Networks (APN) is pleased to make this submission to the RTIRC Committee. APN presented to the Committee on 4 October 2011, and this paper provides more detail on APN's views.

APN believes that it has unique insights into the needs of rural and remote consumers, both indigenous and non-indigenous:

- APN only operates in rural and remote Australia
- APN has installed over 40,000 satellite-based broadband internet services across Australia
- APN still maintains and operates over 30,000 of these services
- APN has successfully completed two-thirds of the innovative and successful Indigenous Communications Program throughout the top half of Australia

In this paper APN firstly describes its recent experience with implementing the Indigenous Communications Program (Telephony component) – referred to as ICP in this paper, which was initiated by and is managed by the Federal Department of Broadband, Communications and the Digital Economy (DBCDE).

APN then outlines what it believes is the most valuable and effective potential development of the infrastructure installed under the ICP program, i.e. provision of local broadband data services to ICP communities. An example of a successful recent pilot of this capability is presented.

The paper concludes by showing other possible developments that can further enhance communications infrastructure in remote communities.

THE INDIGENOUS COMMUNICATIONS PROGRAM

The Glasson Report, which was tabled in Parliament in October 2008, resulted (*inter alia*) in increased Federal Government funding and focus for the existing Indigenous Communications Program (formerly Building Indigenous Ability Program). In a competitive tender process, APN won the right to deliver the Telephony component of this Program.

APN was and is very committed to the success of the program and has delivered as specified in the contract. It has developed the program into a very successful example of how an idea recommended by a Committee can be adopted by the Government and implemented by private industry, for the benefit of all. APN acknowledges the vision and support of the Department of Broadband, Communications and the Digital Economy in implementing this successful program.

APN designed a specific stand-alone telephone for this application. It requires no external power and no land-based communications. An over-dimensioned solar power supply is utilised, with a typical power reserve of at least 4 days; other than under fault conditions, no ICP phone has ever been inoperative due to power unavailability. Importantly, the communications system utilises both primary and reserve satellite links in order to deliver normal calls on the primary link and access to 000 services if either system fails.

The voice services utilise VOIP technology and national calls to fixed numbers and 1800 numbers are free to all users; this removes all the issues associated with coins and coin collection. A wide variety of standard phone cards (calling cards) can also be utilised to make calls to mobile, 13/1300 and international destinations. In contrast with some other phone programs, specialised phonecards are not needed.

Two styles of installation are available i.e. Freestanding and Building Mounted. Examples of both are shown below:

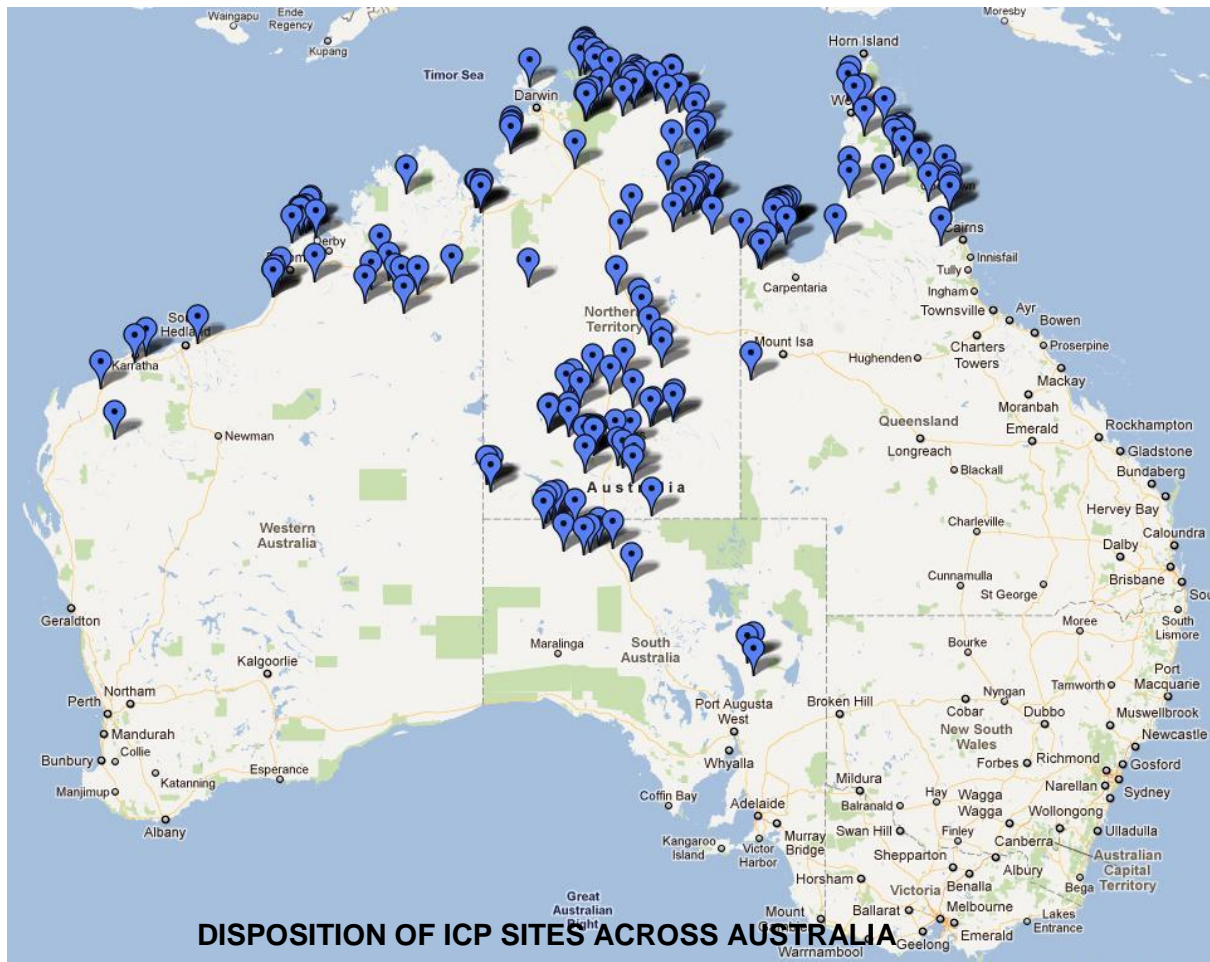


FREESTANDING ICP PHONE



BUILDING MOUNTED ICP PHONE

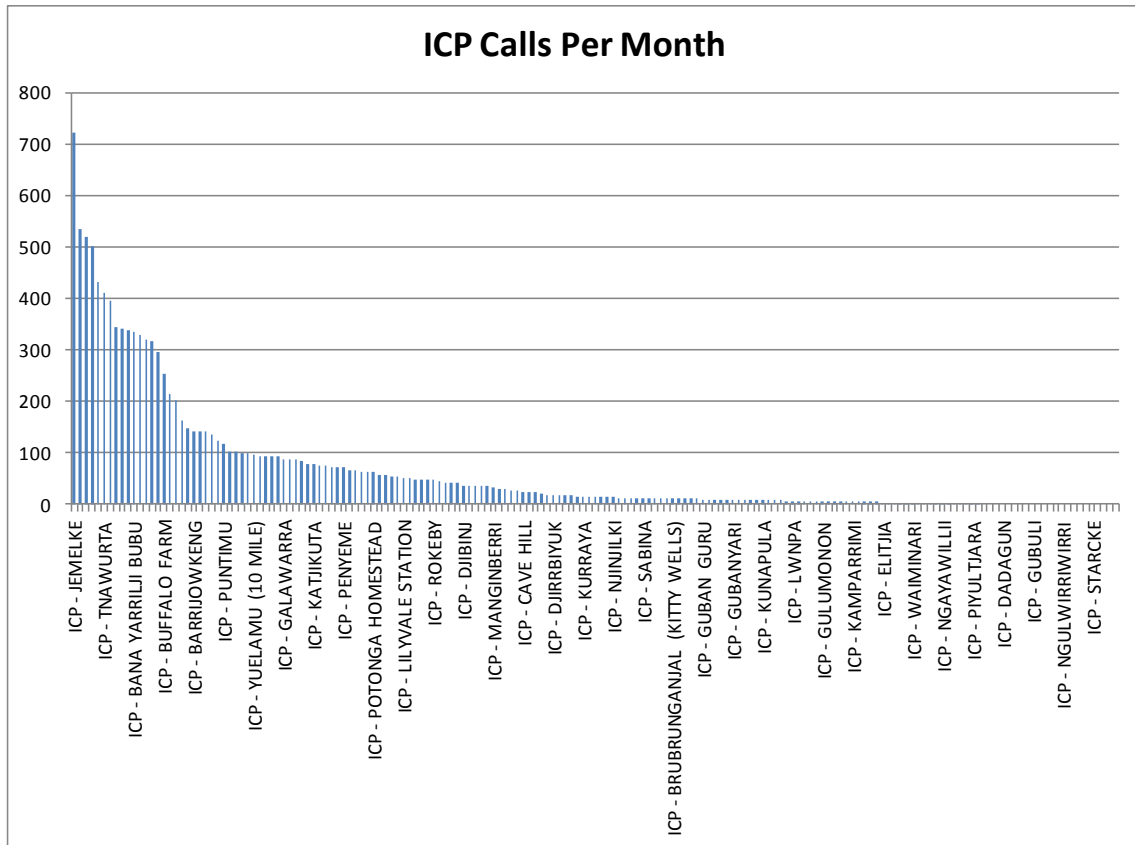
The first (pilot) phone was installed in May 2009, the second site was installed in August 2009, and by 9 December 2011, over 190 phones were successfully working across Australia. More phones are being added, as detailed below. The disposition of the sites is shown below; locations are often extremely remote and often inhospitable to modern technology. There are ICP sites virtually on beach-fronts, on islands (including 18 on Mornington and satellite islands), and they are exposed to extremes of sun, heat, wind (possibly cyclonic), rain and even below-freezing temperatures.



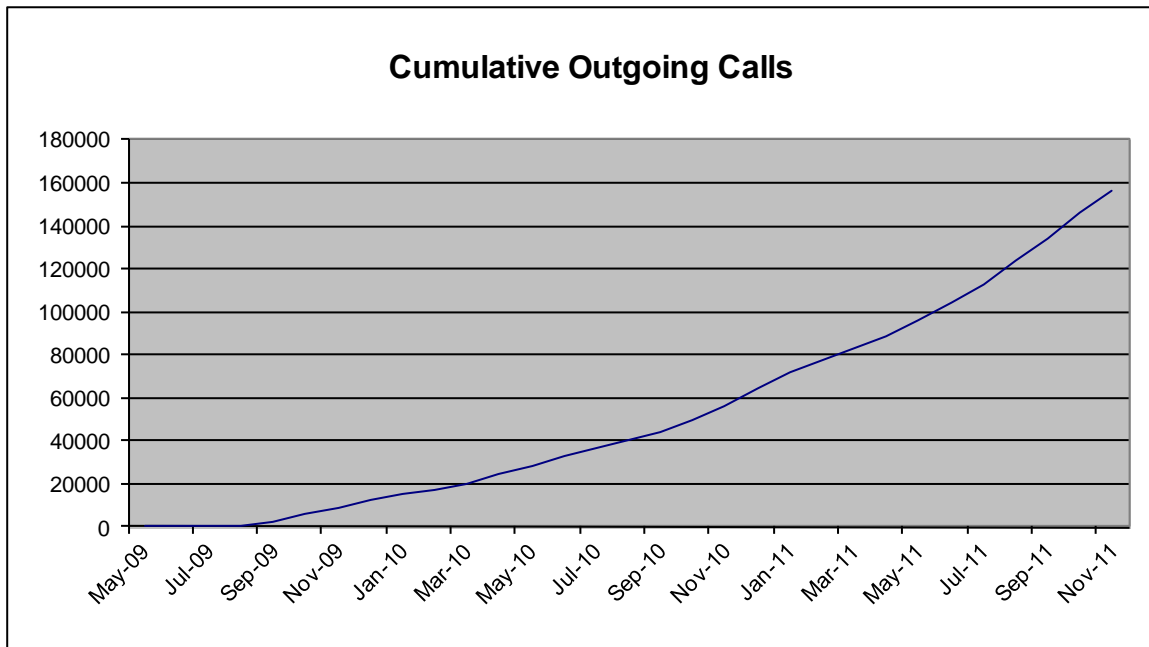
The acceptance of the phones in the indigenous communities has been excellent. They have become focal points for gatherings, and importantly are valued and cared for by the local communities. The level of vandalism is extremely low, and various communities have willingly assisted with the installation of ICP phones. A number of appreciative written communications have also been received from communities.

The utilisation of the phones is excellent given the isolated locations, small communities and propensity for the communities to move location. The average site utilisation across the base is 78 outgoing calls per month, with an unknown quantity of incoming calls. As with any statistical distribution, there are sites that make many more calls, up to 10 times the average, and there are always sites that record no calls at various times of the year as communities move location. The distribution of calls per month is shown on the next page.

The growth in the total number of outgoing calls has been strong and consistent as shown in the second graph on the next page. As is usually found with telephony statistics, the average outgoing call duration has settled at just under 3 minutes, currently averaging 2m:50s.



DISTRIBUTION OF ICP CALLS ACROSS SITES



GROWTH IN OUTGOING ICP CALLS

The performance of the phones in the difficult environments as detailed above has been excellent, with an average availability over the life of the project across the base of more than 98.5%. When faults do occur, they are fixed within tight SLAs wherever possible, subject to weather and similar factors.

The Telephony component of the ICP program is expected to be completed over the next few years. At that stage it is expected that up to 300 ICP phones will be installed and working. With the DBCDE's support, minor improvements have been made to the design over the project's short life, for example:

- Relocation of the handsets to the South side of the booth in order to improve user comfort
- Redesign of the solar array support to reduce the height of the unit
- Introduction of an alternate supplier of the primary satellite link which has enabled the elimination of large 2.4m dishes
- Introduction of an alternate foundation system, enabling installations in sandy conditions
- Addition of lighting to the booth (currently awaiting formal DBCDE approval)

APN firmly believes that the ICP concept has been very successfully tested and implemented over the last two and a half years; equally it believes that the concept can be further developed to benefit indigenous communities across Australia. This is detailed below.

ICP: BEYOND TELEPHONY

APN always recognised that the ICP concept could be developed to deliver enhanced services, and engineered the infrastructure to facilitate such development. The development that delivers the most benefit, and that is fortunately easiest to implement, is the addition of local broadband data services to the ICP phone installation. There are also a number of other possible enhancements and developments, and these are listed at the end of this paper.

POTENTIAL TO PROVIDE DATA SERVICES AT ICP SITES

The concept involves:

- adding local hardware to the ICP sites
- making small network changes
- all at relatively low cost
- without impacting voice calls in any way
- to deliver a no-cost WiFi data service to the community
- with open-air coverage of 50-100m from the ICP phone
- with the option to give access to locals only (e.g. where the phone is near a highway)
- with the option to provide content filtering

APN believes that the addition of such a capability could provide a relatively easy yet invaluable step forward in terms of infrastructure in remote indigenous communities. Most ICP installations consist of several houses, all in close proximity to the ICP phone. The ICP WiFi site could service several such houses, delivering broadband internet to them and thus providing a quantum leap in their communications options – bringing the world of the internet to these isolated communities.

Going forward, data services could be installed at the time of installing new sites, plus a retrofit program for existing sites could easily be implemented. More detail, and confidential costs, can be provided to the committee on request.

In June 2011, with the DBCDE's approval, APN conducted a temporary pilot installation of such a service. The next section summarises that pilot, as it is illustrative of what can be achieved.

In November 2011, the DBCDE also approved pilot installations of secure data services at three ICP sites in the NT in order to facilitate remote monitoring of solar power installations installed and operated by the Centre for Appropriate Technology (CAT)/Bushlight. These have not commenced yet so no results are available. The expectation of CAT is however that the ICP monitoring should substantially enhance the performance of the solar power supplies in the communities as it will both give advance warning of imminent problems and provide much more rapid notification of issues as they do occur.

PILOT INSTALLATION OF ICP DATA SERVICES

In June 2011, APN provided at its cost a pilot installation of WiFi data services (and a second handset, not relevant to this analysis) at the Laura Aboriginal Dance Festival (Cape York) for the duration of the Festival. Several thousand people attended the festival, which spans three days.

For the duration of the Festival, the ICP phone was enhanced by the addition of:

- A wireless router with antennas on top of the ICP phone installation, that provided WiFi capabilities for laptops and suitable mobile phones (e.g. iPhones and smartphones) within 50-100 m. of the phone, at no cost to the users
- An enhanced satellite link for the duration of the Festival to maximise the WiFi bandwidth per user
- Signage on each side of the phone explaining what facilities were available

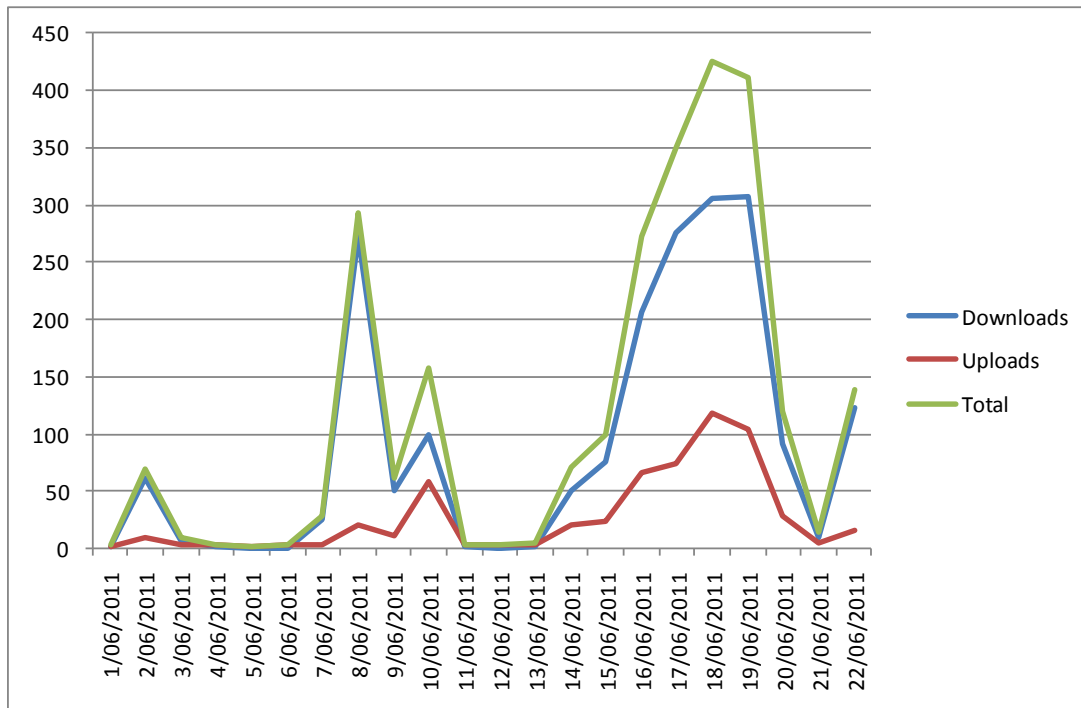
The photo below shows the WiFi antennas visible at the top of the ICP phone.



MODIFIED ICP PHONE AT FESTIVAL GROUND

The graph below shows the data usage for most of the relevant month. The initial spike in data usage is due to usage by those involved with setting up the infrastructure for the festival. The festival itself was on 17, 18 and 19 June 2011. The total data usage over the above period was 2.547GB. The total data usage over the period of the Festival was 1.185GB. This level of data usage exceeded expectations, as visitors to the festival would have had no expectation that data services would be available, and hence would not have come prepared.

It is clear that this pilot provided both a useful capability at the Festival and an insight into user behaviour in terms of data usage.



DATA USAGE AT ICP FESTIVAL GROUND SITE

The feedback from the event organisers was very positive. They thanked APN for providing such an “amazing service”. They cited usage by:

- Young people attending the Festival with their smartphones
- The event organisers
- Emergency Services
- Government Agencies

A wide variety of applications were used on the data link, from Facebook to Skype, email and instant messaging to news and weather, YouTube to iTunes, and general browsing to gaming.

The organisers found that the WiFi went further than the quoted 50m radius, typically achieving 100m. Laptop PCs performed better in this respect than smartphones.

As recently as 29 November APN received a new request from another key (resident) organiser of the Dance Festival, asking for permanent access to the wifi internet service in order to facilitate their organising of the next festival to be held June 2013. This illustrates the value of the data service.

OTHER ICP POTENTIAL ENHANCEMENTS & DEVELOPMENTS

Casting a wider net, a range of enhanced capabilities and indeed variations of the ICP concept are possible. Each is summarised below.

A). Femtocells

With the cooperation of a national mobile telco, low-powered femtocells could be installed at ICP sites, thus providing localised mobile coverage to registered users.

B). Internet kiosk

With some development the ICP infrastructure could provide an internet kiosk capability at the phone. For example a toughened screen and keyboard/mouse capability could be mounted in/on the phone. Alternately a stand-alone kiosk could be designed, installed nearby, either indoors or outdoors, and connected by wireless to the ICP phone.

C). Medical kiosk

The concept of broadband-connected medical kiosks in the regional and rural outback is rapidly gaining acceptance as a key benefit of the digital revolution. Utilising APN's technology, a similar concept can be developed and implemented in the remote areas of Australia.

D). Wayside phones

It would be relatively easy to develop a version of the ICP phone suitable for placing strategically along 'highways' – such as the Tanami Track (or more correctly 'Road') - in remote Australia. These could provide anything from emergency service access through public phone capabilities to public phone and public data capabilities. The safety of all travellers through these regions would be thus enhanced.

E). House-based phones

APN has done initial design work on a smaller, lower cost version of the ICP phone that could be permanently mounted in a residence or office and thus provide non-public telephony and data facilities. It can be powered from, local power sources e.g. generator and/or solar, or a dedicated power source can be installed with or without battery backup. There has already been a good level of commercial and residential interest in such a facility. This phone could also replace the distribution of mobile satellite telephones by the DBCDE.

F). Remote phones

The phones could be used privately by being placed appropriately on large properties to enable phone and internet access to the people working on these properties while remote from the central homestead and buildings.

APN is happy to provide more detail re any or all of these concepts.