Pursuing cost-effective high-speed internet and E-commerce access for rural Australians

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Abstract

Recent activities of the Farmwide Regional Access Network Project funded under the Commonwealth Regional Telecommunications Infrastructure Fund are described, including the experiences of providing Internet access in rural and regional Australia using a competitive supply model and new technology options. The new FRAN Internet access for all projects will facilitate quality affordable local call Internet access for all Australians.

Introduction

Farmwide Pty Ltd is an Australian company owned by the State and Territory farming organisations of the National Farmer’s Federation (NFF). Farmwide is based in Canberra and is a commercial organisation, set up to look for commercial opportunities for farm organisation members at the national level. It was established in 1988 as a not-for-profit organisation to enable aggregated purchasing for NFF organisations and farmers in the areas of banking, travel, and telecommunications.

One of Farmwide’s key objectives since November 1995 has been to facilitate the uptake of online services in non-metropolitan Australia. The Farmwide Online Services Pilot Project, which commenced in January 1996 with the support of the Commonwealth Department of Transport and Regional Development, successfully connected 1,000 farm families to the Internet.

This project found many difficulties faced by rural people in accessing the Internet and has documented key issues relating to the demand for, barriers to the uptake of and benefits to the use of the Internet in rural Australia. The final report is now complete and the results from that project are currently being compiled.

In November 1997 the Regional Telecommunications Infrastructure Fund (RTIF) of the Networking The Nation Program funded the establishment of the Farmwide Regional Access Network (FRAN). The objective of FRAN is to extend and improve access to quality online services in non-metropolitan Australia.

The grant monies arising from the sale of Telstra were used to provide quality local call Internet access to fifteen rural and regional communities. FRAN PoP (Points of Presence)
sites were established in Queensland, New South Wales, Victoria and South Australia at a fraction of previous access prices

**Points of Presence (POP)**

An extensive mail-out to rural communities and NFF members, backed up by an advertising campaign, resulted in more than 60 applications from rural communities, and 14 responses to the tender to service these communities. Several POP locations were chosen, mostly near the eastern seaboard and relatively remote. These were based at Barcaldine, Cooktown, Hughenden, Normanton, Richmond and Winton in Queensland; Coonabarabran, Coonamble, Gilgandra, Gloucester, Hay, Old Bonalbo in New South Wales; Swifts Creek and Woomelang in Victoria; and Ceduna in South Australia.

The successful tenderer was TPG Internet Pty Ltd, who were given a two year contract with the community host contract being for five years.

The first PoP installation was completed in December 1998 with the last in September 1999. Back-channel installation caused significant delays.

Characteristics of the FRAN Points of Presence include Australian design and manufacture, hybrid technology using Asymmetric Satellite and Digital terrestrial back-channel and Multi-carrier implementation by PanAmSat and Telstra.
Local call access is provided at 56 kbits/s with a V.90 modem, or a 64 kbits/s digital channel. Internet access costs either 50c or $1 per hour and free analogue dial-up connections at specific times.

A new initiative will accompany the introduction of DTH TV later this year, which for approximately $20.00 per month, will provide access to a number of private TV channels and 20 hours of Internet access a month.

It is important to appreciate that the provision of rural telecommunications services now extends way beyond providing telephone voice services, or even simply access to the Internet. It is about providing affordable competitive solutions that address issues of equity of access for rural subscribers that is on a par with what is available to metropolitan subscribers (1/8th of competitor’s new price, previously 1/14th) (Twelve months plus of quality digital service).
There were 2,672 users as at 28 June 2000:

<table>
<thead>
<tr>
<th>State</th>
<th>No. of users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensland</td>
<td>585</td>
</tr>
<tr>
<td>New South Wales</td>
<td>1,503</td>
</tr>
<tr>
<td>Victoria</td>
<td>366</td>
</tr>
<tr>
<td>South Australia</td>
<td>218</td>
</tr>
</tbody>
</table>

Issues that arose concerned quality of service including Telstra OnRamp, the customer access network (CAN) and power backup for different locations and the sustainability of the PoP. Areas of concern in relation to the sustainability of the PoPs were general computer/Internet awareness, skills development and the relevance of content and services provided to the consumer.

Other aspects of FRAN include two satellite trials, the development of a rural modem (Woomera) and the development of content designed specifically for the Australian agricultural industry.

**FRAN Satellite trials**

Farmwide is trialling two satellite products, the Gilat Skysurfer and Hughes DirecPC. The selection for the 200 users for each trial gave priority to DRCS/HCRC subscribers to overcome very slow connection speeds to the Internet. The Skysurfer product has been replaced by the Gilat Skystar Advantage that gives two-way satellite access.
The Hughes DirecPC uses the CAN and Panamsat 2 and can provide data rates from 64kbps to 400kbps. The back-channel mix consists of:

- ARCS/DRCS/HCRC 55%
- RIM/IRIM/RCM 23%
- Copper 15%
- DPGS/DCARS/other 7%

The Gilat Skystar Advantage product operated by Heartland Communications uses Panamsat 8 for two-way satellite access.

**FRAN Woomera Modem**

The standard of telephony services in remote areas denies many rural Australians access to the Internet. Research and Development by an Australian company, Maestro, in conjunction with Farmwide, has led to a new design, the Woomera, a modem with the capacity to deliver the Internet to rural and remote Australia.

The rural market is relatively small and many rural Australians are unfamiliar with modern information technology. This has meant that a modem with the performance needed to link rural areas to the Internet via the available Public Switched Telephone Network has not been commercially viable. This is all about to change with the integration of this ingenious new product from Maestro and the Farmwide roll-out of Points of Presences for the rural community.

The Woomera has been designed and developed locally, and the user group will number 1,000 who will be required to have local access to one of the 15 Farmwide PoPs, thereby assisting with the sustainability of the PoP and encouraging local communities to adopt...
online services. The aim of the Woomera is to maximise stability and throughput on the existing local loop.

Farmwide web site (http://www.farmwide.com.au)

Farmers and others in rural Australia want access to a wide range of information that will assist them with farm operations, and enhance their daily lives through improved community contact and the outside world. Farmwide is providing information on daily commodity news and prices, has developed an agricultural search engine, and has areas that cover agricultural software, agricultural events, other agricultural web sites, etc. The Farmwide web site also gives details about the various aspects of the Farmwide projects and results from the previous Online Services Pilot.

Farmwide has also produced the second edition of The Australian Farmer’s Guide to the Internet with the assistance of the Rural Industries Research and Development Corporation. This guide follows the highly successful first publication that was designed to help new Internet users to learn how to use and access online services as well as providing over 250 agricultural web sites.

FRAN training and support

Because online services are a relatively new concept, it is vital for FRAN to provide training for users, local co-ordination and to achieve solutions at the local, regional and State levels. Training has been offered face-to-face in over 80 locations throughout Australia, and will be supplemented with online training over the length of the project. Ongoing telephone and online technical support have been provided to all participants in the original Online Services Pilot, the satellite trials and the Woomera modem trial.
FRAN Internet Access for All

The objective of the FRAN Internet Access for All project is to assist in the timely provisioning of affordable quality local call online services to rural and regional Australia (R&RA) with an emphasis on new low cost technologies and community partnership. In June 2000 Farmwide was granted up to $20.3M to Farmwide Pty Ltd for the provision of local call Internet access to areas that do not currently have such access, excluding those in extended zones that are the subject of a separate Commonwealth Government initiative.

The proposed solution will build on the experience gained from the current community based asymmetric satellite-cached digital terminal server model. It will attempt to maximise additional end-user opportunities, separate to the project, through the stimulation of the competitive commercial availability of very affordable higher bandwidth direct to home asymmetric satellite solutions encompassing the project-based local call online access.

The outcome of the FRAN Internet Access for All project is dependent on a number of related issues, such as the Telstra Zone Inquiry, which may determine new calling parameters for rural and regional people to access traditional local call Internet services. Telstra has announced that the initiatives in relation to this inquiry will be announced before the end of the year.

Another related issue is the Commonwealth Government's $150m tender to provide local call telephony in Extended Zones. Although the FRAN Internet Access for All project will not provide services in Extended Zones, it is reasonable to suggest that the Extended Zone Tender winner may wish to provide services in standard zones adjacent to Extended Zones, this having a bearing on the number of locations that require a FRAN Internet Access for All service.

The Commonwealth Government is attempting to facilitate improved competitive supply for telephone services in rural and regional Australia and has announced two pilot locations for USO contestability. Given that the FRAN Internet Access for All project does not wish to interfere with potential commercial solutions, a number of locations identified as not having traditional local call Internet access today may indeed have the opportunity of supply from a number of competitors in the contestability pilot locations.

Another outcome of the Telstra 2 social bonus initiatives is the $25m continuous mobile coverage on designated highways exercise. As a number of new wireless technologies can be substituted for copper-based customer access network alternatives, and that higher speed data using wireless technologies is being trialled, there is the possibility that a solution to the mobiles on highway initiative could also facilitate local call Internet access where it has not been available in the past.

Telstra has previously announced that it is reviewing its call diversion number only product (CDNO), currently used by a number of Internet Services Providers (ISPs) to
facilitate local call access across a number of call zones, by January 2001. If this product was to be discontinued, and no alternative provided, this may increase the number of locations that require a FRAN Internet Access for All Service.

**Conclusion**

The Internet and e-commerce are as essential to rural Australia as they are to urban dwellers. Through Farmwide we are committed to helping making sure that rural Australia, and farming businesses and families in particular, are no longer disadvantaged through inferior telecommunications services. This is an enormous challenge given the way that telecommunications systems are developing, and the way that global communities are using these systems to change their way of life and the way they communicate and do business with each other.

The FRAN projects intend to reduce the gap between metropolitan and non-metropolitan Internet access. The above graph shows an encouraging trend towards achieving that goal.