

The Communication Enhancement Through Telecommunication (ComET) project

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Abstract

The Secretariat of the Pacific Community (SPC) has made strenuous efforts to address communication imperatives for its programme delivery to its member countries. Initially, it used the Internet to assist in programme delivery. However, the low availability and high costs of telecommunications in Noumea and Suva hampered these efforts. The use of PACNET (the communications service of the Pacific Public Health Surveillance Network) was very successful but restricted by communication capabilities and lack of connectivity. In 1998 the capacity was limited to 28.8 kilobytes per second (kbps) in Noumea and 1.9 kbps in Suva with no possibility of obtaining additional capacity at affordable costs through the commercial telecommunications carriers. The ComET project has now installed 7.2 metre antenna and associated equipment at each of the Secretariat's offices in Noumea and Suva. This allows 24 hour per day access to the PAS2 satellite for high speed transmission of voice, data and video traffic. Connection to the Offratel premises in Nouville via the Celeris high speed backbone operated by OPT has linked this to the internet and thereby to member countries and territories, and the rest of the world. The ComET project began transmission in March 2000 and has addressed communication problems, and thereby improved the SPC's programme delivery (examples given in this paper) to its members at affordable costs within the Secretariats existing budget.

Introduction

Dispersed populations and vast distances impose high costs on service provision in education, development, social welfare, health, travel and communication in the region. With the arrival of truly global communications services, the

Pacific Island States and Territories (PICTs) have the opportunity to address some of these development challenges.

The Secretariat of the Pacific Community in Noumea and Suva provides development assistance to the Pacific region across a wide range of programme in agriculture, culture, community education, demography, health, marine resources, rural development, statistics, women and youth.

Poor communications in the Pacific region, coupled with the disproportionately high tariffs for telecommunications, have impacted on the effectiveness of service delivery in all the areas mentioned above. In some cases, the outcome has been lower efficiency in implementing programme activities, in others, otherwise desirable projects have been abandoned due to communications difficulties.

The Secretariat of the Pacific Community (SPC) has made strenuous efforts to address these communications imperatives, and has made preliminary use of the Internet to assist in programme delivery. However, the low availability and high costs of telecommunications in Noumea and Suva have hampered these efforts. In 1998, the capacity was limited to 28.8 kilobytes per second (kbps) in Noumea and 1.9 kbps in Suva with no possibility of obtaining additional capacity at affordable costs through the commercial telecommunications carriers. Whilst initial efforts, such as the PACNET (the early warning communication tool of the Pacific Public Health Surveillance Network) and the Pacific Islands Animal Health Information System (PANIS) initiatives have been very successful within the restrictions of the existing communications capabilities, all programme areas are severely constrained by the lack of connectivity.

Project description

The "Communication Enhancement through Telecommunication" (ComET) project provides high-speed communications link between the Secretariat's offices in Nouméa and Suva to the Internet. The project installed a 7.2 m antenna and associated equipment at each of the Secretariat's offices. This allows 24 hour per day, seven-day per week access to the satellite for voice, data and video traffic which is used to provide support to the Pacific Community's programmes.

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Funding

The project received support from the Governments of Australia and France who provided funding for the purchase of the capital equipment. Early in the discussions it became clear that several research organisations in New Caledonia were constrained in their operations by limited Internet bandwidth. These organisations joined with SPC to become the ComET partners, with the objective of securing cost-effective Internet bandwidth to support their research and development activities.

Technical implementation

Loral/Orion

In early 1999 four possible satellite providers were approached to ascertain what capacity they had to provide communications bandwidth in the Pacific. Of those offering a service it became obvious that the most appropriate due to its predicted Ku band service, with coverage stretching from China to French Polynesia, would be the Loral/Orion 3, due to be launched in April 1999.

After many delays the Orion3 was launched on May 4th 1999 but due to a failure in the Boeing Delta III launch vehicle the satellite never reached orbit, necessitating a return to negotiations with other satellite providers.

Panamsat

In November 1999 a contract was signed with PANAMSAT for a 64kbps dedicated link between Nouméa and Suva, utilising the PANAMSAT PAS2 satellite, situated in geostationary orbit at 169 degrees East. An optional second contract was also negotiated to purchase a 512kbps Internet link via the Napa Teleport in the USA.

Offratel

During the twelve-month negotiation and development period of the ComET project, SPC and the ComET partners had undertaken continual review of the communications possibilities in New Caledonia and the wider Pacific.

In Mid-1999, Offratel, a subsidiary of OPT and France Cable and Radio, reconfigured their Internet connectivity, moving from Singapore Telecom to Teleglobe in Canada. This change of upstream provider provided Offratel with a significant increase in available bandwidth, which they were keen to offer as a service to research organisations in the territory.

Negotiations continued through to November 1999, when a technical proposal was presented to the ComET partners that addressed their Internet needs at a price competitive with that available via PANAMSAT.

The primary objective of the partners having been addressed by this development a decision was taken to accept the Offratel contract for the Internet service in preference to the PANAMSAT offer. The Nouméa partners are now connected to the Offratel premises in Nouville, New Caledonia via the Celeris high-speed backbone operated by OPT.

Installation

Between December 1999 and February 2001 the earth station equipment was installed in the Nouméa headquarters and the Suva regional office. Preliminary transmissions commenced at the beginning of March 2000. The success of the initial circuit was followed by several months of testing and configuration culminating in an official opening by the representatives of the Governments of Australia and France on May 26th 2000.

Operational experience

Link availability

Since February 2000 uptime for the Noumea-Suva link has been approximately 95%. Two periods of un-scheduled outage were experienced due to equipment failure as a consequence of a manufacturers design fault. In both cases the units were replaced under warranty, but the need to ship units from the USA resulted in a delay of 5 days on each occasion.

The units in question have subsequently been modified by the manufacturer and it is expected that uptime will exceed 99% over the next year.

Recurrent costs

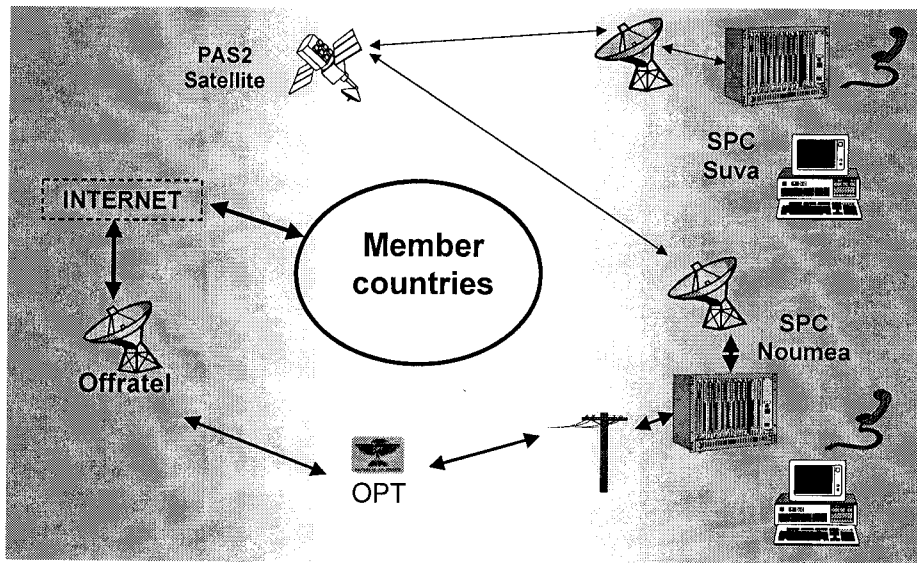
The design changes outlined above resulted in a reduction of recurrent costs from an early projection of US\$ 6218/month (assuming 4 Nouméa partners) to US\$ 2950/month. This incorporates US\$ 1200 for a 64 kbps full-duplex link between Suva and Nouméa and US\$ 1750 for 128kbps to the Internet.

Additional functionality

Additional telecommunications capacity brought heightened concerns relating to security and resource management. The ComET project provided the opportunity to address these issues with a comprehensive network redesign, culminating in the installation of a firewall and bandwidth management system.

This provides professional officers with access to the essential information resources they need in support of their activities assisting the regions development, without compromising the integrity of the network or the performance of essential services.

ComET project diagram



It is anticipated that additional services will be built onto the existing ComET infrastructure over the next 12 months, maximising the efficiencies to be realised from the investment. These will include audio and video services, improving communications within the organisation while containing costs.

Benefits to the Pacific community

An improvement in communications capabilities can dramatically increase the effectiveness of all of the Pacific Community's projects and services. The following examples demonstrate how the project impacts on SPC key programmes in the area of health development:

PACNET

PACNET has been serving the Pacific Island countries and territories members of the Pacific Public Health Surveillance Network (PPHSN) since April 1997. It is based on information technology and communication advances, i.e. E-mail and Internet services. Telecommunication and distance education are among the PPHSN priorities. The implementation of the ComET project ensured that communications capacity is available to build upon the successful PACNET information network.

Population and reproductive health

In conjunction with UNFPA, SPC runs a four-year project on population and reproductive health advocacy, which started in 1998. One of the main areas of activity is media advocacy, comprising a number of activities, including the setting up of a media network in the region to circulate materials to journalists. Preliminary work has been carried out on potential Internet activities, which includes web site development to speed the dissemination of reproductive health informa-

tion throughout the region. The effectiveness of these activities was significantly enhanced by the ComET project.

Vector Borne Diseases project

The AUSAID funded Pacific Regional Vector Borne Diseases Project has as one of its objectives the task of distributing in a timely manner items such as:

- reference and health education materials for the control of diseases such as dengue and malaria
- up-to-date surveillance information
- protocols for mosquito and disease control

The ideal way to do this is to make these materials available over the Internet, in the form of a "virtual library".

In addition to these examples, the ComET project also benefits to many other SPC programmes in the areas of Agriculture, Marine Resources, Library and information services and translation services.

Conclusions

The ComET project provides a solution that addresses the communications problems common to all of SPC's programme areas, and thereby dramatically improves the quality of SPC's programme delivery to its members.

References

Available from the author on request. □