Internet Access and Pricing in the Pacific
Fiji Internet Group
Vision for Fiji and the Pacific

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1 Introduction

Inadequate and expensive communications have been a major factor in inhibiting development in Pacific Island Countries (PIC). It started last century with infrequent shipping services followed by unaffordable air travel through unreliable and expensive voice telecommunications to the current time when the promise of new opportunities through Internet are restricted by prohibitive charges.

It is the latter, however, that offers exciting opportunities for PIC which can leverage this technology to become better informed (enhanced education), to promote potential (increased tourism and related services), to access tele-medicine (improved health services), and finally to participate in the rapidly growing global information economy (employment opportunities).

Regional organisations are in a strong position to undertake projects that can assist in providing Internet services to PIC. The background to work already carried out as well as proposed projects is detailed in the following section while alternative solutions are presented under options.

Finally, Internet will arrive in all PIC but the question is when. It will only be through proactive projects that it will arrive in time for PIC to participate fully in this revolution and not be left further behind in the development process.

2 Background

The regional organisations have always identified the requirement for an affordable and reliable communication network which would enables them to serve the needs of the member countries in a cost effective and timely manner. FFA, in particular, saw the need for such a network as the backbone to a surveillance and enforcement programme that is fundamental to the effective management of the resource.

This resulted, during the late 1980s, in an investigation of alternative technologies to the then costly and unreliable Public Switched Telephone Network (PSTN) for transfer of voice and data. Trials were conducted using HF radio, leased PSTN circuits and satellites as the technology while early tests were made using the Internet transport between FFA and SPC, Noumeá. It should be noted that Internet was then restricted to academia and the military. These tests resulted in the implementation of the PEACESAT (satellite) network for the fisheries resource sector and a parallel Inmarsat (satellite) project for maritime surveillance. The stage had thus been set for regional organisations to become involved in alternative technologies for communications to assist in development of PICs. Predictably, the established telecommunications companies (telcos) became agitated at a perceived loss of revenue and a disturbance to their long enjoyed monopolies They named these alternative technologies: “bypass” services.

Throughout this development period several regional organisations had commenced implementing electronic mail (e-mail) on a regional wide basis via PEACESAT (FFA) or had integrated e-mail into their corporate networks (SOPAC).

SOPAC then became active in proposals to bring full Internet services to Fiji, fully realising that if it could be implemented here in an affordable manner, then other PICs would use the Fiji model. An Internet trial was conducted where the participants were Forum Secretariat, USP and Telecom Fiji Ltd (TFL). The duration of the trial was 6 months starting December 1995.

2.1 FIG as a scaleable and transferable model

Unfortunately, TFL charges were prohibitive and SOPAC formed a group of organisations, named the Fiji Internet/intranet Group (FIG) to share the cost of a connection to an Internet Service Provider (ISP) outside of Fiji to obtain affordable Internet. These organisations all have a common goal of providing development services to PIC through education, health, business promotion, resource management, infrastructure management, and legal information.

Following claims by TFL and FINTEL that they had monopolies in Fiji to provide national and international telecommunications and in particular that TFL had a monopoly on Internet Services, FIG was obliged to access Internet via TFL. This claim is dubious as travel agents/airlines operate a similar network for bookings.

The monopolies enjoyed by these telcos will soon be a thing of the past and there will be new opportunities for FIG to access Internet via alternative means.

The aims and objectives of FIG are provided as Attachment 1 and price inconsistencies are shown in Attachment 2.

2.2 Submission to UNDP

SOPAC was approached by a specialist from UNDP, headquarters, in late 1996 and requested to submit a proposal to implement a second phase of the Pacific Sustainable Development Network (PSDN) Programme. This followed the critical review of the implementation of phase one by UNDP. The proposal[1] was submitted in February 1997 and demonstrated how Internet services could be implemented in seven PIC during a two-year period using the FIG model that is both scalable and transferable. Candidates for the seven countries would be those who had no Internet services or where those services were unaffordable.

It is anticipated that funding can be obtained to assist implementing Internet in several Small Island States such as Kiribati, Niue and Tuvalu.

2.3 Alternatives

A major constraint to Internet access in many PICs is the international telco link where the quality and cost of service may render access impractical or unaffordable. A solution has been to use alternative international links such as HF radio and satellite links, where the latter has focussed on small, low cost dishes or terminals (VSATs – Very Small Aperture Terminals).

3 Options

This section deals with plausible options and there may be no single option that can be applied throughout all PICs that vary in area, population and existing infrastructure.

The primary goal is to provide Internet access to regional organisation contacts while the secondary goal is other government departments involved in development, donor agencies and NGOs. This can be achieved through a project similar or identical to that submitted to UNDP (see section **2.2**).

[1] Pacific Sustainable Development Network Programme - Phase 2. 1 February 1997. SOPAC Miscellaneous Report 242.

3.1 Common

Common to all options is the establishment of a national Internet group which uses FIG as the model. The group will be self-sustaining after the second year. The steps in establishing the group will be:

Identification

Identify suitable organisation or individual to become the lead partner in the national group and operator of the national hub.

Provision of equipment

Provide sufficient equipment to establish the hub and Internet international gateway. Estimated cost year one US$28K per country.

Follow-up assistance

Ensure that the group is sustainable by providing assistance in the second year. Estimated cost year two US$8K per country.

The method or route of connecting to international Internet using one of the following options which should be selected by the implementing agency and the national partner.

3.2 Existing Telco

The most logical option is to use the existing infrastructure. Use an existing ISP, negotiate with the international telco for an affordable Internet connection, or use international dial-up to an ISP in another country. The cost of the latter would limit Internet access to e-mail only. Estimated costs – variable by country and included for e-mail only option in proposal.

3.3 Existing Satellite

This option would use PEACSAT and would require some investment to upgrade the existing terminals to have auto tracking and a digital modem. Physical cabling constraints would necessitate the group hub to be located within 50 metres of the PEACESAT indoor electronics. Estimated costs – capital US$10K, monthly US$5K for 64 kbps.

3.4 New Satellite

There are several US companies providing satellite equipment to allow countries without Internet access an affordable option. Estimated costs – capital US$50K, monthly US$5K for 64 kbps. The Orion satellite is due for launching in late April 1999 and the above costs are reasonably accurate for both capital and monthly charges.

4 Summary

SOPAC has implemented a national Internet group model which is both sustainable and transferable to other PICs and is investigating both existing and new satellite options for providing international Internet access to the national groups.

Costs will be falling and SOPAC, mindful of budget constraints throughout the region, is closely monitoring these costs and weighing price, performance, and reliability factors to ensure any project implemented has a goal of sustainability.

It is anticipated that with deregulation and removal of monopolies, the pricing structure of the telecommunications, in particular Internet will fall in Fiji to regional levels which are currently in the order of US$5K for a dedicated 64 kbps connection.

Attachment 1

Description of Fiji Internet/intranet Group

Goal of FIG

To obtain an affordable Internet connection of sufficient bandwidth to allow the Fiji Internet/intranet Group (FIG) of partners to discharge their obligations by having access to information and in turn providing information that is of benefit to the region.

What is FIG

The Fiji Internet/intranet Group was formed as a means to obtain affordable Internet for the like minded partners whose common objectives are in providing improved standards of living in the region through improved health, education, resource management, legal information, trade and commerce, technology and environmental monitoring. FIG partners who have full Internet access are the European Union, Fiji Institute of Technology, Fiji National Training Council, Fiji School of Medicine, Fiji Trade and Investment Board, Forum Secretariat, Mineral Resources Department, South Pacific Applied Geoscience Commission, South Pacific Commission and UNDP. All partners contribute towards the cost of a dedicated Internet connection via Telecom Fiji Ltd.

Objectives of FIG

- Obtain cost effective Internet Services for the non-commercial organisations in Suva and encourage development of local information exchange through intranet.
- Ensure that reductions in national rates will be adopted by other PICs who perceive Fiji as the model.
- Ensure that Internet Services reach the widest possible audience in the region to provide avenues for employment in Internet commerce.

Obstacles to FIG

- Excessive Internet rates in Fiji (see **Attachment 2 and 3**)
- Possible overcapitalisation in Telecom Fiji Internet services which cause above.
- Lack of response from TFL to requests for greater bandwidth.
- Inconsistent rates (Fiji Visitors Bureau pays considerably less for same service as FIG)
- Licence restrictions.

Solutions for FIG

- TFL lowers their rates to be compatible with other PIC
- FIG connects via satellite to international Internet and bypasses FINTEL
- FIG connects to FINTEL who lowers their rates to be more competitive than satellite option

Attachment 2

Comparison of Internet rates by country (April 1999)

It is well documented that the rates applied by Telecom Fiji Ltd are disproportionate to the major countries such as Australia, New Zealand, Europe and USA and this has been the subject of considerable discussion in the media since the inception of Telecom Fiji Internet Services. It was these rates that necessitated the formation a group like FIG to obtain affordable Internet access.

Telecom Fiji has always excused these rates on economies of scale and stated that users should not compare services in the rim countries to those in small island countries like Fiji.

However, the rates in other island countries show that the argument presented by Telecom Fiji is invalid.

To present these figures on a realistic basis it is necessary to use a realistic bandwidth that is 64 kbps (k) and one that a small to medium organisation would subscribe in a rim country. Telecom Fiji has provided rates for 9.6, 19.2, 48 and 64 kbps and it should be noted that there is minimal cost reduction with increasing bandwidth.

The figures for New Caledonia and Samoa supplied by South Pacific Commission and South Pacific Regional Environmental Program respectively where both organisations purchase a 28.8 dedicated Internet connection via leased line.

Table 1 shows the monthly cost by country for a dedicated 64k Internet circuit and multiplier relative to Telecom Fiji Ltd. This is highlighted in the following figure while table 2 shows extrapolation.

Table 1: 64k Internet by month

Location	USD	x Fiji
Fiji	$7,755	1.0
Cook Islands	$5,580	1.4
Solomon Islands	$4,816	1.6
New Caledonia	$3,969	2.0
Papua New Guinea	$3,000	2.6
Samoa	$1,905	4.1
Federated States of Micronesia	$1,800	4.3
Jamaica	$1,100	7.1

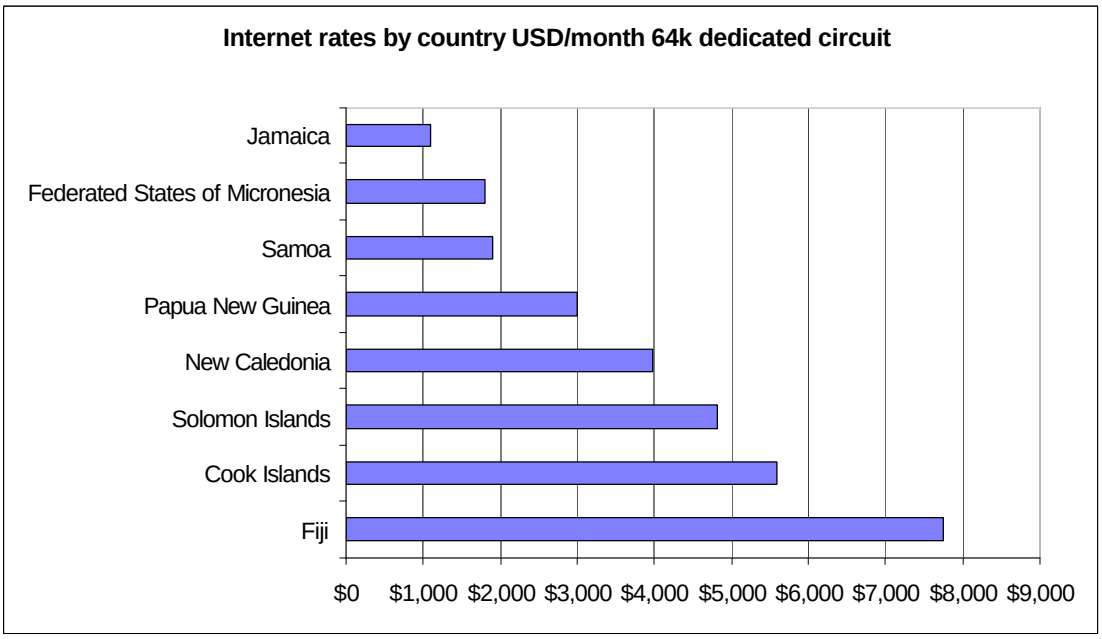


Table 2 – Rates by country by bandwidth

Location	kbps	FJD	USD	USD/k
Suva, Fiji	9.6	$4,250	$2,125.00	$221
	19.2	$7,100	$3,550.00	$185
	48.0	$12,870	$6,435.00	$134
	64.0	$15,510	**$7,755.00**	$121
Rarotonga, Cook Islands	64.0		**$5,580**	$87
Honiara, Solomon Islands	28.8		$2,167	$75
	64.0		**$4,816**	$75
Noumea, New Caledonia	28.8		$1,786	$62
	64.0		**$3,969**	$62
Port Moresby, PNG	64.0		**$3,000**	$47
		WST		
Apia, Samoa	28.8	$2,400	$857	$30
	64.0		**$1,905**	$30
Pohnpei, FSM	64.0		**$1,800**	$28
Kingston, Jamaica	64.0		**$1,100**	$17
Exchange rates	1 FJD =	0.5	USD	
	1 FJD =	1.4	WST	

Note 1: All Fiji rates inclusive of VAT

Attachment 3

Comparison of Internet rates in Fiji (April 1999)

It is instructive to compare costs for Internet access from Fiji where the link is symmetric using Orion satellite, TFL (Telecom Fiji Ltd, the national carrier) and FINTEL (the international carrier).

Notes:
1. All costs USD unless stated.
2. All speeds in kbps
3. For asymmetric connections: Left speed receive in kbps / right speed transmit in kbps
4. Telecom Fiji prices as per meeting October 1998. There is no indication of any future reduction
5. FINTEL prices are provisional March 1999 and include Telecom Fiji Ltd leased (land) line charges and 10% VAT.
6. TFL has no published rates above 64k as they have only a 640k international circuit from FINTEL. It was necessary to extrapolate their costs using a factor of 1.8 (double bandwidth and apply 1.8 * charge).

ORION SATELLITE

4.1 Capital equipment

2.4 m dish, 8 watt antenna modem, cables
Max capacity: 1024/384 USD 50,537

2.4 m dish, 16 watt antenna modem, cables
Max capacity: 1024/512 USD 50,612

2.4 m dish, 25 watt antenna modem, cables
Max capacity: 1024/1024 USD 82,312

Internet access full duplex (symmetric) monthly charges:

64/64	USD 5,000
128/128	USD 6,400
256/256	USD 10,800
512/512	USD 16,500

Internet access asymmetric monthly charges:

256/64	USD 6,049
512/128	USD 8,372
1024/256	USD 12,782
1536/384	USD 17,478

TELECOM FIJI

Internet access full duplex (symmetric) monthly charges
64/64 USD 7,750

FINTEL
Calculation of total cost for Internet access via FINTEL

Bandwidth	FINTEL FJD less VAT	TFL FJD Landline	TOTAL FJD inc VAT	TOTAL USD inc VAT
64	$7,292	$1,052	$9,178	$4,589
128	$12,772	$1,518	$15,719	$7,860
256	$22,216	$2,652	$27,355	$13,677
512	$41,723	$3,290	$49,514	$24,757

Exchange rate FJD 1 = 0.5 USD

Internet access full duplex (symmetric) monthly charges

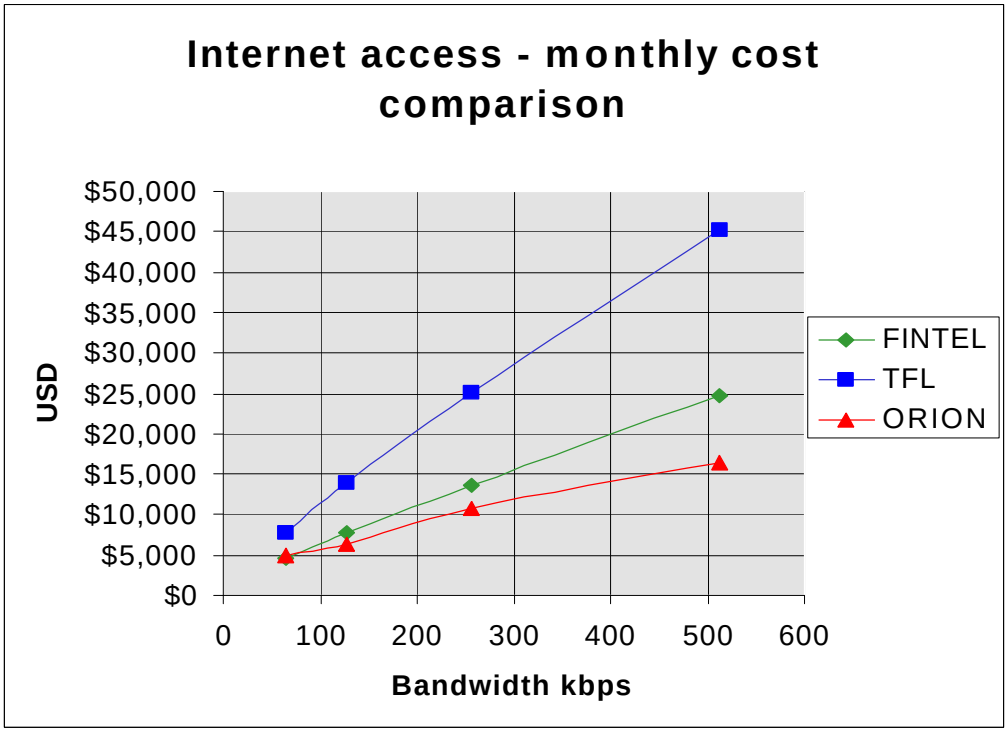
64/64	USD 4,589
128/128	USD 7,860
256/256	USD 13,677
512/512	USD 24,757

COMPARISON OF MONTHLY CHARGES

Monthly USD charges for different carriers.

kbps	FINTEL	TFL	ORION
64	$4,589	$7,750	$5,000
128	$7,860	$13,950	$6,400
256	$13,677	$25,110	$10,800
512	$24,757	$45,198	$16,500

Figure 1 – Graph of monthly USD charges for different carriers.



TELECOM FIJI LTD LEASED LINE CHARGES

It should be noted that the charges for leased lines are more than double when connecting to FINTEL as opposed to other connections in Suva. This is another inhibitor to reducing costs.

Bandwidth kbps	Suva-Suva FJD	Suva-FINTEL FJD	Suva-Suva USD	Suva-FINTEL USD
64	461	1,052	231	526
128	700	1,518	350	759
256	1,400	3,290	700	1,645
512	1,440	3,290	720	1,645
1024	1,440	3,982	720	1,991