UNESCO

Internet Infrastructure and e-Governance in Pacific Islands Countries

A Survey on the Development and Use of the Internet

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"Promoting empowerment and participation in the emerging knowledge society through equitable access, capacity-building and sharing of knowledge"
UNESCO Medium Term Strategy (2002 - 2007)

This Report was commissioned by the UNESCO Office for the Pacific States in Apia, Samoa to provide an up-to-date picture of the development and use of Internet infrastructure in Pacific Member States of UNESCO. UNESCO commissioned a similar study in April 1999[1]. The 1999 study focused on the use of computers, e-mail and the Internet in education, culture and communications. This survey covers Internet infrastructure issues as well as the use of Internet for e-Governance. Special attention is paid to barriers preventing access to the Internet as well as to national development plans for the use of the Internet.

The survey identified a number of other international and regional groups with an interest in Internet infrastructure in Pacific Islands countries. Some are currently engaged in similar surveys.

UNESCO does not wish to duplicate the efforts of others. An effort has therefore been made to identify other interest groups and co-ordinate data collection with them. UNESCO recognises the critically important role that the Internet can play in ensuring citizens of the Pacific States can be active participants in the emerging knowledge society. UNESCO has a special interest in ensuring the Internet is accessible for the advancement of education, science, culture and communications, its areas of competence. UNESCO's role is to assist with the collection and dissemination of information that is useful to policy planners and Governments in Member States.

This report is intended to contribute towards that end.

[1] *Electronic Connectedness in Pacific Islands Countries,* report prepared by Zwimpfer Communications Ltd, Wellington New Zealand, April 1999

Contents

List of Tables

1 Executive Summary

"it was vital to examine the contextual issues in developing countries in order to achieve a truly participative society - not simply one of leaders and followers"

The On-line Governance Survey carried out in 2000 by UNESCO and COMNET-IT drew little response from the Pacific Islands countries. Excluding Australia and New Zealand, only two of the fifteen other UNESCO member states participated in the survey. The report wisely suggested that while the data collected from the developed countries could be construed as a road map for the less-developed countries, it was vital to examine the contextual issues in developing countries in order to achieve a truly participative society - not simply one of leaders and followers.

This survey addresses the contextual issues for Internet development and e-governance for the fifteen UNESCO Pacific Islands member states. While some data was gathered from every member state, the reliability of some of this information must be questioned. The efforts of those who did respond is greatly appreciated, but it is evident the people completing the questionnaires did not always have access to the information requested. This points to a need for some reliable and easily measured statistics on Internet development, information that could be gathered on an annual basis and used to report progress across the region.

" An interesting finding is the widespread interest in seeking to enhance Internet infrastructure "

An interesting finding is the widespread interest in seeking to enhance Internet infrastructure within and between the Pacific Islands countries. All Pacific regional intergovernmental organisations and several international organisations are actively considering ways to enhance Internet infrastructure.[2]

"The heart of the issue for most Pacific Islands countries in 1999 was access. Two years on, the issue remains the same."

The heart of the issue for most Pacific Islands countries in 1999 was access. Two years on, the issue remains the same. With less than 25% of the population of most Pacific Islands having access to the Internet, it is perhaps not surprising that e-governance is not high on these countries' agendas. One country reported a "lack of knowledge on this e-governance service" as a key inhibitor. Underlying these issues of limited Internet access and limited understanding of e-governance, are even more basic issues relating to telecommunications infrastructure, quality of service and costs.

"Just over half of the organisations responding to the survey, have a website"

However, despite these constraints, organisations in the Pacific Islands are finding ways to establish a website. Just over half of the organisations responding to the survey, have a website. Eight of the 15 countries were also able to quote their website URL, suggesting a growing interest within Governments in attempting to make better use of ICT tools.

"Issues of bandwidth and cost (equipment and telecommunications) continue to be perceived as major barriers"

Issues of bandwidth and cost (equipment and telecommunications) continue to be perceived as major barriers preventing more widespread use of the Internet. However, this does not appear to be constraining Pacific Island organisations from planning. Most have a clear idea about how they could expand the use of ICT in their organisation.

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[2] For example, the *Pacific Information and Communication Technologies Needs Assessment and Strategy Planning Workshop,* jointly hosted by SOPAC, PIFS and SPC, held in Noumea, 27-31 August 2001

"Many countries could not identify any e-governance applications"

Many countries could not identify any e-governance applications. Those who could, placed lists of government officials as well as national and regional statistics at the top of the list. They also indicated they were addressing content issues. Computerised databases and digitised Government documents appear to be receiving the most attention. Training of public decision-makers and government officials, and reinforcing ICT training in schools and training institutes were also identified in one third of the countries.

"The biggest inhibitor of e-governance was felt to be the cost of computers and other equipment"

The biggest inhibitor of e-governance was felt to be the cost of computers and other equipment, but this was closely followed by Internet cost issues, slow Internet connections, lack of digitised government information, ownership and monopoly of telecommunication services, availability of training for Government officials and the lack of political awareness of the opportunities.

"Prices varied from US$9-10 for 10 hours of Internet connectivity to US$30-50"

All countries now have some form of Internet access, although pricing in many countries is clearly inhibiting growth. Prices varied from US$9-10 for 10 hours of Internet connectivity to US$30-50. This compares with US$4.30, being a typical cost of 10 hours of Internet connectivity in New Zealand.

Other barriers restricting Internet development are the high cost of international bandwidth and the cost of user equipment. Many countries reported continuing investment in telecommunications infrastructure, but there was little indication how quickly these developments would flow through to improved Internet infrastructure. Few countries appear to have national plans for Internet and telecommunications development; none gave any indication what levels of budget were being committed.

"The next step is to develop national and regional plans"

This research is intended to contribute towards a foundation for moving towards a 'connected Pacific', where the UNESCO goal of "promoting empowerment and participation in the emerging knowledge society through equitable access, capacity-building and sharing of knowledge" can be achieved. The next step is to develop national and regional plans.

2 Background

2.1 1999 Pacific Islands Survey

1999 Survey
"Without access to digital technologies and digital skills, the Pacific Islands nations were very exposed to a digital divide, preventing their peoples from participating in the emerging knowledge economy."

In April 1999, UNESCO (Apia) published the results of a survey on the use of computers, email and the Internet in Pacific Islands Countries. This study revealed that with the exception of Australia and New Zealand Pacific nations were lagging many other countries in the deployment and use of Internet infrastructure. The lack of access to computer equipment and Internet services in the education sector, as well as the low level of teacher skills in information and communication technologies (ICTs), was of particular concern. Without access to digital technologies and digital skills, the Pacific Islands nations were very exposed to a digital divide, preventing their peoples from participating in the emerging knowledge economy.

2.2 Global E-Governance Survey

In March 2000, UNESCO (Paris) published a status poll on government-led initiatives for the provision of information, electronic facilitation of services and public input in the process of government, a group of activities generally referred to as e-governance[3]. Only four Pacific nations responded to this survey[4]. The report concluded that while the developed countries were "evidently on an accelerating spiral of knowledge acquisition and application, as well as the transformation of governance, developing countries are facing formidable hurdles - other than acquiring and deploying ICTs."

E-Governance Survey
"it was vital to examine the contextual issues in developing countries if we are to achieve a truly participative society - not simply one of leaders and followers"

The report observed that while the data collected from the developed countries could be construed as a road map for the less-developed countries, it was vital to examine the contextual issues in developing countries "if we are to achieve a truly participative society - not simply one of leaders and followers. Transforming global governance, therefore, is the ultimate challenge."

This survey of Internet development and e-governance in Pacific Islands countries is intended to contribute towards the development of a global response to this challenge.

2.3 Project Brief

In May 2001, UNESCO (Apia) commissioned a project to update the 1999 Internet survey and assess progress towards e-Governance in Pacific Islands nations. The terms of reference for this project were:

a) to update the electronic connectedness survey of 1999 for the Pacific Island region and countries, with particular focus on Internet infrastructure and use, and obstacles to development;
b) a Pacific Islands update to the UNESCO/COMNET-IT survey on e-Governance;
c) selected cases on the best practices on e-Governance (if any);
d) one or two country case studies on Internet infrastructure,

[3] *On-line Governance Survey Report* - a joint UNESCO and COMNET-IT Project, March 2000
[4] Australia, Cook Islands, New Zealand and Papua new Guinea

policies, applications and use, to be written by Pacific Island Internet experts;

e) easy-to-use resource materials for decision-makers and other non-technical experts on the technical issues related to the development of Internet infrastructure;
f) a checklist for governments seeking to establish and promote the use of the Internet;
g) a list and short characterization of on-going national or regional development activities or projects.

This report records the findings from the first two parts of this brief, i.e. items (a) and (b)

2.4 Questionnaire

A questionnaire (Appendix 16) was used for data collection. This was distributed by email and facsimile to 161 potential respondents in 15 UNESCO Pacific Islands Member States. This included members of UNESCO national commissions, Governments, NGOs and private sector organisations. A special effort was made to reach the people who were in the best position to answer the specific questions about Internet infrastructure and e-governance. As the initial deadline (31 July 2001) for the questionnaires approached, an intensive effort was made to make telephone contact with all potential respondents. A total of 134 were reached by telephone, but despite many promises and after a number of extensions to the deadline, only 37 completed questionnaires were returned by the end of September 2001. This represents only 20% of the number distributed. However, at least one response was received from every Pacific Islands UNESCO member state.

"A special effort was made to reach the people who were in the best position to answer the specific questions about Internet infrastructure and e-governance."

The responses received, listed by Country, are summarised in Table 2-1.

Table 2-1: Questionnaire Responses

Country	Questionnaires Sent	Responses Received
Cook Islands	11	1
Federated States of Micronesia	5	1
Fiji	30	4
Kiribati	7	2
Marshall Islands	11	1
Nauru	6	1
Niue	10	4
Palau	4	2
Papua New Guinea	20	5
Samoa	18	4
Solomon Islands	8	1
Tokelau	1	1
Tonga	12	4
Tuvalu	6	3
Vanuatu	12	3
	161	**37**

Even though only 20% of the questionnaires were returned, at least one response was received from all 15 UNESCO Pacific Islands Member States

2.5 Internet Research

Information was also collected through an Internet search. This proved particularly useful in identifying initiatives and other organisations with an interest in addressing Internet connectivity in the Pacific region.

Table 2-2: Regional and International Organisations involved in Internet Development

Organisation	Activity	Contact
Regional Inter-Governmental Organisations		
Council of Regional Organisations in the Pacific (CROP)	Co-ordinates work programmes and policies of regional inter-Governmental organisations (FFA, PIDP, PIFS, SPC, SOPAC, SPREP, USP, TCSP)	www.spc.org.nc/coastfish/Asides/Other_orgs/spocc.htm
Forum Fisheries Agency (FFA)	Vessel Monitoring System (VMS), set up to monitor the position of vessels registered with FFA, licensed and fitted with Automatic Location Communicators (using Inmarsat-C onboard equipment). This involves a network between the FFA based in Honiara and FFA member countries.	www.ffa.int
Pacific Islands Forum Secretariat (PIFS)	Fosters co-operation between governments and international organizations	www.forumssec.org.fj
Secretariat of the Pacific Community (SPC)	SPC has an integrated corporate network to share information between the SPC Suva and Noumea sites. It allows the Suva site to access the Internet via Noumea; this reduces the costs of firewalls and anti-virus software as there is only one point of connection to the Internet. SPC hosted an ICT needs assessment and strategy workshop in Noumea, August 2001	www.spc.org.nc
South Pacific Applied Geosciences Commission (SOPAC)	To improve the well being of the peoples of Pacific Islands through the application of geoscience to the management and sustainable development of their non-living resources. Jointly sponsored the Noumea ICT workshop	www.sopac.org.fj Franck Martin Franck@sopac.org
South Pacific Regional Environment Programme (SPREP)	SPREP and UNEP are conducting a feasibility study on a proposed Pacific Environment (and Sustainable Development) Network, based on the Mercure UNEPNet	www.sprep.org.ws/
University of the South Pacific (USP)	Provides tertiary education to Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu and Vanuatu. USPNet2000 is a private communications network, owned and operated by USP. The network is carried by INTELSAT to USP member countries, via earth stations at each country's USP campus. The network provides audio, data, video and telephony services; supports USP's flexible education programme; facilitates regional administration and supports regional research.	www.usp.ac.fj

Regional Non-Governmental Organisations

Pacific Islands Chapter of the Internet Society (Pacific ISOC)	Advises governments and the public on matters of significant interest to Pacific Island people	www.spc.int/picisoc
Pacific Islands Telecommunications Association (PITA)	Represents the telecommunication interests of the small islands nations in the Pacific region.	www.pita.org.fj

United Nations and Other International Agencies

Asia Pacific Development Information programme (APDIP)	Promoting Internet capacity building in developing countries. November 2001 announced ICT R&D Grants.	www.apdip.net
United Nations Development Programme (UNDP)		edo.stork@undp.org
United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)	UN-ESCAP initiated a project to promote trade and investment using ICT tools, initially involving an assessment of "e-readiness" for trade and investment in six Pacific Island countries. The results of the survey were discussed at a sub-regional workshop in Fiji in November 2001, with the objective of developing a "Regional Programme for ICT Technical Training for Trade and Investment".	www.unescap.org
United Nations Environment Programme (UNEP)	UNEP.Net delivers authoritative environmental information. UNEP has established a satellite network in the Atlantic and Indian ocean regions and is studying the feasibility of extending this to the Pacific region.	www.unep.org/
United Nations Educational, Scientific and Cultural Organization (UNESCO)	Promoting world peace through international cooperation in the areas of education, science, culture, communication and information services. The focus for UNESCO's webworld website is on computer and information developments including the internet. There are 15 Pacific Island member states as well as Australia and New Zealand; these countries are supported by the UNESCO office in Apia, Samoa. During the last five years, the Apia office has been active in promoting internet development in particular through research and capability development (workshops, training and projects).	www.unesco.org/webworld/
European Community	European Community has a long record of supporting the Forum Fisheries Agency and the Secretariat of the Pacific Community.	chacmool.sdnp.undp.org/pacific/forumsec/news/2001/Aug09.htm
World Bank	Funding an Aus$1.5 billion distance education initiative using ICTs, in partnership with AUSAID, referred to as the Virtual Colombo Plan	www.worldbank.org Graham Barrett gbarrett@worldbank.org
Small Island Developing States Network (SIDSnet)		www.sidsnet.org

3 Scope

The survey included all UNESCO Pacific sub-region member states, excluding Australia and New Zealand (Table 3-1).

Table 3-1: UNESCO Pacific Sub-Region Member States

Country	Population*
Australia	19,472,189
Cook Islands	15,600
Federated States of Micronesia	115,000
Fiji	800,000
Kiribati	8,000
Marshall Islands	50,840
Nauru	10,000
New Zealand	3,792,654
Niue	1,750
Palau	19,200
Papua New Guinea	5,100,000
Samoa	167,000
Solomon Islands	410,000
Tokelau	1,507
Tonga	97,784
Tuvalu	10,943
Vanuatu	186,700

** as reported by survey respondents*

The focus for the survey was on Internet Infrastructure and e-Governance. The objective was to determine the extent to which Internet services had been established in each country and the uses to which they are being put. Special attention was paid to any barriers that might be inhibiting the development of Internet infrastructure or use.

E-governance was highlighted as one particular application area. The definition of E-governance used for the survey was:

> *"computer mediated (Internet, e-mail, CD-ROM…) information, services or dialogue between the Government and citizens. It is not necessary that any telecom link be involved. E.g. a regularly updated stand-alone information desk/kiosk could fulfil an e-governance function."*

"The effective delivery of UNESCO programmes already depends on member states having access to ICTs. In the future, this is expected to become even more important."

A further objective was to identify other research or interests relating to the development of Pacific Internet infrastructure. UNESCO is aware that it is just one agency in the Pacific with an interest in this area. All sectors within UNESCO, including education, natural science and social science, culture and communications recognise the increasing importance of reliable and affordable information and communications technologies (ICTs). The effective delivery of UNESCO programmes already depends on member states having access to ICTs. In the future, this is expected to become even more important.

4 Access to Internet Services

"The debate in Australia and New Zealand has now moved from basic access to the quality of access, and at the top of the user needs list is bandwidth."

"

Reports from Sweden that a goal of 5MBps connections for every household by the year 2005 add further fuel to the level of dissatisfaction in countries struggling with low speed dial-up connections."

Developed countries such as Australia and New Zealand are rapidly approaching a level of access where, from a technology perspective, every citizen has access to the Internet. With Internet access being available from any telephone connection in the country, at a standard usage charge, limitations on access arise because there is no computer, or citizens do not have the skills to use the Internet. The debate in Australia and New Zealand has now moved from basic access to the quality of access, and at the top of the user needs list is bandwidth. Users no longer regard 9600bps as an acceptable connection speed. In New Zealand, in an effort to upgrade rural telecommunications infrastructure, Telecom New Zealand, the largest provider of telecommunication services, has recently announced that it will commit to upgrading all telephone lines to 14.4kbps. This has been greeted with much scorn, in particular by rural users. Urban users are increasingly being offered high speed Internet connections over their existing telephone lines using a technology called ADSL (Asymmetric Digital Subscriber Line) as well as a choice of telecommunication provider. Reports from Sweden that a goal of 5MBps connections for every household by the year 2005 add further fuel to the level of dissatisfaction in countries struggling with low speed dial-up connections.

The issue then is what is meant by Internet Access? For the purposes of this research, a relatively low benchmark of 9600 bps was set. This is the minimum considered necessary for sending and receiving email in an Internet environment. Web access at anything less than 24kbps is unacceptable with most Internet browsers. Any computer modem supplied during the last five years would be capable of connecting at speeds between 34kbps and 56kbps; for individual dial-up connections these are now considered as standard.

Given these qualifications about what is meant by Internet access, Pacific Islands countries reported as follows:

Table 4-1: Internet Access in Homes*

None have access	Less than 25%	Between 25% and 50%	Between 50% and 75%	Over 75%
	Cook Islands	Palau		
	FSM	Vanuatu		
	Fiji			
	Kiribati			
	Marshall Islands			
	PNG			
	Samoa			
	Solomon Islands			
	Tokelau			
	Tonga			
	Tuvalu			

(* Data not provided for Nauru)

Table 4-2: Internet Access in Offices or Places of Work*

None have access	Less than 25%	Between 25% and 50%	Between 50% and 75%	Over 75%
	Cook Islands	Fiji	FSM	Vanuatu
	Kiribati	Samoa	Palau	
	Marshall Islands			
	PNG		Tokelau	
	Solomon Islands	Tonga	Tuvalu	

(* Data not provided for Nauru)

Table 4-3: Internet Access in Schools*

None have access	Less than 25%	Between 25% and 50%	Between 50% and 75%	Over 75%
Tuvalu	Cook Islands			
	FSM			
	Fiji			
	Kiribati			
	Marshall Islands			
	Palau			
	PNG			
	Samoa			
	Solomon Islands			
	Tokelau			
	Tonga			
	Vanuatu			

(* Data not provided for Nauru)

Table 4-4: Internet Access in Public Access Centres*

None have access	Less than 25%	Between 25% and 50%	Between 50% and 75%	Over 75%
Solomon Islands	Cook Islands			Niue
Tokelau	FSM			Vanuatu
Tuvalu	Fiji			
	Kiribati			
	Marshall Islands			
	Palau			
	PNG			
	Samoa			
	Tonga			

(* Data not provided for Nauru)

"while all countries have some level of Internet access, less than 25% of the population have access in their homes"

Excluding Papua New Guinea (PNG), the total population of the Pacific Islands countries is just under 1.9 million. PNG adds a further 5.1 million. The data reported in Table 4-1 suggests that while all countries have some level of Internet access, less than 25% of the population have access in their homes (except for Palau and Vanuatu, where access is somewhat higher). Table 4-2 indicates that more people have access through their work. The relatively high levels of access reported by some countries suggest that this question may have been interpreted as a percentage of businesses rather than total population. Table 4-3suggests that schools are not receiving any special attention, with similar access rates to homes. Public access facilities in Niue and Vanuatu (Table 4-4) appear to be reaching a large percentage of their respective populations (1750 in Niue and 186,700 in Vanuatu).

5 Telecommunications Connectivity

Almost without exception, the 37 organisations that responded to the Questionnaire indicated that they use telephone, facsimile and Internet e-mail services on a daily basis. However, the quality of these services in a number of countries is somewhat alarming, especially in the case of facsimile. Facsimile is not a new technology and has been proven to work reliably over standard telephone connections for well over two decades. However, more than one country was unable to return the Questionnaire by fax. One resorted to physical mail, another faxed theirs to the Apia Office, after many failed attempts to establish a connection to New Zealand. Others were only able to transmit two pages at a time before the connection broke down. Another was restricted in terms of their access to international connections because a high profile political event was consuming all outgoing international lines except two.

"Given that many Pacific nations were amongst the first in the world to benefit from modern satellite communications over 20 years ago, it is ironic that in this knowledge society, a humble fax can still not be sent reliably between some Pacific Islands countries."

This is a sad indictment on the telecommunication carriers in the region. Given that many Pacific nations were amongst the first in the world to benefit from modern satellite communications over 20 years ago, it is ironic that in this knowledge society, a humble fax can not be sent reliably between some Pacific Islands countries.

Attempts to avoid the use of fax were also largely unsuccessful. Over 80% of the Questionnaires were distributed as e-mail attachments. Less than 5% were returned by email. With one or two exceptions, there was no response at all for those sent by email. Telephone follow up indicated that recipients were unable to open .pdf or zipped attachments. All requested that the Questionnaire be re-sent as a standard Word '97 document, or faxed.

"If Internet e-mail is to become a reliable and trusted form of communications in the Pacific, serious consideration must be given to agreeing some standards in terms of application software and protocols for the use of attachments."

This signals another potentially serious problem with Internet communications. Just because a person has an email address does not mean that they have the software or the skills to read attachments. It was evident from this survey that Word '97 is currently the most widespread word processing package in use in the Pacific. If Internet e-mail is to become a reliable and trusted form of communications in the Pacific, serious consideration must be given to agreeing some standards in terms of application software and protocols for the use of attachments.

The large investment in undersea cable infrastructure in the Pacific in recent years is unlikely to deliver any immediate benefits for the Pacific Island nations. Even though the 480 Gigabit per second Southern Cross Cable, which went live in November 2000, transits Fiji, the advantage for the Internet users in Fiji and the neighbouring countries of such a huge amount of bandwidth remains yet to be seen.[5] The Federated States of Micronesia hopes to benefit from the new 640 Gigabit per second Australia-Japan Cable (AJC) that went live at the end of 2001. The cable transits GUAM, but there appears to be no specific plan for linking the 607 FSM islands to take advantage of this bandwidth.[6]

[5] Tuqiri, Mere “Fiji’s Broadband Future”, Pacific Islands.cc, January 2001 (http://www.pacificislands.cc/pm12001)
[6] http://www.fm/Telecom.htm

6 Web Presence

"Just over half of the organisations participating in the survey have web sites."

The extent to which organisations are using the web as part of their own business is an indicator of Internet development. Just over half of the organisations participating in the survey have web sites (Table 6-1).

Table 6-1: Internet Web Sites
(for organisations responding to the survey)

Country	Organisation	Website
Cook Islands	Elijah Communicatons	www.webcentral.co.ck
		www.radio.co.ck
Fiji	University of the South Pacific	www.usp.ac.fj
	Fiji Television	www.fiji-tv.com
	Fiji Museum	www.fijimuseum.org.fj
Kiribati	Telecom Services Kiribati Limited	www.tskl.net.ki
Palau	Palau National Communications Corporation	www.palaunet.com
Marshall Islands	National Telecommunications Authority	www.ntamar.com
Niue	Internet Users Society Niue	www.niue.nu
PNG	Pacific Mobile Communications	www.tiare.net.pg
	South Pacific Post Limited	www.postcourier.com.pg
	Telikom	www.telikompng.com.pg
Samoa	South Pacific Regional Environment Programme	www.sprep.org.ws
Solomon Islands	Solomon Telekom Co Ltd	www.solomon.com.sb
Tonga	Tonga Communications Corporation	www.tcc.to
	Office of the Prime Minister	www.pmo.gov.to
Tuvalu	Tuvalu Government	www.tuvalu.tv
Vanuatu	Telecom Vanuatu	www.tvl.net.vu
	Vanuatu Broadcasting and Television Corporation	www.vbtc.com.vu

7 Barriers within Organisations

A range of possible barriers was listed and respondents were asked to identify which ones were constraining the use of information and communication technologies in their organisation. Respondents were asked to distinguish between major barriers and other barriers. The results are summarised below:

Table 7-1: Major Barriers within Organisation

number of organisations identifying as major barrier ➔

Barrier	1	2	3	4	5	6	7	8	9	10	11	12
Cost of Equipment	■	■	■	■	■	■	■	■	■	■	■	■
Technical support	■	■	■	■	■	■	■	■				
Reliable power supply	■	■	■	■								
Access to telephone network	■	■	■									
Internet service providers	■	■	■	■	■							
Telecommunications bandwidth	■	■	■	■	■	■	■	■	■	■	■	
Staff knowledge of equipment	■	■	■	■	■							
Staff understanding re value of use	■	■	■	■	■	■						
Online resource material	■											
Cost of telecommunications within country	■	■	■	■	■	■	■	■	■	■		
Cost of International telecommunications	■	■	■	■	■	■	■	■	■	■	■	
Organisation structure	■	■										

"costs are seen as the greatest barriers, whether this be for ICT equipment or telecommunications usage"

It is clear from Table 7-1 that costs are seen as the greatest barriers, whether this be for ICT equipment or telecommunications usage. Bandwidth has also been registered as a concern in five countries. Particular barriers for each country are summarised in Table 7-2.

Table 7-2: Major Barriers within each Country

Barrier	Cook Islands	FSM	Fiji	Kiribati	Marshall Islands	Nauru	Niue	Palau	PNG	Samoa	Solomon Islands	Tokelau	Tonga	Tuvalu	Vanuatu
Cost of Equipment			✓	✓			✓		✓	✓	✓		✓	✓	✓
Technical support		✓		✓			✓		✓						
Reliable power supply							✓		✓			✓			
Access to telephone network							✓		✓						
Internet service providers			✓				✓		✓						
Telecommunications bandwidth		✓	✓				✓		✓	✓		✓		✓	
Staff knowledge of equipment									✓						
Staff understanding re value of use						✓			✓						
Online resource material															
Cost of telecommunications within country			✓			✓	✓		✓	✓			✓	✓	✓
Cost of international telecommunications		✓	✓			✓	✓	✓	✓	✓			✓	✓	✓
Organisation Structure															✓

8 Development Plans

Most organisations that responded to the survey have specific plans for expanding the use of ICT in their organisations. Some examples are:

- Online broadcasting
- Online magazine
- Digital editing
- Expanding telecommunications infrastructure to remote islands
- Automating national archives
- Networking all computers for Internet access
- Wide area network linking education centres on outer islands
- Improved communication links with regional/international education bodies
- Increase Internet access for schools
- Improve outer island communication equipment
- Establish sports information centre
- Develop sports database
- Establish a website
- Provision of unlimited flat-rate access to promote development of e-governance and improve Internet access
- Catalogue museum collections on computer
- Provide specialist training for IT staff
- Trial audio and videoconferencing to selected remote schools
- Establish a new broadband data network
- Plan to use online education services for staff training and development, as it is cheaper than local or overseas training
- Install a network system so that everyone has access to the information and Internet resources
- Upgrade remote links for corporate LAN/WAN to another 6 provincial Business Centres
- Enable use of email and other corporate resources such as online queries, faults, etc.
- Plans for a GSM mobile system
- New network for accounts and file systems
- Ensure ICT is available to everybody at least costs
- Introduce Internet and email to all secondary schools
- Use of satellite communications for regional IP network
- Replacement of old computers
- Develop CD-DVD production capabilities
- News online

"we have a five-year plan to establish a second press site. However, the local telecom provider is too unreliable to make such an investment. If it is privatized by a world reputable organisation, we would re-consider the five year plan"

This rather long list of development plans indicates widespread interest and energy in expanding the use of ICTs in Pacific countries.

9 E-governance

"our Government has recently created a committee to build e-government applications, made of agencies and the community (business) to build applications combined with cheap domestic access"

"we have recognised the need to develop e-governance but have not embarked on any specific programme initiatives"

Implementation of e-governance strategies requires established ICT infrastructure. This is required both within Government, where resources and services are produced and within the community, where citizens are able to access Government resources and information. The survey indicates that Government agencies in most Pacific Island nations are making progress at the "production" end. For example, in one country it was reported that there are 339 computers in 16 Government departments; 43 of these computers have Internet access. However, access by citizens relies on local telecommunications infrastructure, and in many cases, this is either not in place or is perceived as being too expensive.

A few countries are already starting to provide limited e-governance applications (Table 9-1). However, many had not yet addressed the issue.

Table 9-1: E-governance Applications

number of countries providing application →

Application	1	2	3	4	5	6	7	8
List of Government/ IGO agencies and officials	■	■	■	■	■	■	■	■
National Statistics	■	■	■	■	■	■		
Regional Statistics	■	■	■	■				
National Events	■	■	■					
Regional Events	■	■	■	■				
National Archives	■	■						
Laws and Regulations	■	■	■					
Counting of Election votes	■	■						
Feedback by citizens	■	■	■					
Payment of bills								
Fault reporting	■	■						
Government forms	■	■						
Museum	■							

Table 9-2: E-governance Applications by Country

Application	Cook Islands	FSM	Fiji	Kiribati	Marshall Islands	Nauru	Niue	Palau	PNG	Samoa	Solomon Islands	Tokelau	Tonga	Tuvalu	Vanuatu
List of Government/IGO agencies & officials	✓		✓			✓			✓	✓	✓		✓		✓
National Statistics			✓						✓	✓	✓		✓		✓
Regional Statistics									✓	✓	✓		✓		✓
National Events			✓				✓		✓	✓			✓		
Regional Events			✓				✓		✓	✓					
National Archives									✓	✓			✓		
Laws and Regulations									✓		✓				
Counting of Election votes			✓						✓	✓					
Feedback by citizens									✓	✓	✓				
Payment of Bills									✓	✓					
Fault Reporting									✓	✓					
Government Forms									✓	✓			✓		
Museum			✓												

10 Government Websites

The establishment of Government websites is an early sign that Governments are embarking on a path to deliver information and services electronically to their citizens. Governments with websites are listed in Table 10-1.

Table 10-1: Government Web Sites

Country	Content	Website
Cook Islands	PM's Office	www.cook-islands.gov.ck
	Tourism	www.cook-islands.com
	Development Investment Board	www.cookislands-invest.com
FSM	Government news	www.fsmgov.org
	Foreign Investment	www.fsminvest.fm
	Tourism	www.visit-fsm.org
Fiji	General Information	www.fiji.gov.fj
Kiribati	Tourism	www.tskl./kiribati.net.ki
Niue	Government news	www.gov.nu
PNG	Government	www.pngonline.gov.pg
	Government	www.gov.pg
Solomon Islands	General information, investment	www.commerce.gov.sb
	Community development	www.peoplefirst.net.sb
Tonga	Office of the Prime Minister	www.pmo.gov.to

11 Access to Government Services

Table 11-1 indicates that Pacific Island countries are addressing supporting infrastructure issues relating to e-governance.

Table 11-1: Access to Government Services

number of countries developing activity →

Activity	1	2	3	4	5	6	7	8
Building up computerised databases	■	■	■	■	■	■	■	■
Computerising/digitising of Government documents/publications	■	■	■	■	■	■	■	
Installing public Internet access terminals	■	■	■					
Government subsidising of Internet service	■	■	■					
Government subsidising of computer purchases (incl tax and customs exemptions)	■							
Training of public decision-makers and government officials re ICT	■	■	■	■	■			
Reinforcing ICT training in schools, training institutes & universities	■	■	■	■	■	■		
Intranet between Ministries	■	■						

Table 11-2: Access to Government Services by Country

Activity	Cook Islands	FSM	Fiji	Kiribati	Marshall Islands	Nauru	Niue	Palau	PNG	Samoa	Solomon Islands	Tokelau	Tonga	Tuvalu	Vanuatu
Building up computerised databases	✓						✓	✓	✓	✓			✓	✓	✓
Computerising/digitising of Government documents/publications	✓						✓	✓	✓	✓			✓	✓	✓
Installing public internet access terminals				✓		✓	✓			✓			✓	✓	
Government subsidising of Internet services							✓						✓	✓	
Government subsidising of computer purchases (incl tax and customs exemptions)							✓						✓	✓	✓
Training of public decision-makers and government officials re ICT.			✓				✓			✓			✓	✓	✓
Reinforcing ICT training in schools, training institutes & universities			✓				✓			✓			✓	✓	✓
Intranet between Ministries				✓					✓						

12 Legislation

Table 12-1 summarises the current position with respect to the development of legislation for regulating electronic data and/or digital media in each of the Pacific Islands countries. Examples of legislation quoted were data protection (privacy), rights of access, copyright and ICT-misuse (such as pornography).

Table 12-1: Status of Legislation*

Country	
Cook Islands	Copyright Bill enacted
Federated States of Micronesia	No legislation
Fiji	Copyright legislation in place
Kiribati	Legislation being discussed
Marshall Islands	Not specified
Nauru	No legislation
Niue	No legislation
Palau	Copyright laws are being discussed
Papua New Guinea	Laws enacted covering data protection, rights of access, copyright and ICT-misuse.
Samoa	Laws enacted covering rights of access and copyright. Legislation under discussion regarding ICT misuse.
Solomon Islands	Not specified
Tokelau	Not specified
Tonga	Laws enacted covering data protection, right to access, copyright and ICT misuse
Tuvalu	Some copyright law in place
Vanuatu	Legislation enacted covering right to access, copyright and ICT-misuse

**based on information provided by survey respondents; data not independently validated*

"There is no urgency to embrace the opportunities presented by technology by legislators, civil servants, etc. The problem remains that the perception is it is very costly to change, not realising that once change in the way things are done is complete, greater benefit, efficiency and productivity may arise"

13 E-governance Inhibitors

Most respondents identified numerous major barriers inhibiting the development of e-Governance initiatives. This is illustrated in Table 13-1. It is evident that there is no quick fix. Careful planning will be required to address all the barriers in parallel if Pacific Island countries are to benefit from these developments.

Table 13-1: Major Barriers inhibiting e-Governance

number of countries reporting as major barrier ➔

Barrier	1	2	3	4	5	6	7	8	9	10
High cost of Internet services	■	■	■	■	■	■				
Slow Internet connections	■	■	■	■	■	■				
Unreliable Internet connections	■	■	■							
Lack of digitised government information	■	■	■	■	■	■	■			
Cost of computers and other equipment	■	■	■	■	■	■	■	■	■	
Ownership and monopoly of telecom services	■	■	■	■	■	■				
Availability of technical support	■	■	■	■	■					
Availability of training opportunities for Government officials	■	■	■	■	■	■				
Lack of political awareness of the opportunities	■	■	■	■	■	■				
Staff knowledge of equipment	■	■	■	■						
Staff understanding regarding the value and use of the Internet	■	■	■	■						

Table 13-2: Major Barriers inhibiting e-Governance by Country

Barrier	Cook Islands	FSM	Fiji	Kiribati	Marshall Islands	Nauru	Niue	Palau	PNG	Samoa	Solomon Islands	Tokelau	Tonga	Tuvalu	Vanuatu
High Cost of Internet services			✓	✓		✓		✓	✓	✓			✓	✓	✓
Slow internet connections		✓	✓	✓			✓		✓	✓			✓	✓	
Unreliable internet connections				✓			✓		✓	✓			✓		
Lack of digitised information	✓	✓	✓	✓		✓	✓		✓					✓	✓
Cost of computers and other equipment			✓	✓		✓	✓		✓	✓	✓		✓	✓	✓
Ownership and monopoly of telecom services		✓	✓	✓		✓	✓		✓				✓		✓
Availability of technical support		✓		✓		✓			✓		✓				✓
Availability of training opportunities for Government officials	✓	✓		✓	✓	✓			✓		✓				
Lack of political awareness of the opportunities	✓	✓		✓	✓	✓	✓		✓	✓	✓				✓
Staff knowledge of equipment				✓	✓	✓			✓		✓				
Staff understanding regarding the value and use of the Internet				✓	✓	✓			✓		✓				✓

14 Internet Service Providers

Many of the barriers to e-governance are directly dependent on issues relating to the provision of Internet access. The following Table lists the Internet Service Providers in each of the Pacific Islands states.

Table 14-1: Internet Service Providers (by Country)

Country	ISPs	Parent Organisation/ Structure*	Web Address	Approx. Customer base	Date service first offered
Cook Islands	Oyster	Telecom Cook Islands	www.oyster.net.ck	893	September 1997
FSM	FSM Telecommunications Corporation	Public Corporation	www.fm	n.a.	n.a.
Fiji	Internet Services	Business unit of Telecom Fiji Limited	www.is.com.fj	3500	1996
Kiribati	Telecom Services Kiribati Limited (TSKL)	Government owned	www.tskl.net.ki	500+	September 1998
Marshall Islands	IT&E Overseas, Inc (Guam)	National Telecommunications Authority (private corporation with significant Government ownership)	www.talaya.com www.ite.net	n.a.	October 1996
Nauru	Cenpac Inc.	Nauru Phosphate Royalties Trust	www.cenpac.net.nr	n.a.	1998
Niue	Internet Users Society Niue	Non-profit Foundation	www.niue.nu	200	June 1997
Palau	Palau National Comm. Corp.	Semi-Autonomous Government owned	www.palaunet.com	1500	June 1997
PNG	Daltron Electronics	Daltron Electronics Limited	www.daltron.com.pg	7000	1998
PNG	Datec	Datec (PNG) Ltd	www.datec.net.pg	5580	1998
PNG	DataNet	Online South Pacific Ltd	www.online.net.pg	7000	1998
PNG	Global Net	Global Technologies Limited	www.global.net.pg	5000	1999
PNG	High Tech Industries	Data General Computing	www.dg.com.pg www.hightech.com.pg	720	2001
PNG	Tiare		www.tiare.net.pg	n.a.	1998
Samoa	CSL	Computer Service Limited	www.samoa.ws	2000	February 1998
Samoa	iPasifika	IPasifika Co Ltd	www.ipasifika.net	500	January 2000
Samoa	LeSamoa	Lesa's Telephone Service	www.lesamoa.net	500	October 1998
Solomon Islands	Solomon Telekom Co Ltd	Private sector	www.solomon.com.sb	600	1996/7
Tokelau	Teletok	Telecommunications Tokelau Corporation	Discussing with ICANN	n.a.	n.a.
Tonga	Kalianet	Tonga Communications Corporation (TCC)	www.tcc.to	1200	1997
Tuvalu	Tuvalu ISP	Government owned	www.tuvalu.tv	254	October 1999
Vanuatu	Telecom Vanuatu Ltd	Private sector	www.tvl.net.vu	1020	1996

**Refer also to Table 18-1 for information on regulatory environment in each country*

15 Internet User Pricing

"I don't know how much it is, but it is too high!"

One of the issues identified in Table 13-1 is the cost of use. This is frequently quoted as one of the most critical factors. Irrespective of whether telecommunication and Internet Service providers are Government or privately owned, in most Pacific Islands nations telecommunication services are provided on a monopoly basis. The lack of choice of provider naturally leads users to feel that they are being charged too much for access services. Table 15-1 summarises the current pricing of Internet services. New Zealand charges are quoted as a benchmark.

Table 15-1: Internet Service Pricing
(All prices in US$, as at 16 August 2001)

Country	ISPs	Usage based Price	Minimum monthly price	Unlimited Access (dial-up)	Monthly charge (dedicated)	Non profit Organisations
Cook Islands	Telecom Cook Islands (Oyster)		$8.60 for 4 hrs $25.80 for 25 hrs $51.60 for 60 hrs (then $3/ hr)			
FSM	FSM Telecom Corporation		$19.95 for 5 hrs (then $1.95/hr)			
Fiji	Telecom Fiji (Internet Services)		$8.91 rental & $2.27 per hr used $34.65 for 15 hrs $54.45 for 25 hrs $79.20 for 40 hrs (then $2.77/hr)	$24.20/ month (Suva only).	$222.75/ month for a dial up PPP connection	$148.50/ month for a dial-up PPP connection
Kiribati	TSKL		$16.96 rental & $4.26/hr			
Marshall Islands	IT&E	$3.00/hr	$25.00/ month for 1 hour and then $3.00 per hr			
Nauru	Cenpac		$27.00 for 10 hrs $55.00 for 50 hrs $75 for 75 hrs (then $2.70.hr)			
New Zealand	**Telecom Xtra**	**$1.08/hr**	**$4.30 for 10 hrs (then $1.08/hr)**	**$10.80/ month**		
Niue	Internet Users Society Niue	FREE to all residents				
Palau	Palau National Comm. Corp.	-$3.45 to $5.00/hr.	$15.00 for 2 hrs $30.00 for 8 hrs $99.00 for 28 hrs $250 for 75 hours $500 for 175 hours			
PNG	Daltron Electronics	$1.08/hr peak $0.72/hr off peak.				
PNG	Datec		$11.55 for 10 hrs $19.80 for 20 hrs (then $1.05/hr)	$33.00/ month		

PNG	Online South Pacific (DataNet)					
PNG	Global Net		$12.00/ month & $0.66/hr peak & $0.30/hr off peak $24.00/ month & $0.59/hr peak & $0.27/hr off peak $60.00/ month & $0.53/hr peak & $0.24/hr off peak		$150.00/ month for a leased line supporting up to 64k.	
PNG	High Tech Industries (Data General Comput)		$2.70 for 3 hrs (then $0.90/hr) $7.50 for 10 hrs (then $0.90 /hr) $14.40 for 20 hrs (then $0.90/hr) $30.00 for 50 hrs (then $0.75/hr) $54.00 for 100 hrs (then $0.54/hr)			
Samoa	CSL		$9.00 for 20 hrs $24.00 for 80 hrs $39.00 for 90 hrs	$90.00/ month.		All charges reduced by 50%.
Samoa	iPasifika		$9.90 for 8 hrs (then $0.99/hr) $19.80 for 20 hrs (then $0.99/hr) $44.70 for 60 hrs (then $0.99/hr) $74.70 for 120 hrs (then $0.66/hr) $99.00 for 200 hours (then $0.66/hr)	$132.00/ month	$264/ month for a dedicated ISP modem $495/ month for a dedicated ISP routed port.	
Samoa	LeSamoa	$1.50/hr peak $0.75/hr off peak				
Solomon Islands	Solomon Telekom Co Ltd		$5.70/ month and $0.10/min peak and $0.05/min off peak $38.00 for 10 hrs $190 for 50 hrs (then $3.80/hr peak & $2.85/hr off peak)			$9.50/ month for 10 hrs (then $0.95/hr)
Tokelau	Teletok		$56.76/hr			
Tonga	Tonga Communic-ations Corporation		$9.40 for 2 hrs (then $4.70/hr) $16.45 for 5 hrs (then $4.70/hr) $32.90 for 13 hrs (then $2.82/hr)		$470.00/ month for a 32kps dedicated line $1057.50/ month for a 64kps dedicated line.	$141.00/ month for a 32kps dedicated line $282.00/ month for a 64kps dedicated line.
Tuvalu	Tuvalu ISP	$2.23/hr	$5.30 per month and $0.04 cents per minute	$106.00 per month		
Vanuatu	Telecom Vanuatu Ltd		$4.25/hr for 5 hrs $3.18/hr for 10 hrs $2.30/hr for 20 hrs $1.95/hr for 40 hrs			Internet access is free for schools between specified times.

Table 15-2: Cost of 10 hours Dial-Up Access per ISP ($US)

Country	ISPs	10 hours Dial-Up Access*
Cook Islands	Telecom Cook Islands	$23.20
FSM	FSM Telecom Corporation	$29.70
Fiji	Telecom Fiji	$31.61
Kiribati	TSKL	$59.56
Marshall Islands	IT&E	$52.00
Nauru	Cenpac	$27.00
New Zealand	**Telecom Xtra**	**$4.30**
Niue	Internet Users Society Niue	$0.00
Palau	Palau National Comm. Corp.	$40.00
PNG	Daltron Electronics	$10.80
PNG	Datec	$11.55
PNG	Online South Pacific	
PNG	Global Net	$18.60
PNG	High Tech Industries	$11.70
Samoa	CSL	$9.00
Samoa	iPasifika	$9.98
Samoa	LeSamoa	$15.00
Solomon Islands	Solomon Telekom Co Ltd	$38.00
Tokelau	Teletok	$567.60
Tonga	Tonga Communications Corporation	$39.95
Tuvalu	Tuvalu ISP	$29.30
Vanuatu	Telecom Vanuatu Ltd	$31.80

* Note: Currency conversions as at 16 August 2001. How the cost of 10 hours dial-up access is calculated varies depending on the rates charged by each ISP. Some ISPs offer 10-hour packages for a set price. Alternatively, when the number of hours offered in a package is less than 10, that package price is used. The cost of using additional hours is then added to the basic package price hours to total 10 hours internet access. Thus if an ISP charges $10.00 for 8 hours access and $2.00 for each hours thereafter, the cost of 10 hours access will be $14.00: [$10.00 (8 hours) plus $4.00 (extra 2 hours)].

16 Internet Barriers

Table 16-1 clearly demonstrates that cost issues are perceived as the major barriers to the development of Internet services.

Table 16-1: Major Barriers facing Internet Development

number of countries reporting as major barrier →

Barrier	1	2	3	4	5	6	7	8	9	10
Cost of Equipment	■	■	■	■	■	■	■	■	■	
Technical support	■									
Reliable power supply	■	■								
Quality of Internet connection	■									
Access to telephone network	■	■	■							
Internet service providers	■	■								
People with technical skills	■									
People with content skills	■	■								
User understanding re value of use	■	■								
Online resource material	■	■								
Cost of telecommunications within country	■	■	■	■	■	■				
Cost of International telecommunications	■	■	■	■	■	■	■	■	■	■
Available international bandwidth	■	■	■	■						
Domain name management	■									
Legislation	■									

Table 16-2: Major Barriers facing Internet development by Country

Barrier	Cook Islands	FSM	Fiji	Kiribati	Marshall Islands	Nauru	Niue	Palau	PNG	Samoa	Solomon Islands	Tokelau	Tonga	Tuvalu	Vanuatu
Cost of Equipment			✓			✓	✓		✓	✓	✓	✓	✓		✓
Technical support							✓		✓						✓
Reliable power supply							✓		✓						✓
Quality of Internet connection			✓						✓						✓
Access to telephone network						✓	✓		✓						
Internet service providers			✓					✓							✓
People with technical skills									✓						
People with content skills									✓		✓				
User understanding re value of use						✓			✓						✓
Online resource material	✓								✓						
Cost of telecommunications within country		✓				✓	✓		✓	✓				✓	✓
Cost of International telecommunications		✓	✓			✓	✓	✓	✓	✓			✓	✓	✓
Available international bandwidth		✓					✓		✓	✓	✓				
Domain name management							✓		✓						
Legislation										✓					

17 Development Plans

Telecommunication providers in many of the Pacific Islands countries have specific plans for upgrading core telecommunications infrastructure, including digitising telephone switches, installing fibre and radio technologies and expanding national networks to rural areas and outer islands. Satellite and radio technologies are being explored. A special area of focus is the international links to the USA, where most Internet traffic originates. The specific development initiatives mentioned in the surveys returned by telecommunication carriers are summarised below.

Table 17-1: Development Plans (by Country)

Country	Internet Infrastructure Development Plans
Cook Islands	▪ None specified
Federated States of Micronesia	▪ Plans to connect to the Australia-Japan Fibre Optic cable (a 640 gigabit undersea cable commissioned in December 2001[7]) ▪ Government to establish a committee to formulate an ICT plan
Fiji	▪ Considering deregulation of the telecommunications sector to promote Internet development
Kiribati	▪ TSKL intends to provide faster connectivity for Internet links to the outside world and to their customers
Marshall Islands	▪ None specified
Nauru	▪ None specified
Niue	▪ None specified
Palau	▪ PNCC plans: ➢ to add multiple backbone carrier systems to improve network reliability; ➢ to lower prices and increase connection speeds, and ➢ to develop high-speed national access for telehealth and distance learning
Papua New Guinea	▪ Expected that the privatisation of Telikom PNG will lead to improved services, including the entry of Telikom into the ISP business. ▪ Pacific Mobile Communications is planning for bandwidth expansion ▪ The Ministry of Education is planning to develop a private education and research network

[7] *"AJC commences commercial operations",* http://www.ajcable.com

Samoa	▪ Samoa Communications Limited is planning to upgrade the telephone exchange with digital technology, as well as complete installation of fibre optic cables around the main business area. ▪ Wireless technologies are expected to be used for extending the data network ▪ An upgrade of the international link is also planned, including stabilising alternate routing in the case of primary route failure ▪ Consideration is also being given to data communication technologies that do not rely on telephone network infrastructure
Solomon Islands	▪ Solomon Telekom is negotiating for the provision of an asymmetrical bandwidth satellite downlink direct from the USA to augment the existing 256k symmetrical Optus link ▪ Within the Solomons, it is intended to use digital DAMA VSAT systems with clear 64kbps data channels for Internet use
Tokelau	▪ Negotiating with ICANN for country level domain name, to establish email services
Tonga	▪ Tonga Communications Corporation plans to expand Internet and email services to the outer islands as well as increase bandwidth on the link to the USA ▪ TCC also plans to establish Internet access centres in Nuku'alofa and the outer islands
Tuvalu	▪ Plans to provide service to rural areas at minimum cost so that services will be affordable to people in rural areas
Vanuatu	▪ Telecom Vanuatu plans to increase customer access and grow its customer base ▪ Vanuatu Broadcasting and Television (VBTC) is interested in developing its internal network

18 Regulatory Environment

The provision of telecommunication services in Pacific Islands countries is for the most part a responsibility of Government. Some countries have encouraged private investment in establishing Internet Service Providers, while others have simply added Internet services to the range of services provided by the incumbent telecommunications provider. While some countries are considering deregulating their telecommunications industry to encourage the growth and development of core infrastructure, others will clearly need to continue to rely on Government support. The current regulatory environment in each of the Pacific Islands countries is summarised in Table 18-1.

Table 18-1: Telecommunications Regulatory Environment

Country	Govt. owned monopoly	Private Sector Monopoly	Competitive Private Sector
Cook Islands		✓	
Federated States of Micronesia	✓		
Fiji		✓*	
Kiribati	✓		
Marshall Islands		✓**	
Nauru	✓		
Niue	✓		
Palau	✓		
Papua New Guinea	✓		
Samoa			✓
Solomon Islands		✓	
Tokelau	✓		
Tonga	✓		
Tuvalu	✓		
Vanuatu		✓	

** Government a minority shareholder through Amalgamated Telecom Holdings*
*** Significant Government ownership*

19 Budgets

The establishment of telecommunications and Internet infrastructure requires investment either by Governments or private sector organisations. Countries were surveyed to determine if their Government had a centralised budget for Information and Communication Technology, and if so, what the typical annual expenditure is. The results are summarised in Table 19-1.

Half of the countries reportedly have centralised budgets, but none of the respondents were able to provide details about the size of the budgets. Some gave contacts in other government departments, who might have been able to provide the requested information. But the interesting conclusion that could be drawn from the survey responses is that the people most closely involved with Internet developments in their respective countries are not directly involved with financial investment issues. It might also be pointing to the fact that there are few, if any, national ICT plans and strategies.

"The absence of strategic plans and budgets at the national level might well be one of the most significant factors inhibiting the growth of Internet infrastructure in Pacific Islands countries"

The absence of strategic plans and budgets at the national level might well be one of the most significant factors inhibiting the growth of Internet infrastructure in Pacific Islands countries - a lack of understanding on the part of decision-makers in Governments about the importance of telecommunications infrastructure in national development. This was highlighted in a discussion with one country that is investing its substantial export earnings from domain name sales in sealing roads. However, I was assured that pipes for telecommunications cable are being laid in the roads before they are sealed. This typifies a key issue for the Pacific region. What steps need to be taken with politicians and Government officials to raise the priority of Internet development?

Table 19-1: Budgets for ICT

Country	Centralised Budget for ICT	Typical Annual Expenditure for ICT
Cook Islands	No	
Federated States of Micronesia	Yes	Not disclosed
Fiji	No	
Kiribati	Yes	Not disclosed
Marshall Islands	Not known	
Nauru	No	
Niue	Yes	Not disclosed
Palau	No	
Papua New Guinea	Yes	Not disclosed
Samoa	Yes	Not disclosed
Solomon Islands	No	
Tokelau	Not known	
Tonga	Yes	Not disclosed
Tuvalu	Yes	
Vanuatu	No	

20 Other Reports and Initiatives

"There is a high level of interest amongst a number of national, regional and international organisations in the Pacific in addressing digital divide issues and possible infrastructure solutions"

There is a high level of interest amongst a number of national, regional and international organisations in the Pacific in addressing digital divide issues and possible infrastructure solutions. A challenge facing the Pacific Island countries is to co-ordinate these efforts and progress the reports and discussions into action. A good start can be made by sharing information. Table 20-1 and Table 20-2 summarise current and recent activities relating to the development of internet infrastructure. Table 20-1 summarises related reports and initiatives; Table 20-2 summarises selected UNESCO reports and initiatives, both within the Pacific Island countries and globally.

Table 20-1: Related Reports and Initiatives
ICT development in Pacific island Countries

Date	Report/Initiative	Organisation	Contact	Web Reference
July 1994	Sustainable Development Networking Programme	UNDP		www3.undp.org/www.undp.org.fj/ SDN/sdn.htm
1995	The Working Group of the IT managers and specialists of the Pacific regional governmental organizations (ITPACNET, since August 2001 CROP Information Working Group) was established to coordinate development and promote cooperation.	SPOCC, Now CROP (Council of Regional Organizations)	IT managers of FFA, PIDP, PIFS, SOPAC, SPC, SPREP, TCSP, USP	
October 1995	Pacific Islands, Information Technology & Universal Access: It's Not Just About Wires		Michael Ogden (ogden@hawaii.edu)	www2.hawaii.edu/~ogden/piir/pacific/NJAW.html
July 1996	Alliance of Small Island States: Internet Service Providers in Pacific Island Countries			www.upei.ca/~meincke/icpac.htm
October 1996	A web of holes or a new fishing net for the Pacific? The WWW in Oceania		Dirk Spennemann (dspennemann@csu.edu.au)	http://life.csu.edu.au/~dspennem/Publications/AAS96/AAS_Conf96_WWW.html
December 1996	Pacific Public Health Surveillance Network (PPHSN)	Secretariat of the Pacific Community	Dr Yvan Souares Yvan@spc.org.nc Dr Tom Kiedrynski Tom@spc.org.nc	www.spc.org.nc
January 1997	Seminar: Using the Web to Facilitate Information Exchange On and Among Small Islands	ECDPM		www.oneworld.org/ecdpm/en/events/ 97001/
April 1997	Asia and Pacific Development Information Programme (APDIP)	UNDP		www.apdip.net
	Internet Governance Information (APDIP)	UNDP		http://intgov.apdip.net
	Small Islands Development States Network (SIDSnet)	UNDP and Alliance of Small Island States		www.sidsnet.org
	Pacific Islands Internet Project (PIIP)	UNDP – Suva	Edo Stork (edo.stork@undp.org)	www.undp.org.fj/piip/

	GSHDP	UNDP – Suva		www.undp.org.fj/governance/ objectives_of_gshdp.htm
1997-1998	PINA Nius Online	Pacific Islands News Association (PINA)	Nina Ratulele PINA Editor/Administrator pina@is.com.fj	www.pinanius.org www.pacificislands.cc
	PACNEWS	Pacific Islands Broadcasting Association, PIBA	Jese Sikivou, CEO pacnews@is.com.fj	www.pacnews.org.fj
May 1998	Pacific Island Involvement in the Global Information Infrastructure. Report prepared by Parsons Galloway Foundation for South Pacific Forum Secretariat	South Pacific Forum Secretariat	info@forumsec.org.fj	www.forumsec.org.fj
June 1998 August 2001	Distance Education System via Satellite Communication Network in the South Pacific – USPNet USPNet 2000 (by Professor Chandra)	USP	KDD Engineering and Consulting (consulting@kdd-ec.or.jp) Professor Rajesh Chandra Deputy Vice Chancellor,USP (chandra_r@usp.ac.fj)	www7.itu.int/itudfg7/fg7/CaseLibrary/ documents/usp001.htm
July 1998	Pacific Connections. A report of the working party. 14 July	National Library of New Zealand	Margaret Calder (Margaret.Calder@Natlib.govt.nz)	
April 1999 October 1999	Forum Vision/Workplan for the Pacific Information Economy and Action Plan, adopted by the Forum Communication Policy Ministerial Meeting, Suva, 26 April; and by Thirtieth South Pacific Forum, Koror, 3-5 October 1999		Ulafala Aiavao, Media Adviser ulafalaA@forumsec.org.fj	www.forumsec.org.fj
October 1999	The establishment of Tuvalu's first ISP	Internet Society and SOPAC	Franck Martin (franck@sopac.org.fj)	www.isoc.org/inet2000/cdproceedings/ 8d/8d_1.htm
February 2000	Concept Paper on "The concepts and considerations for strengthening environmental information servicing on the SPREP through Satellite Communications"	UNEP	Mick Wilson, Chief of UNEPnet Services, Nairobi,Kenya (mick.wilson@unep.org) Herve Dropsy herveD@sprep.org.ws	www.unep.org/unepnet
April 2000	Development of Information Technology in the Pacific. $1,000,000 provided by Japanese Government to assist countries with their own IT development efforts.	UNDP - Fiji	Edo Stork, ICT for Development Project Officer Edo.stork@undp.org Regional co-ordinator from February 2002 will be: Katherine Peart	http://fiji-gov.apdip.net/undp/reg_prog.htm
December 2000	Discussion Paper on Internet Access, Prices, and Development. Draft, 20 December	South Pacific Forum Secretariat	ulafalaA@forusmsec.org.fj	
January 2001	Seminar on Information Technology for Development in the Pacific Pacific Islands' Leaders Meeting (PALM)	UNDP		www.undp.org.fj/ditp/activities/ okinawa_seminar.htm
May 2001	"Expansion of Mercure into the South Pacific Region" paper presented at Mercure workshop, Arendal, Norway	UNEP	Torre Karlsen (Karlsen@grida.no) Herve Dropsy (herveD@sprep.org.ws)	www.centre.unep.net/workshop_presentations.htm
June 2001	Status of Internet in Pacific Island Countries	SOPAC	Franck Martin Franck@sopac.org	www.isoc.org/isoc/conferences/inet/01/CD_proceedings/ G29/Report2001.htm

August 2001	Draft strategy approved at Pacific Information and Communication Technologies Needs Assessment and Strategy Planning Workshop: Noumea. Expecting Pacific Island countries to endorse.	SPC and SOPAC	Robert Guild RobertG@forumsec.org.fj Sam Taufao (samT@spc.int)	www.spc.int/it/ictnoumea/
August 2001	Virtual Colombo Plan - Bridging the Digital Divide	World Bank AUSAID	Graham Barrett gbarrett@worldbank. org	www.worldbank.org www.ausaid.gov.au
September 2001	2001 Telecommunications and Information Highways in New Zealand/Pacific Islands	Paul Budde Communication		www.budde.com.au/TOC/TOC2220. html
September 2001, January 2002	Research project to determine "e-readiness" of Pacific Island countries for the use of ICTs and e-commerce in trade development. Follow-up workshop, Nadi, Fiji 29-31 January 2002	United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP)	Mari Minowa (Minowa.unescap@un.org) Paul Kimberley (pka@magna.com.au)	www.unescap.org/
November 2001	ICT R & D Grants Programme in Asia Pacific Region	Asia-Pacific Development Information Programme (APDIP)		www.apdip.net
November 2001	PECC - Pacific Island Nation Task Force Meeting, Hong Kong, 26 November	PECC	Noel Levi, Secretary General, Pacific Islands Forum Secretariat	http://chacmool.sdnp.undp.org/pacific/forumsec/news/2001/Nov15.htm
December 2001	ICT for Development	UNDP		www.undp.org/info21/index5.htm
2002	Setting up a national Internet service provider in Tuvalu	UNV/UNDP	Ahmed Iftikhar iftikharahmed@hotmail.com	
2002	Capacity Building IT Seminar Series; National and Regional projects; Asia Pacific Internet Governance Information Services	Asia-Pacific Development Information Programme (APDIP)	info@apdip.net	www.apdip.net
2002	Technical Assistance for ICT Assessment in the Pacific	Asian Development Bank (ADB)		www.adb.org
2002	Pacific Telecommunications Governance Project 2002-2003	International Telecommunications Union (ITU) Asia Pacific Telecommunity (APT) Australian Government	William Withers William@itu.or.th Raimondo Giuliani raimondo@itu.or.th	www2.itu.or.th
2002	Interconnection between NGO's in Pacific Region	Pacific Islands Association of Non-Government Organisations (PIANGO)	Piango Secretariat piango@vanuatu.com.vu	www.pasifika.net/piango/
2002	People First Network in the Solomon Islands	UNDP; Rural Development Volunteers Association (RVDA)	Ministry of Provincial Government and Rural Development sidapp@pipolfastaem.gov.sb	http://www.peoplefirst.net.sb
2002	PINA members participating in 15-week Journalism courses at Konrad Adenauer Centre for Journalism at Ateneo de Manila University, Phillippines	PINA	Nina Ratulele PINA Editor/Administrator pina@is.com.fj	www.pinanius.org
February 2002	Senior Officials' Information and Communication Workshop, to develop national policy and regulatory frameworks, Suva, Fiji	ITU, UNDP, Pacific ForSec, PITA	UlafalaA@forumsec.org.fj	www.forumsec.org.fj

Table 20-2: Selected UNESCO Reports and Initiatives
ICT Development in Pacific Island Countries and Globally

Date	Report/Initiative	Organisation	Contact	Web Reference
1997-2001		**UNESCO Office for the Pacific (*) and/or :**	**Contact at UNESCO Pacific (*) (t.virtanen@unesco.org) or :**	**http://www.unesco.org/webworld/ (*)**
	Meetings/workshops:			
January 1995	Pacific Regional Consultation in Developing Communication Technologies, Suva, Fiji	NZ NatCom for UNESCO	Elizabeth Rose Elizabeth.Rose@minedu.govt.nz	
November 1997	Pacific Regional Seminar on Internet Introduction and Use, Suva, Fiji	* PITA/NZ NatCom for UNESCO	* Jim Higgins (jhiggins@netedge.co.nz)	
March 1999	Joint RINSCA/RINSEAP Meeting and "Asia-Pacific Internet Conference", Bali, Indonesia, 22-27 March	* UNESCO (Jakarta), ABA	*	
March 1999	Internet Seminar for Small Countries, Malta, 17-19 March	UNESCO (Paris) Govt of Malta Commonwealth Of Learning	Philippe Queau (p.queau@unesco.org)	
September 1999	A Seminar on National Information Policy in PNG to update the National Information and Communication Policy paper	* PNG NatCom for UNESCO	* Regina Kati (kati_regina@education.gov.png)	
March 2001	UNESCO Consultation of Pacific Cultural Directors	* New Zealand NatCom for UNESCO (PP)	Mali Voi, Culture Adviser (m.voi@unesco.org) Elizabeth Rose, NZ NatCom for UNESCO (Elizabeth.rose@minedu.govt.nz)	www.unesco.org.nz
	Reports:			
February 1997	Electronic Connectedness in the Pacific Island Countries. Report prepared by Roger Hicks for UNESCO	*	*	
September 1998	Building a Pacific Islands Chapter of the Internet Society. Report prepared by Samuelu Taufao for UNESCO	*	* samT@spc.int	
October 1998	Information needs in the Pacific Islands – A needs assessment on the libraries and archives. Survey prepared by Esther Williams (USP) for UNESCO	*	*	
April 1999	Electronic connectedness in the Pacific Islands countries. Survey prepared by L.Zwimpfer for UNESCO	*	* Laurence Zwimpfer (zwimpfer@xtra.co.nz)	*

March 2002	Internet Infrastructure and e-Governance in the Pacific Islands Countries. A survey on the development and use of Internet. Survey prepared by L.Zwimpfer for UNESCO	*	* Laurence Zwimpfer (zwimpfer@xtra.co.nz)	(will be posted on webworld)
	Workshops/training:			
November 1998	Workshop on "Internet and Education" at the UNESCO Directors of Education meeting	*	*	
December 1998	Workshop on "Internet and Science" at the Asia-Pacific Science Conference, hosted by Australian NatCom	* Australian NatCom for UNESCO	*	
1998-99	One-time financial contribution to the website development (as resource base and training tool) of PINA and USP journalism programme	* PINA USP	* Nina Ratulele (pina@is.com.fj) David Robie (robie_david@usp.ac.fj)	
March 1999	Pacific InterLink Internet Intern Programme, Wellington, New Zealand	* New Zealand NatCom for UNESCO	* Laurence Zwimpfer (zwimpfer@xtra.co.nz)	
March 2001	Internet Workshop for the Pacific Directors of Culture at the Directors' meeting	* NZ NatCom for UNESCO	Mali Voi (m.voi@unesco.org) Laurence Zwimpfer (zwimpfer@xtra.co.nz)	
May 1999	Internet training for 24 Pacific Youth Leaders at the UNESCO Pacific Youth Forum, Brisbane, Australia	*	*	
July 2001	Training in Internet Skills for 24 Pacific Youth Leaders Apia, Samoa	*	*	
September 2001	Training in Internet Skills for Pacific EFA coordinators, Nadi, Fiji	*	*	
October 2001	Regional PACMEDIA Workshop on ICT in Newsrooms by PINA	* PINA; International Programme for the Development of Communication (IPDC)	* Peter Lomas (pinapjdc@is.com.fj)	
	Training materials:			
1999	"Pacific Online 1999" Internet Training Package (CD-ROM and Manuals), produced by the UNESCO Chair at RMIT for UNESCO	*	*	
February 2002	Training Modules for Pacific Decision-Makers. CD-ROM produced by Taholo Kami for UNESCO	*	* Taholo Kami (tkami@kalianet.to)	(will be posted on webworld)
2001-	"Voyager – Revitalizing traditional knowledge of Pacific navigation" CD-ROM	* Several partners	*	

	Networks/activities/ projects:			
1997-2000	Projects to computerize and organize related training for the national radio newsrooms in PNG, SI, Vanuatu, Tonga Project to provide a desktop unit and organize related training for eight NBC provincial stations (PAPCOM)	* International Programme for the Development of Communication, IPDC	*	
1998-	Project to support PIBA member radio stations to improve their management functions and connect them to email (PACMAP)	* Pacific Islands Broadcasting Association, PIBA	Jese Sikivou, CEO (piba@is.com.fj) *	
September 1999	Regional Information and Informatics Network for Pacific Islands (RIINPIN) – eMail discussion group	*	* riinpin-discuss@riinpin.org	
2001	A series of community TV programmes to demystify the Internet and to pilot TV-browsing in the Pacific	* International Programme for the Development of Communication, IPDC CTV Nadi	* ctv@is.com.fj	
	Selected international reports/ publications:			
On-going	UNESCO Website on communication and information			www.unesco.org/webworld
May 1995	The right to communicate: at what price? Economic constraints to the effective use of telecommunications in education, science, culture and in the circulation of information	ITU and UNESCO	John Rose (j.rose@unesco.org)	
1997	National Information Policies. A handbook on the formulation, approval, implementation and operation of national information policies. Prepared by FID for UNESCO		Victor Montviloff (v.montviloff@unesco.org)	
1997	Information technologies for newspaper publishing in Asia and the Pacific. Edited by Belinda Hopkinson		UNESCO Publishing	
1998	Freedom of Expression and New Communication Technologies. Edited by Michele Pare and Peter Desbarats.	ORBICOM, Network of UNESCO Chairs in Communication		http://iqe.qc.ca
November 1999	World Communication and Information Report 1999-2000 *(Chapter 15 Asia and the Pacific)*		UNESCO Publishing	
2000	Law of Cyberspace Series. Volume 1: The International Dimensions of Cyberspace Law		UNESCO Publishing	

November 2000	"New Technologies and Solutions for Rural Accessibility", InfoEthics 2000, Paris, France		Yasuhiko Kawasumi, General manager, Japan Telecom Co and rapporteur for ITU-D-Focus Group 7	www.unesco.org/webworld/infoethics2000/documents/paper_kawasumi.rtf
2001	The Community Telecentre Cookbook for Africa. Recipes for self-sustainability. How to establish a multi-purpose community telecentre in Africa, by Mike Jensen and Anriette Esterhuysen		* John Rose (j.rose@unesco.org)	
	The reports and papers of the annual INFOethics Congresses are on the 'webworld' site.		v.montviloff@unesco.org	*
	Selected portals:			
	Archives portal			www.unesco.org/webworld/portal_archives/pages/index.shtlm
	E-learning portal			www.unesco.org/education/portal/e-learning/index.shtlm
	ICT for teacher training portal			www.unescobkk.org/ips/ict/ict.htm
	Knowledge resources. Information Programmes and Services Portal			www.unescobkk.org/ips/
	Observatory of the Information Society			www.unesco.org/webworld/observatory/index.shtlm
	Adolescent Reproduction and Sexual Health Portal			www.unescobkk.org/ips/arh_web/index.htlm

21 Further Information

The amount of information that can be collected by questionnaire is clearly quite limited. Respondents were encouraged to provide specific contact details for people who may be able to provide further information on developments within their respective countries. These contacts are summarised below:

Table 21-1: Contacts for Further Information

Country	Organisation	Survey Respondent	ICT Equipment	ICT Policy	ICT Budget
Cook Islands	Elijah Communications	Jeanne Matenga Jeanne@oyster.net.ck Tel: +682 29460 Fax: +682 21907			
Federated States of Micronesia	Department of Transportation, Communications & Infrastructure	Tilson Kephas transfsm@mail.fm Tel: +691 320 2865 Fax: +691 320 5853	Takuro Akinaga FSM Telecom Corporation takinga@mail.fm Tel: +691 320 2741 Fax: +691 320 2745		
Fiji	Fiji Museum	Sagale Buadromo fijimuseum@is.com.fj Tel: +679 315 944 Fax: +679 305 143	Anare Jale Secretary, Public Service Commission Tel: +679 314 588		
	Fiji Television Limited	Ken Clark fijitv@is.com.fj Tel: +679 305 100 Fax: +679 305 077	Marketing Department Telecom Fiji Tel: +679 304 019		
	National Archives of Fiji	Setareki Tale stale@govnet.gov.fj Tel: +679 304 144 Fax: + 679 307 006	The General Manager Telecom Fiji Ltd Tel: +679 304 019		
	University of the South Pacific	Kisione Finau Kisione.finau@usp.ac.fj Tel: +679 302 589 Fax: +679 304 089		Kisione Finau IT Services, USP Kisione.finau@usp.ac.fj	
Kiribati	Telecom Services Kiribati Limited	Ioteba Buatia ibuatia@tskl.net.ki Tel: +686 20720 Fax: +686 21424		Taahei Taiaba Ministry of Transport and Communications mict@tskl.net.ki	Ieronimo Kienene TSKL ceo@tskl.net.ki Fax: +686 21424
	Ministry of Education, Training & Technology	Teboranga Tabuaka mettps@tskl.net.ki Tel: +686 28091 Fax: +686 28222	Manager Telecom Kiribati Limited Tel: +686 26588	Manager Telecom Kiribati Limited Tel: +686 26588	
Marshall Islands	National Telecommunications Authority	Colin Allen Marketing Supervisor ntamrktg@ntamar.com Tel: +692 625 9559 Fax: +692 625 3386			
Nauru	Department of Sports	Julie Olsson julienauru@cenpac.net.nr Tel: +674 444 3292 Fax: +674 444 3164	Director of Telecommunications Nauru Telecommunications Tel: +674 444 3132	Secretary, Department of Industry & Economic Development Tel: +674 444 3181	
Niue	Broadcasting Corporation of Niue	Shane Tohovaka News Director/ Producer sunshine@mail.gov.nu Tel: +683 4026 Fax: +683 4217	Richard Hipa Director of Telecom Niue Tel: +683 4002	Birtha Head Fale Fono Tel: +683 4200	Sisilia Talagi Secretary to Government
	Ministry of Education	Kupa Magatogia Tel: +683 4145 Fax: + 683 4301	Director Telecom Niue Tel: + 683 4002	Director Administration Department Tel: +683 4018	Director Administration Department Tel: + 683 4305

	Huanaki Cultural Center & Museum	Robin Hekau Cultural Affairs Officer Tel: +683 4011 Fax: +683 4391	Mrs Fita Talagi Administrations Tel: +683 4018	Mrs S Talagi Fale Fono Niue Government Tel: +683 4200	
	Internet Users Society Niue	Richard Saint Clair stclair@niue.nu Tel: +683 1157 Fax: +683 4237	Richard Saint Clair stclair@niue.nu Tel: +683 1157 Fax: +683 4237		
Palau	Palau National Communications Corporation	Blance Salii pncc@palaunet.com Tel: +680 587 9000 Fax: +680 587 1888		O.Besebes Ministry of Comemrce & Trade mincat@palaunet.com Tel: +680 488 2111	
	Belau National Museum	Faustina Rehuher-Marugg bnm@palaunet.com Tel: +680 488 2841 Fax: +680 488 3183	Mr Ed Carter Palau National Communication Corporation pncc@palaunet.com Tel: +680 587 9000		Ministry of Administration Minister Sadang Bureau of Treasury
Papua New Guinea	South Pacific Post Limited	Tony Yianni Managing Director tyianni@spp.com.pg Tel: +675 309 1000 Fax: +675 320 0249	Sunil Andradi Telecom PNG andradi@tiare.net.pg Tel: +675 300 4011		
	Telikom PNG	International Business Analyst evoroipe@telikompng.com.pg Tel: +675 300 5515 Fax: +675 325 0513			
	Pacific Mobile Communications	Bert Forbes A/Managing Director bert@tiare.net.pg pmc@tiare.net.pg Tel: + 675 323 6336 Fax: +675 325 8916			
	National Department of Education	Chris Prince, Director Media & Communications Chris_Prince@education.gov.pg Tel: +675 301 3567 Fax: +675 301 3544		Henao Iduhu Office of Information & Communication hiduhu@datec.com.pg Tel: +675 325 0148	Henao Iduhu Office of Information & Communication hiduhu@datec.com.pg Tel: +675 325 0148
	National Cultural Commission	Christopher Isaac Senior Research Officer Tel: +675 323 5111 Fax: +675 325 9119	The General Manager Telikom PNG Tel: +675 800 5000 Fax: +675 325 0665		
Samoa	South Pacific Regional Environment Programme	Herve Dropsy IT Manager herve@sprep.org.ws Tel: +685 21929 Fax: + 685 20231	Samoa Communications Limited Ministry of Information	Herve Dropsy IT Manager herve@sprep.org.ws Tel: +685 21929 Fax: + 685 20231	
	Ministry of Youth, Sports and Cultural Affairs	Mose Fulu Tel: +685 63444 Fax: +685 23639			Treasury, Samoa Communications Ltd.
	Samoa Communications Limited	Philip Bell Chief Operating Officer philipb@samoacom.com.ws Tel: +685 22766 Fax: +685 23464			
	Ministry of Posts & Telecommunications	Sapau Ruperake Petaia mpt@samoa.ws Tel: +685 26 117 Fax: +685 24 671	Mr Faafetai Ah Khoi Ministry of Posts and Telecommunications fak@samoa.ws Tel: +685 26 117		
Solomon Islands	Solomon Telekom Co Ltd	Loyley Ngira Manager Sales Marketing Operations Loyley.ngira@telekom.com.sb Tel: +677 24218 Fax: +677 24220			

Tokelau	Teletok - Telecommunication Tokelau Corporation	Tino Vitale General Manager apvitale@clear.net.nz Tel: +690 3101 Fax: +690 3103	Samson Samasoni		
Tonga	Prime Minister's Office (Department of Communications)	Viliami Latu Deputy Secretary pmau@pmo.gov.to Tel: +676 24 644 Fax: +678 23 888			
	Tonga Broadcasting Commission	Tavake Fusimalohi General Manager a3z-mgt@kalianet.to Tel: +676 23 555 Fax: +676 24 417	Mr Siaosi Sovaleni Ministry of Finance Tel: +676 23 066		Mr Siaosi Sovaleni Ministry of Finance Tel: +676 23 066
	Tonga Communications Corporation (TCC)	Sione Ketu'u Engineer Internet sione@kalianet.to Tel: +676 26 700 Fax: +676 23 915			
	Tonga Traditions Committee	Albert Tu'ivanuavo Vaea tontrcom@kalianet.to Tel: +676 21 005 Fax: +676 24 102	Hon Fanetupouvaia'u Tuita Information Officer Prime Minister's Office Tel: +676 24 644	Secretary to the Government of Tonga Prime Minister's Office Tel: +676 24 644	
Tuvalu	Computer Department, Government of Tuvalu	Computer Programmer p@motufoua.tv Tel: +688 20320 Fax: +688 20198	Vaililo Timaio Tuvalu Telecom Tel: +688 20006	Simeti Lopati Assistant Secretary to Government	
	Ministry of Works, Communication and Transport	Samuela Laloniu sam@tuvalu.tv Tel: +688 20721 Fax: +688 207 22	Mr Lopati Tefoto Tuvalu Telecommunication Corporation Tel: +688 20001		Ministry of Finance Tel: +688 28210
	Ministry of Education	UNESCO National Commission Tel: +688 20834 Fax: +688 20405	Mr Kaitapu-Kilima Tuvalu Telecommunication Corporation Tel: +688 20004		Mr Lopati Tefoto Tuvalu Telecommunication Corporation Tel: +688 20002
Vanuatu	Ministry of Lands and Natural Resources	Director General M J Mangawai mjmangawai@vanuatu.gov.vu Tel: +678 23105 Fax: +678 15615			
	Vanuatu Broadcasting and Television Corporation	General Manager Fax: +678 22026	Telecom Vanuatu Limited Tel: +678 22185	Director Economic and Social Development Department Tel: +678 22605 Fax: +678 23087	Director Finance Tel: +678 25533
	Telecom Vanuatu Limited	Manager International Relations telecom@tvl.net.vu Tel: +678 22185 Fax: +678 22628			

22 Acknowledgements

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Country	Organisation	Respondent
Cook Islands	Elijah Communications	Jeanne Matenga
FSM	Department of Transport and Communications	Tilson Kephas
Fiji	University of the South Pacific	Kisione Finau
	Fiji Television	Ken Clark
	Fiji Museum	Sagale Buadromo
	The National Archives of Fiji	Setareki Tale
Kiribati	Ministry of Education, Training and Technology	Teboranga Tabuaka
	Telecom Services Kiribati Limited (TSKL)	Ioteba Buatia
Marshall Islands	Marshall Islands National Telecommunications Authority	Thomas de Brum/ Colin Allen
Nauru	Department of Sports	Julie Olsson
Niue	Ministry of Education	Kupa Magatogia
	Huanaki Cultural Center & Museum	Robin Hekau
	Internet Users Society Niue	Richard Saint Clair
	Broadcasting Corporation of Niue	Shane Tohovaka
Palau	Belau National Museum	Faustina Rehuher-Marugg
	Palau National Communications Corporation (PNCC)	Blance Salii
Papua New Guinea	Department of Education	Chris Prince
	National Cultural Commission (NCC)	Christopher Issac
	Pacific Mobile Communications (PMC)	Bert Forbes
	South Pacific Post Limited	Tony Yianni
	Telikom PNG	Peter Loko
Samoa	Ministry of Posts and Telecommunications	Sapau Ruperake Petaia
	Ministry of Youth, Sports and Cultural Affairs	Mose Fulu
	Samoa Communications Limited (SCL)	Phillip Bell
	South Pacific Regional Environment Programme (SPREP)	Herve Dropsy
Solomon Islands	Solomon Telekom Co Ltd	Loyley Ngira

Tokelau	Teletok (Telecommunications Tokelau Corporation)	Tino Vitale
Tonga	Office of the Prime Minister	Viliami Latu
	Tonga Communications Corporation (TCC)	Sione Ketu'u
	Tonga Broadcasting Commission (TBC)	Tavake Fusimalohi
	Tonga Traditions Committee	Albert Tu'ivanuavo Vaea
Tuvalu	Ministry of Works, Communication, and Transport	Samuela Laloniu
	Government Computer Department	Computer Programmer
	Ministry of Education	Lanuola Faasiai
Vanuatu	Telecom Vanuatu Limited	Manager International Relations
	Vanuatu Broadcasting and Television Corporation	General Manager
	Ministry of Lands & Natural Resources	Director General

23 Appendix 1: COOK ISLANDS*

A. COUNTRY INFORMATION

Population: 15,600

B. ICT EQUIPMENT

Access to Internet Services

Less than 25% of the population have access to the internet

Connectivity

Telephone, Fax, Internet e-mail and the World Wide Web are used daily

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Elijah Com.	11	2	2	3	0

Web Pages

www.webcentral.co.ck, www.radio.co.ck

Staff Usage of Internet

Less than 10% of staff use internet services for e-mail, the web and online ordering

Internet Applications

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Elijah Com.	15	9	5	6

Barriers

The only barrier cited was Internet Service Providers

Development Plans

Online broadcasting - to broadcast Radio Cook Islands over the Internet
News site - to publish Cook Islands Herald Magazine online
Digital editing - update current digital editing suite and equip with newer technology.

* The survey was completed by Elijah Communications

C: E-GOVERNANCE

ICT Equipment and Services

339 computers in 16 government departments (43 of which have Internet access). All 16 departments are using the Internet for communication and research. 9 are using it for trade.

E-Governance Applications

Web is currently used to provide a list of Government/ IGO agencies and officials. Many other applications to move online soon.

Government Initiatives

TeleHealth
TeleEducation

Government Websites

PM's Office: www.cook-islands.gov.ck (Government news)
Tourism: www.cook-islands.com (Tourism)
Development Investment Board www.cook-islandsinvest.com

ICT Policy

None exists

Access to Government Services

Two apply - building up computerised databases and digitalising government publications

Government Access

All Government departments use Facsimile, e-mail and the web

Legislation

Copyright Bill in place (previously 1962 Copyright Act)

Inhibitors

Lack of digitised government information, availability of training opportunities for Government officials, lack of political awareness of the opportunities, were all identified as **major** barriers inhibiting the development of e-governance

Ownership and monopoly of telecom services, availability of technical support and staff knowledge of equipment were identified as a further barriers

D: INTERNET INFRASTRUCTURE

ISPs

Oyster - Telecom Cook Islands (www.oyster.net.ck) has a customer base of 893 and was established in September 1997

Typical ISP Costs*

	New Zealand Dollars	*United States Dollars*
Usage-based		
Minimum monthly cost	NZ$20 for first 4 hours NZ$60 for first 25 hours	US$8.60 for first 4 hours US$25.80 for first 25 hours

* Currency Conversions as at 16 August 2001

	NZ120 for first 60 hours thereafter NZ$7 per hour	US$51.60 for first 60 hours thereafter US$3.01 per hour
Unlimited access		
Schools & Hospitals		

Barriers

Availability of online resource material has been cited as the **major** barrier in developing internet services.

People with content skills has been identified as a further barrier.

Development Plans

None

E: TELECOMMUNIC-ATIONS

Telecom Cook Islands (www.telecom.co.ck) is a private sector monopoly

F: BUDGETS

No centralised budget.

G: OTHER SURVEYS

Surveys

Development Initiatives

Sharing Information

Issues/Comment

24 Appendix 2: FEDERATED STATES OF MICRONESIA*

A. COUNTRY INFORMATION

Population: 115,000

B. ICT EQUIPMENT

Access to Internet Services

Between 50% and 75% of the population have access to internet services in offices. Less than 25% of people in homes, schools, and libraries, and in the Telecom lobby have access to internet services

Connectivity

Telephone, Fax, e-mail, WWW, and low speed data connections are used by the Department greater than once a day. Videoconferencing is used once a month or less. Audioconferencing, V-SAT terminals, PEACESAT, high speed data connections, and LEOS telephones are never used

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Tran & Com	20	3	10	5	5

Web Pages

The organisation has no WWW home page

Staff Usage of Internet

Between 26% and 50% of the Department use e-mail and the Internet. Listserve, Usenet, online ordering, and web publishing are never used

Internet Applications

No Internet applications are specified

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Tran & Com	79	15	6	5

Barriers

A lack of technical support, bandwidth issues, and the cost of international telecommunications were cited as **major** barriers constraining the use of ICT in the organisation

Another barrier identified was the cost of domestic telecommunication

Development Plans

The Department intends to expand ICT to the remote islands to

* The survey was completed by The Department of Transport and Communications

bridge the digital divide

C: E-GOVERNANCE

ICT Equipment and Services	No figures have been supplied
E-Governance Applications	No e-governance applications are provided by the Government in FSM
Government Initiatives	No Government initiatives are specified
Government Websites	Government news: www.fsmgov.org Foreign Investment: www.fsminvest.fm Tourism: www.visit-fsm.org
ICT Policy	No Government ICT policy exists
Access to Government Services	The Government intends to connect to a fiber optic cable in two years
Government Access	The following departments use faxes, e-mail, and the internet: Administrative, Agriculture, Economic, Education, Foreign Affairs, Health, Inland revenue, Internal Affairs, Labour, Police, Transport, Social Security, Statistics The following departments use faxes and e-mail: Archives, Courts The following departments use faxes only: Libraries, Museums
Legislation	There is no legislation in place to protect electronic data/digital media in FSM
Inhibitors	Slow connections, a lack of digitised government information, the ownership of Telecom services, a lack of technical support, a lack of training opportunities for government officials, and a lack of political awareness of the opportunities presented by ICT have been identified as **major** inhibiting factors in the development of e-governance. Other inhibiting factors include the cost of Internet services and staff knowledge of equipment.

D: INTERNET INFRASTRUCTURE

ISPs FSM Telecommunication Corporation is the only ISP

Typical ISP Costs*

	United States Dollars
Usage-based	
Minimum monthly cost	US$19.95 for 5 hours and thereafter US$1.96 per hour
Unlimited access	
Schools & Hospitals	

Barriers Bandwidth issues and the cost of domestic and international telecommunications have been identified as **major** barriers to developing internet services

Other barriers identified include a lack of technical support, the quality of connections, ISPs, and the availability of online resources were identified as barriers

Development Plans Plans to connect to Australia-Japan Fiber Optic Cable
Government to establish committee to formulate ICT plan

E: TELECOMMUNIC-ATIONS

FSM operates under a government owned monopoly, namely the FSM Telecommunication Corporation

F: BUDGETS

FSM has a centralised budget

G: OTHER SURVEYS

Surveys Pacific Island Technical Training Program (East-West Centre)

Development Initiatives AJC Fiber Optic Connectivity (Government & FSM Telecommunications Corporation)

Sharing Information

Issues/Comment

* Currency Conversions as at 16 August 2001

25 Appendix 3: FIJI*

A. COUNTRY INFORMATION

Population: 775,000

B. ICT EQUIPMENT

Access to Internet Services

Access to the internet is less than 25% of the population at all access points. The exception is the office environment which is between 25 and 50% of the population

Connectivity

Telephone, Fax, e-mail, and WWW are used by all of the organisations greater than once a day. Audio-conferencing, video-conferencing, and V-SAT terminals are used greater than once a day by the University but used only occasionally by the other organisations. PEACESAT are never used. The University and the Fiji Museum use low speed data connections greater than once a day while the other organisations do not use them at all. The University also uses a high speed data connection greater than once a day. No organisations use LEOS satellites

Computers

Organisation	Production Computers	Admin. Computers	Internet Computers	Computers 3+ Years old	Broken Computers
USP	1200	500	1000	300	20
Fiji TV	3	49	34	31	1
Archives	0	5	1	5	1
Museum	6	6	1	4	0

Web Pages

Three of the four respondents to the survey - USP, Fiji Television, and the Fiji Museum - have a home page on the Internet

Staff Usage of Internet

USP, Fiji Television, and the Fiji Museum have more than 75% of their staff using e-mail in their work. USP also has more than 75% of staff using the internet. For Fiji Television and the Museum between 26% and 50% access the internet. Listserve, Usenet, Online Ordering, and Web Publishing are never used. The one exception is the University which has less than 10% of staff using these facilities

Internet Applications

USP: Websites are used for staff and student research. List

* The survey was completed by four organisations: The University of the South Pacific, Fiji Television, Fiji Museum, and The National Archives of Fiji.

servers are only used for specific staff and student groups.

Fiji Television: Mostly news and current-affairs related sites.

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
USP	**800**	**750**	**60**	**10**
Fiji TV	**65**	**65**	**0**	**65**
Archives	**19**	**10**	**3**	**3**
Museum	**22**	**17**	**0**	**15**

Barriers

The cost of equipment, ISPs, bandwidth, and the cost of domestic and international telecommunication have been cited as **major** barriers constraining the use of ICT in the organisations

Other barriers identified include a reliable power supply, access to telephone networks, a lack of on-line resource material, and staff understanding as to the value of ICT

Development Plans

USP has a strategic IT development plan in place

Fiji Television is planning to upgrade the company's ISP connection to a "dedicated link"' of 28.8 kbps

The National Archives of Fiji have made a request to Government for funding for the automation of the national archives

The Museum plans to link all computers to the internet instead of just the one (as is the current situation)

C: E-GOVERNANCE

ICT Equipment and Services	No figures have been supplied.
E-Governance Applications	The Internet is used to provide a list of government agencies, national statistics, national events, regional events, and for the counting of election votes. The Museum also uses public access kiosks and allows ordering online
Government Initiatives	A seminar on E-Governance has been organized by the Ministry of Information in Suva
Government Websites	www.fiji.gov.fj is a government website offering general information
ICT Policy	USP has a fully implemented ICT policy, but respondents did not know if central Government had one.
Access to Government Services	The National Archives of Fiji advise that training of public officials takes place and that ICT is reinforced through training institutes and universities
Government Access	The following departments use faxes, e-mail, and the internet: Administrative, Economic Development, Education, Electoral, Foreign Affairs, Museums, and Police All other departments use faxes and e-mail
Legislation	Fiji has some Copyright law in place
Inhibitors	The cost of Internet Services, slow connections, a lack of digitised government information, equipment costs, and the ownership of Telecom services have been cited as **major** inhibiting factors in the development of e-governance Other factors identified include a lack of political and staff awareness of the opportunities presented by e-governance

D: INTERNET INFRASTRUCTURE

ISPs	Internet Service Fiji (Telecom Fiji). This has 3500 customers and was started in 1996

Typical ISP Costs*

	Fiji Dollars	*United States Dollars*
Usage-based		
Minimum monthly cost	F$78.75 for 15 hours F$123.75 for 25 hours	US$34.65 for 15 hours US$54.45 for 25 hours
Unlimited access	F$55.00 per month (Suva Only)	US$24.20 per month (Suva Only)
Schools & Hospitals		

Barriers

The cost of equipment, the quality of internet connections, ISPs, and the cost of international telecommunications have been cited as **major** barriers in developing internet services.

Other barriers identified include the reliability of power supply, the cost of international calls, and bandwidth issues.

Development Plans

Deregulation has been mooted as the monopoly situation in Fiji plays a major role in the development of the internet.

E: TELECOMMUNIC-ATIONS

Telecom Fiji is a private sector monopoly, although the Government has retained a shareholding stake in the Company.

F: BUDGETS

There is no centralised budget for ICT.

G: OTHER SURVEYS

Surveys

Development Initiatives

Sharing Information

Issues/Comment

* Currency Conversions as at 16 August 2001

26 Appendix 4: KIRIBATI*

A. COUNTRY INFORMATION

Population: 86,350

B. ICT EQUIPMENT

Access to Internet Services

Access to the internet is less than 25% across all access points

Connectivity

Telephone, Fax, and internet e-mail are used by both the Ministry and TSKL more than once a day. TSKL uses the internet more than once a day while the Ministry uses it approximately once a week. TSKL also uses low and high speed data connections more than once a day

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Ministry	10	3	5	7	3
TSKL	79	21	41	37	7

Web Pages

TSKL has a home page on the internet (www.tskl.net.ki)

Staff Usage of Internet

Less than 25% of staff in TSKL use e-mail while less than 10% of staff in the Ministry use it. Less than 25% of TSKL staff also use the internet. Less than 10% of TSKL staff use Listserve, Usenet, online ordering, and Web Publishing

Internet Applications

TSKL uses e-mail and uses a variety of web sites

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Ministry	**1059**	**20**	**0**	**10**
TSKL	**150**	**80**	**40**	**40**

* The survey was completed by The Ministry of Education, Training & Technology and Telecom Services Kiribati Limited (TSKL).

TSKL staff who received recent training learnt application programmes

Barriers

The cost of equipment and a lack of technical support were cited as **major** barriers constraining the internal use of ICT

Other barriers identified include bandwidth issues, staff knowledge of equipment, staff understanding as to the value of the internet, and the cost of domestic and international telecommunications

Development Plans

The Ministry plans to (1) establish a local network between the main office and the education centres on the outer islands and (2) to improve connections or access with regional/international bodies dealing with education

TSKL intends to (1) improve outer island communication equipment and (2) increase internet access to customers and schools

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	363	53	250	52
Education	25	3	20	13
Business	651	102	150	380
Homes	2054	262	20	5
Total	3093	420	440	450

E-Governance Applications

No e-governance applications are provided by the government

Government Initiatives

No initiatives specified

Government Websites

There is a government website primarily designed for tourism: www.tskl./kirabati.net.ki

ICT Policy

The Kiribati Government has an ICT policy that is still under discussion

Access to Government Services

Installation of public internet access points

Intra-ministry communication. Access by e-mail between Ministries is already occurring. A local network within Ministry of Education is still to be improved

Government Access All departments use faxes, e-mail, and the internet. No responses is given for Museums

Legislation Legislation is under discussion dealing with data protection, right to access, copyright, and ICT misuse

Inhibitors The high cost of internet services, unreliable internet connections, slow internet connections, a lack of digitised government information, the high cost of equipment, the ownership of telecom services, the availability of technical support, the availability of training opportunities for government officials, a lack of political awareness of e-governance opportunities, staff knowledge of equipment, and staff understanding regarding the value of the internet have all been cited as **major** inhibiting factors in the development of e-governance

D: INTERNET INFRASTRUCTURE

ISPs Kiribati has one ISP, namely TSKL. It has 500 customers and commenced service in September 1998

Typical ISP Costs*

	Australian Dollars	*United States Dollars*
Usage-based		
Minimum monthly cost	A$30.84 rental per month and A$4.29 per hour used	US$16.96 rental per month and US$2.27 per hour used
Unlimited access		
Schools & Hospitals		

Barriers The cost of equipment, the availability of technical support, people with content skills, user understanding regarding the value of the internet, the cost of domestic and international telecommunication, bandwidth issues, and domain name management have been cited as barriers in developing internet services

Development Plans TSKL intends to provide faster connectivity for the link to the outside world and to their customers

E: TELECOMMUNIC-ATIONS

Kiribati operates under a government owned monopoly, namely TSKL

F: BUDGETS

The Kiribati government has a centralised ICT budget

* Currency Conversions as at 16 August 2001

G: OTHER SURVEYS

Surveys	
Development Initiatives	Outer Island Communication (TSKL) Data Link (TSKL) Internet Access (TSKL)
Sharing Information	
Issues/Comment	

27 Appendix 5: MARSHALL ISLANDS*

A. COUNTRY INFORMATION

Population: 50, 840

B. ICT EQUIPMENT

Access to Internet Services

Access to internet services is less than 25% at all access points

Connectivity

NTA uses telephones, faxes, internet e-mail, the internet, high and low speed data connections, and LEOS telephones greater than once a day. Audioconferencing is used once a month or less

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
NTA	1	25	9	1	2

Web Pages

www.ntamar.com

Staff Usage of Internet

Less than 10% of staff use e-mail, the internet, and online ordering in their work. Listserve, Usenet, and Web Publishing are never used

Internet Applications

None specified

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
NTA	**104**	**20**	**20**	**80**

Staff received basic computer course training

Barriers

Bandwidth issues, staff knowledge of equipment, and staff understanding regarding the value of ICT have been identified as barriers constraining the use of ICT

Development Plans

None specified

* The survey was completed by the National Telecommunications Authority (NTA).

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	134	41		87
Education	33	2		14
Business	850	86		261
Homes	2461	376		182
Total	3478	505		544

E-Governance Applications No e-governance applications are provided by the Government

Government Initiatives None Specified

Government Websites None

ICT Policy Not Specified

Access to Government Services None specified

Government Access All Government departments have access to and use facsimile and internet e-mail

Legislation Not specified

Inhibitors The availability of training opportunities for government officials, a lack of political awareness of the opportunities presented by e-governance, staff knowledge of equipment, and staff understanding regarding the value and use of the internet have been identified as barriers inhibiting the development of e-governance

D: INTERNET INFRASTRUCTURE

ISPs IT&E Overseas Inc (www.ite.com) is the only ISP in the Marshall Islands. It first offered internet services in October of 1996

Typical ISP Costs*

	United States Dollars
Usage-based	$3.00 per hour
Minimum monthly cost	$25.00 per month for 1 hour and then $3 per hour thereafter
Unlimited access	
Schools & Hospitals	

Barriers None specified

Development Plans None specified

E: TELECOMMUNIC-ATIONS

National Telecommunications Authority (www.ntamar.com) is the sole provider of telecommunication services in the Marshall Islands. It has approximately 4,000 customers and is privately owned

F: BUDGETS

Not specified

G: OTHER SURVEYS

Surveys None specified

Development Initiatives None specified

Sharing Information None specified

Issues/Comment None

* Currency Conversions as at 16 August 2001

28 Appendix 6: NAURU*

A. COUNTRY INFORMATION

Population: 10,000

B. ICT EQUIPMENT

Access to Internet Services

Not known

Connectivity

Telephone, Fax, Internet e-mail and the World Wide Web are used daily

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Department	2	1	1	3	1

Web Pages

None

Staff Usage of Internet

Less than 10% staff use all Internet services, with the exception of Web Publishing which is not used at all

Internet Applications

www.oceania-olympic.org

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Department	**5**	**1**	**2**	**4**

Barriers

Staff understanding regarding the value of use, as well as the cost of both domestic and international telecommunications, have been cited as the **major** barriers constraining the use of ICT

Other barriers identified include cost of equipment and staff knowledge of equipment

Development Plans

Establishment of sports information center
Website development
Sports database on personnel, admin, athletes etc., statistics

* The survey was completed by the Department of Sports.

C: E-GOVERNANCE

ICT Equipment and Services	Not known
E-Governance Applications	E-mail and the web are used to list Government/IGO agencies and officials. No other applications
Government Initiatives	Not Known
Government Websites	
ICT Policy	No policy exists
Access to Government Services	One public Internet access point established in June 2001
Government Access	Seven Government departments use Facsimile, e-mail and the web
Legislation	No legislation in place
Inhibitors	High cost of Internet services, lack of digitised government information, cost of computers and other equipment, ownership and monopoly of telecom services, availability of technical support, availability of training opportunities for Government officials, lack of political awareness of the opportunities, staff knowledge of equipment and staff understanding regarding the value and use of the Internet were all identified as **major** barriers inhibiting the development of e-governance Unreliable Internet connections was identified as a further barrier

D: INTERNET INFRASTRUCTURE

ISPs Cenpac (Cenpac.net.nr) has a customer base of 2000

Typical ISP Costs*

	Australian Dollars	*United States Dollars*
Usage-based		
Minimum monthly cost	A$51.00 for 10 hours A$103.77 for 50 hours A$141.51 for 75 hours thereafter A$5.10 per hour	US$27.00 for 10 hours US$55.00 for 50 hours US$75.00 for 75 hours thereafter US$2.70 per hour
Unlimited access		
Schools & Hospitals		

Barriers The cost of equipment, access to the telephone network, user understanding regarding the value of use as well as the cost of domestic and international telecommunications have been cited as the **major** barriers in developing internet services

Development Plans None

E: TELECOMMUNIC-ATIONS

Nauru Telecommunications is a Government owned monopoly.

Department of Industry and Economic Development

F: BUDGETS

There is no centralised ICT budget

G: OTHER SURVEYS

Surveys

Development Initiatives

Sharing Information Internal (national) network (sharing of departmental databases)

Issues/Comment "The problem is the literacy level. Is there software for literacy improvement?"

* Currency Conversions as at 16 August 2001

29 Appendix 7: NIUE*

A. COUNTRY INFORMATION

Population: 1800

B. ICT EQUIPMENT

Access to Internet Services

Access to internet services in homes, in libraries, and at telecentres is less than 25% of the population. Access in the office environment and schools is between 25% and 50%. Over 75%, however, have access at internet cafes, internet Kiosks, and IUSN Public Access points

Connectivity

All 4 organisations use telephones and faxes greater than once a day. The ISP and the Broadcasting Corporation use e-mail and the WWW greater than once a day. The cultural centre uses both facilities approximately once a week. The Ministry uses e-mail approximately once a week and the Internet one a month or less. The ISP uses both high and low speed data connections greater than once a day. No organisations use PACTOK e-mail, audioconferencing, videoconferencing, V-SAT terminals, PEACESAT, or LEOS telephones

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
ISP	20	10	10	0	0
Cultural Cen	0	1	0	0	0
Ministry	34	4	4	34	11
Broadcasting	3	2	3	5	0

Web Pages

The ISP has a home page on the Internet (www.niue.nu); the other respondents do not

Staff Usage of Internet

All staff in the ISP use e-mail, the internet, listserve, online ordering, and web publishing in their work

All staff in the Broadcasting Corporation use e-mail, the internet, and listserve in their work.

Less than 10% of staff in the Ministry use e-mail and the Internet

* Four organisations completed the questionnaire: The Huanaki Cultural Center & Museum, Internet Users Society Niue (ISP), Ministry of Education, and the Broadcasting Corporation of Niue.

No staff at the Museum use any of these services

Internet Applications

The ISP advise that given the nature of their business, they use all relevant internet resources

The Museum advises that they are not yet connected to the internet

Ministry of Education: www.nzqa.gov.nz

Broadcasting Corporation: www.niuenews.nu, www.nzherald.co.nz, www.cnn.com

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
ISP	**3**	**3**	**0**	**3**
Cultural Cen	**2**	**2**	**1**	**1**
Ministry	**57**	**10**	**25**	**20**
Broadcasting	**5**	**5**	**2**	**2**

The Museum staff member who recently received training learnt basic computer skills

Ministry staff received basic familiarisation and word processing training

Broadcasting Corporation staff learnt office management and basic computing

Barriers

The cost of equipment, the reliability of the power supply, the lack of technical support, access to telephone networks, ISPs, bandwidth issues, and the cost of domestic and international telecommunications have been identified as **major** barriers constraining the internal use of ICT

Other barriers identified include staff knowledge of equipment and staff understanding regarding the value of ICT use

Development Plans

ISP: “We are an ISP designed to develop the IT and ITC infrastructure of the country of Niue. We are inhibited only by the restrictions of the local government, Telecom Niue, and the overall operating costs associated with Niue’s isolation and related infrastructure problems”

The Museum intends to catalog collections on the computer and to develop a web page in order to use the internet to their advantage

Ministry of Education:

- Schools to access internet
- Replacement of old computers
- Update of programs

Broadcasting Corporation:

- To set up a website for TV Niue and Radio Sunshine
- News online
- Develop CD-DVD production capabilities

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	-	-	300	120
Education	-	-	-	-
Business	-	-	-	-
Homes	-	-	110	110
Total	-	-	-	-

E-Governance Applications

E-mail and the internet are used to provide details of national events. The internet is also used for some regional events

Government Initiatives

Internet Services are provided by private organisations. The Government provides technical support through its 'Information Systems Office'

Government Websites

www.gov.nu is a Government news site

www.niueisland.com is a tourism site

ICT Policy

The Niue government has a draft ICT policy that is still under discussion

Access to Government Services

Building up computerised databases

Digitalising Government documents

Installing public internet access points

Government subsidizing of computer purchases

Training of Government officials in ICT

Subsidising internet service provision

Reinforcing ICT training in schools, training, & universities

Note: All initiatives are in their infancy

Government Access — All government departments in Niue have access to and use facsimiles, internet e-mail, and the internet

Legislation — No legislation exists to regulate electronic data and/or digital media

Inhibitors — The cost of equipment, unreliable internet connections, slow internet connections, a lack of digitised government information, a lack of political awareness of the e-governance opportunities, and the ownership of Telecom services have been identified as a **major** factor inhibiting the development of e-governance

Other inhibiting factors identified include the cost of internet service provision, a lack of technical support, staff knowledge of equipment, staff understanding regarding the value of the Internet, and the availability of training opportunities for Government officials

D: INTERNET INFRASTRUCTURE

ISPs — Niue has one ISP, namely the 'Internet Users Society Niue'. The ISP has 200 customers and commenced in June 1997

Typical ISP Costs — Internet service provision is free to all residents of Niue

Barriers — The cost of equipment, the availability of technical support, the reliability of the power supply, access to telephone networks, the cost of domestic and international telecommunications, bandwidth issues, and the management of domain names have been cited as **major** barriers in developing internet services

Other barriers indicated include the availability of people with technical and content skills, user understanding regarding the value of internet services, the quality of internet connections, and a lack of online resource material

Development Plans — The Niue government would like to manage the .nu domain and show a more equitable share of profits gained from

	sales. The Government would also like to set up a separate ISP for Niue
E: TELECOMMUNIC-ATIONS	Telecom Niue is a government owned monopoly and is the sole provider of telecommunications services. It currently has 900 customers
F: BUDGETS	There is a centralised budget for ICT

G: OTHER SURVEYS

Surveys	
Development Initiatives	Cultural Center: “Further training for trainees in this area” (Administration Department) Ministry: Setting up of computer centres in villages for educational and business purposes
Sharing Information	
Issues/Comment	

30 Appendix 8: PALAU*

A. COUNTRY INFORMATION

Population: 19,100

B. ICT EQUIPMENT

Access to Internet Services

Access to internet services in offices and at internet cafes is between 50% and 75%. Access is between 25% and 50% at homes. For schools, libraries, public access terminals, and telecentres, access is below 25%

Connectivity

Both organisations use telephones, faxes, and e-mail greater than once a day. PNCC uses the internet greater than once a day while the Museum uses it once a week. PNCC uses both low and high speed data connections greater than once a day, while the Museum never uses them. Both use audioconferencing once a month or less while both never use videoconferencing, PACTOK e-mail, V-SAT terminals, PEACESAT, or LEOS telephones

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
PNCC	5	40	50	15	3
Museum	10	2	1	8	1

Web Pages

PNCC has a home page on the Internet (www.palaunet.com)

Staff Usage of Internet

Staff usage of e-mail in both organisations is above 75%. Use of the internet is between 51% and 75% for PNCC and between 26% and 50% for the Museum. Between 25% and 50% of staff at PNCC uses Listserve while less than 10% use Web Publishing and Usenet. Online ordering is used by less than 25% of staff at PNCC

Internet Applications

Both organisations use a variety of research based and news websites

* The survey was completed by The Belau National Museum and the Palau National Communications Corporation.

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
PNCC	**85**	**75**	**50**	**6**
Museum	**16**	**10**	**0**	**0**

PNCC staff attended ECI, ADSL, GIS, CAD, Norstar, Pronet, and Internet workshops.

Barriers

The cost of international telecommunications has been cited as a **major** barrier constraining the internal use of ITC

Other barriers identified include the cost of equipment, the reliability of the power supply, the availability of online resources, and the cost of domestic telecommunications

Development Plans

PNCC (also the ISP) plans to provide unlimited flat-rate access in order to help develop e-governance and improve internet access for the people of Palau

The Museum wishes to establish a website

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	1400	-	500	450
Education	120	-	100	90
Business	-	-	550	500
Homes	6000	-	300	225
Total	8500	-	1450	1265

E-Governance Applications

No e-governance applications are provided by the Government in Palau

Government Initiatives

A Committee has been formed in Palau to build e-governance applications and provide cheap domestic internet access. Various departments are involved

Government Websites

There are currently no government websites

ICT Policy The Government of Palau has an ICT policy and is about to implement it

Access to Government Services Building up computerised databases. Digitalising government documents.

Both processes are in their infancy.

Government Access All Government departments have access to facsimiles, internet e-mail, the internet, and smart cards

Legislation Palau has no legislation for data protection, right to access, and ICT misuse. Copyright laws are, however, currently being considered

Inhibitors The high cost of internet services has been cited as a **major** inhibiting factor in the development of e-governance

Other inhibiting factors identified include the lack of digitised government information, the cost of equipment, the ownership of Telecom services, and the lack of political and staff awareness as to the value of ICT

D: INTERNET INFRASTRUCTURE

ISPs Palau National Communications Corporation is the only ISP in Palau. It has 1500 customers and commenced service in June 1997

Typical ISP Costs*

	United States Dollars
Usage-based	
Minimum monthly cost	US$15.00 for 2 hours US$30.00 for 8 hours US$99.00 for 28 hours US$250.00 for 75 hours US$500 for 175 hours
Unlimited access	
Schools & Hospitals	

Barriers ISPs and the cost of international telecommunication have been cited as **major** barriers in developing internet services

Other barriers identified include the cost of equipment and the cost of domestic telecommunication

Development Plans Museum: “We would like to have access to the internet but cost is a factor. It would help to lower cost to the institutions like museums and cultural centers”.

PNCC intends to (1) Add multiple backbone carriers to improve reliability; (2) Lower prices and increase connection

* Currency Conversions as at 16 August 2001

speed. (3) Develop high-speed national access for telehealth and distance learning.

E: TELECOMMUNIC-ATIONS

PNCC is a government owned monopoly with 7000 customers. There is also a mobile phone service with 2000 customers operated by Palau National Cellular Inc.

F: BUDGETS

Palau does not have a centralised budget for ITC

G: OTHER SURVEYS

Surveys

APT
ITU
East-West Center, Hawaii

Development Initiatives

Sharing Information

Issues/Comment

PNCC: "PNCC as a whole is very interested in any regional or other projects or plans to provide assistance in the area of ICT to to further our community and our country"

31 Appendix 9: PAPUA NEW GUINEA*

A. COUNTRY INFORMATION

Population: 5,100,000

B. ICT EQUIPMENT

Access to Internet Services

Access to the Internet is less than 25% of the population at all access points.

Connectivity

All organisations use telephones, facsimiles, and internet e-mail more than once a day. The one exception is the NCC which uses internet e-mail once a day. PMC, South Pacific Post, and Telikom all use the internet more than once a day. The Department of Education uses the internet once a day while the NCC never uses the internet. PMC use audioconferencing once a month or less. Telikom uses V-SAT terminals greater than once a day. The Department of Education, PMC, and Telikom use low speed data connections more than once a day. South Pacific Post, PMC, and Telikom use high speed data connections more than once a day. PACTOK e-mail, PEACESAT, and LEOS telephones are never used

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Dept of Educ	300	160	80	100	30
NCC	3	4	1	8	1
PMC	-	30	8	20	0
Sth Pac Post	43	22	35	25	3
Telikom	500	5	500	400	-

Web Pages

PMC, South Pacific Post, and Telikom have home pages on the interent

Staff Usage of Internet

Between 50% and 75% of Telikom staff use e-mail in their work while between 26% and 50% of PMC staff use it. Less than 25% of staff at the South Pacific Post use e-mail while less than 10% of staff in both NCC and the Department of Education use e-mail

Between 50% and 75% of Telikom staff use the internet in their work while between 25% and 50% of PMC staff use it. Less than 25% staff in the Department of Education and South Pacific Post use the internet while less than 10% of

* The survey was completed by five organisations: Department of Education, National Cultural Commission (NCC), Pacific Mobile Communications (PMC), South Pacific Post Limited, and Telikom PNG.

NCC staff use it
Less than 10% of the Department of Education staff use Listserve and less than 10% of Telikom staff use Usenet

Less than 10% of staff in the South Pacific Post and in Telikom use Web Publishing

No organisations use online ordering

Internet Applications

South Pacific Post has a website for its newspaper publication and uses an Intranet for the company

The Department of Education uses general web sites for e mailing and internet browsing. Staff also use the www.gov.pg government website regularly

PMC primarily uses e-mail and general websites

Telikom uses telecommunications websites

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Dep of Educ	**733**	**150**	**100**	**300**
NCC	**72**	**0**	**0**	**21**
PMC	**36**	**31**	**0**	**0**
Sth Pac Pst	**195**	**60**	**10**	**60**
Telikom	**790**	**500**	**-**	**-**

Barriers

The high cost of equipment, the cost of domestic and international telecommunications, the availability of technical support, the reliability of power supply, access to telephone networks, ISPs, bandwidth issues, staff knowledge of equipment, and staff understanding of the value of ICT have been identified as **major** barriers constraining the internal use of ICT

Another barrier identified is the availability of online resource material

Development Plans

The Department of Education intends to (1) develop a website (2) expand and enhance the existing computer network systems (3) provide specialist training for IT staff and (4) to trial audio and video conferencing to selected remote schools

South Pacific Post: “We have a five-year plan to establish a second press site. However the local telecom provider is too unreliable to make such an investment. If it is privatised by a world reputable organisation, we would reconsider the five year plan”.

Telikom intend to establish a new multiservice and broadband data network.

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	4000	800	3200	1000
Education	2000	50	200	5
Business	8000	1500	6000	1200
Homes	30000	5000	2500	2000
Total	44000	7350	11900	4205

E-Governance Applications

All e-governance applications listed are provided by the government through e-mail and the internet

Government Initiatives

There are plans for a government Intranet and to put key dates and statistics and library material onto CD-ROM

Government Websites

There are two government websites:
www.gov.pg
www.pngonline.gov.pg

ICT Policy

The PNG government has a draft ICT policy that is “:due for final draft” [Contact: Hanao Iduhu, Office of Information and Communication]

Access to Government Services

Building up computerised databases
Digitalising government documents
A government wide Intranet

Government Access

The following departments have access to and use facsimiles, internet e-mail, and the internet: Administrative Services, Agriculture, Courts, Culture, Economic Development, Education, Foreign Affairs, Health, Internal Affairs, Libraries, Police, Social Security, Statistics

The following departments use facsimiles and internet e-mail: Archives, Electoral, Inland Revenue, Labour, Museum, Transport, Woman’s Affairs, Youth

Legislation

Respondents to the survey had differing views on the state of legislation in PNG covering data protection, right to access, copyright, and ICT misuse. Some believed no

legislation to be in place, others felt legislation was under discussion, while yet others believed that legislation had been enacted.

Inhibitors The high cost of internet services, unreliable internet connections, slow internet connections, a lack of digitised government information, the high cost of equipment, the ownership of telecom services, the availability of technical support, the availability of training opportunities for government officials, a lack of political awareness of e-governance opportunities, staff knowledge of equipment, and staff understanding regarding the value of the internet have all been cited as **major** inhibiting factors in the development of e-governance

D: INTERNET INFRASTRUCTURE

ISPs PNG has multiple ISPs:

Daltron Electronics. This ISP has 7000 customers and commenced service in 1998

Datec. This ISP has 5000 customers and commenced service in 1998

Global Net. This ISP has 5000 customers and commenced service in 1999

Online South Pacific Ltd. This ISP has 2300 customers and commenced service in 1997

High Tech Industries Ltd. This ISP has 720 customers and commenced service in 2001

Typical ISP Costs*

	Papua New Guinea Kina	*United States Dollars*
Usage-based		
Minimum monthly cost (using High Tech Industries Ltd rates)	K$25.87 for 10 hours (then K$3.10 per hour) K$49.67 for 20 hours (then K$3.10 per hour) K$186.21 for 100 hours (then K$1.86 per hour)	US$7.50 for 10 hours (then US$0.90 per hour) US$14.40 for 20 hours (then US$0.90 per hour) US$54.00 for 100 hours (then US$0.54 per hour)
Unlimited access (using Datec rates)	K$113.79 per month	US$33.00 per month
Schools & Hospitals		

* Currency Conversions as at 16 August 2001.

Barriers

The high cost of equipment, the availability of technical support, the reliability of power supply, the quality of internet connections, access to telephone networks, people with technical skills, people with content skills, user understanding regarding the value of the internet, the availability of online resource material, the cost of international and domestic telecommunications, bandwidth issues, and domain name management have been cited as **major** barriers in developing internet services

A further barrier identified is Internet Service Providers

Development Plans

The Ministry of Education has plans to develop a private network on the Education and Research network that will encompass and link all of the universities and major tertiary education and research institutions through PNG

PMC has plans for bandwidth expansion

South Pacific Post: "Privatisation of Telecom should improve services"

Telikom: "After deregulation, Telikom PNG may provide internet services"

E: TELECOMMUNIC-ATIONS

Telikom PNG is a government owned organisation with 66,000 customers. It has a monopoly on telecommunication services in PNG

F: BUDGETS

The government in PNG has a centralised ICT budget

G: OTHER SURVEYS

Surveys

Telikom: "I do not know of any surveys, but my company does have some sort of marketing research for company use"

Development Initiatives

Department of Education: Human Resources Management and payroll systems and a Government Intranet (to be done by the Office of Communication and Information)

Sharing Information

Department of Education: Development of an education and research network

Issues/Comment

Department of Education: "ICT development is done ad-hoc. There needs to be a blueprint for ICT development so that change can be uniform rather than staggered"

South Pacific Post: "PNG needs as much help as possible otherwise it will get lost"

National Cultural Commission: "In PNG we do not really have an ICT infrastructure"

32 Appendix 10: SAMOA*

A. COUNTRY INFORMATION

Population: 167,000

B. ICT EQUIPMENT

Access to Internet Services

Between 25% and 50% of the population have access to the internet in offices and at telecentres. Less than 25% of people have access to the internet at home, in schools, in libraries, at public access terminals, and internet cafes

Connectivity

All four organisations use telephones, facsimiles, internet e-mail, and the internet greater than once a day. The Ministry of Youth, Sports and Cultural Affairs uses PACTOK e-mail greater than once a day. SCL uses both high speed and low speed data connections greater than once a day and audioconferencing approximately once a week. It also uses LEOS telephones once a month or less. SPREP uses low speed data connections greater than once a day and uses audio conferencing once a month or less. None of the organisations use videoconferencing, V-SAT terminals or PEACESAT

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Min of P & T	9	2	8	1	3
Min of Youth	5	4	1	5	1
SCL	100	60	90	30	40
SPREP	45	25	70	17	0

Web Pages

SPREP has a home page on the internet: www.sprep.org.ws

Staff Usage of Internet

Between 50% and 75% of staff at the Ministry of Posts and Telecommunications use e-mail while between 26% and 50% of staff at SCL use e-mail. Less than 25% of staff at the Ministry of Youth, Sports, and Cultural Affairs use it

Between 50% and 75% of staff at the Ministry of Posts and Telecommunications use the internet. Between 25% and 50% of staff at the Ministry of Youth, Sports, and Cultural Affairs use the internet while less than 25% of staff at SCL

* The survey was completed by four organisations: Ministry of Posts and Telecommunications, Ministry of Youth, Sports and Cultural Affairs, Samoa Communications Limited (SCL), and SPREP, a regional organisation based in Samoa.

use it
Less than 10% of staff at the Ministry of Youth, Sports, and Cultural Affairs use Listserve, Usenet, online ordering, and web publishing

More than 75% of SPREP staff use e-mail and the internet. Between 25% and 50% of staff use Usenet, while less than 25% use listserve, online ordering, and web publishing

Internet Applications

The organisations use a wide variety of sites including internet based e-mail sites, ICT sites, and local sites

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Min of P & T	**14**	**10**	**10**	**10**
Min of Youth	**35**	**4**	**4**	**9**
SCL	**130**	**70**	**30**	**12**
SPREP	**70**		**3**	

Ministry of Posts and Telecommunications staff learnt basic computer skills in Word and Excel. Ministry of Youth, Sports, and Cultural Affairs received training in Graphic Design. SCL staff received application specific training. SPREP staff learnt NT administration and 'PageMaker'

Barriers

The cost of equipment, the cost of international and domestic telecommunications, the availability of technical support, and bandwidth issues have been identified as **major** barriers constraining the internal use of ICT. Other factors indicated include staff understanding regarding the value of ICT and staff knowledge of equipment.

Development Plans

The Ministry of Posts and Telecommunications plans to use online education services for staff training and development as it is cheaper than local or overseas training

The Ministry of Youth, Sports, and Cultural Affairs plans to install a network system so that everyone has access to the information and internet resources

SCL is currently upgrading LAN's and upgrading services and providing a controlled environment for log on

SPREP[8]:
Satellite communication for regional IP based network.

[8] South Pacific Regional Environment Programme (SPREP) is a regional organisation, based in Samoa

A unified communication system
Comprehensive information management project.

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	3000	500	600	400
Education	500	-	-	-
Business	3000	1000	1000	400
Homes	5000	500	600	300
Total	11500	2000	2200	1100

E-Governance Applications

A list of government agencies and officials are provided by e-mail, on the internet, through online discussion groups, and online ordering.

National statistics, regional statistics, national events, regional events, national archives, the counting of election votes, citizen feedback, bill payment, the reporting of faults and government forms are provided by e-mail and on the internet

Government Initiatives

SCL: "The Samoan Government is at the forefront of initiatives to improve existing and implement new IT projects. It is deeply committed to the improvement of all IT sections and the internet as a whole". These projects include:

ASYCUDA Project (Customs Department)
Teleconferencing and Videoconferencing (NUS/Health Dept/Education Dept)
Treasury Project (Treasury/Audit Department)
Placing the central bank on-line

Government Websites

None of the survey respondents from Government agencies reported having a website.

ICT Policy

No Government ICT policy exists

Access to Government Services

Building up computerised databases

Digitalising government documents

Installing public access points

Training of government officials in ICT and computers

Reinforcing ICT training in schools, training institutes, and universities

Government Access

The following departments have access to and use facsimiles, internet e-mail, and the internet: Administration Services, Agriculture, Courts, Foreign Affairs, Health Access, Housing, Inland Revenue, Labour, Transport, Social Security, Statistics, Water Services, Woman's Affairs

The following departments use facsimiles and internet e-mail: Archives, Economic Development, Electoral, Internal Affairs, Libraries, Museums, Police, Youth

Legislation

There are no laws regulating data protection. There are, however, laws in place dealing with right to access and copyright. There is currently legislation under discussion regarding ICT misuse

Inhibitors

ISPs, slow and unreliable internet connections, a lack of political awareness of e-governance opportunities, and the high cost of equipment have been cited as **major** inhibiting factors in the development of e-governance

Other factors identified include a lack of digitised government information, the ownership of telecom services, the availability of technical support, staff knowledge of equipment, and staff understanding regarding the value of the internet

D: INTERNET INFRASTRUCTURE

ISPs

Samoa has at least three ISPs:

Computer Services Ltd: This ISP has approximately 2000 customers and commenced service in 1997

iPasifika: This ISP has approximately 500 customers and commenced service in 1999

LeSamoa: This ISP has approximately 500 customers and commenced service in 1998

Typical ISP Costs*

	Western Samoan Tala	*United States Dollars*
Usage-based		
Minimum monthly cost (using CSL rates)	T$30.00 for 20 hours T$80.00 for 80 hours T$90.00 for 130 hours	US$9.00 for 20 hours US$24.00 for 80 hours US$39.00 for 90 hours
Unlimited access	T$300.00 per month	US$90.00 per month

* Currency Conversions as at 16 August 2001

(using CSL rates)		
Schools & Hospitals (using CSL rates)	All charges reduced by 50%	All charges reduced by 50%

Barriers

The high cost of equipment, legislation, bandwidth issues, and the high cost of international and domestic telecommunications have been cited as **major** barriers in developing internet services

Other barriers identified include the availability of technical support, the quality of internet connections, a reliable power supply, access to telephone networks, people with technical and content skills, user understanding regarding the value of the internet, and domain name management

Development Plans

There is an upgrade (partly finished) to digitise the telephone exchange

Installation of fibre optic cables around the main business area is nearing completion

The introduction of wireless technologies for the extension of data traffic

An upgrade of the international link as well as stabilisation through alternate routing in case of primary route failure

SCL want to introduce technologies that will allow intercommunication without the use of a telephone.

E: TELECOMMUNIC-ATIONS

Samoa has a competitive telecommunications environment. SCL (which is a government owned company) has approximately 10,000 customers. Lesas Telephone services also provides telecommunications services. Telecom Samoa Cellular operates a mobile service with 3000 customers

F: BUDGETS

The government in Samoa has a centralised budget for ICT

G: OTHER SURVEYS

Surveys

Samoa Government Survey (Assisted by World Bank)

ADB

IT PacNet Report (www.sopac.org.fj)

Development Initiatives

Satellite covering Samoa for both voice and data

Satellite footprint covering Samoa for Internet traffic

Sharing Information

Issues/Comment

Department of Posts and Communications: "At the moment there is no national policy on ICT. There has not been a specific focus on developing such a policy although we are starting to raise it as an issue to be taken up as part of the overall communications policy. We will probably need assistance in coordinating an ICT national policy"

SCL: "SCL is an SOE (State Owned Enterprise) with a Board of Directors including members from the private sector. Funding is generated from revenue or loans. We pay a dividend to our owners. We have an exclusive license for line infrastructure services only"

33 Appendix 11: SOLOMON ISLANDS*

A. COUNTRY INFORMATION

Population: 410,000

B. ICT EQUIPMENT

Access to Internet Services

Less than 25% of the population have access to the Internet in their homes or at work. Access in schools is less than 10%. There is little or no access from libraries, or other public access centres

Connectivity

Telephone, Fax, Internet e-mail and the World Wide Web are used daily. Both low speed and high-speed data services are also used every day. Other telecommunication services are never used or in the case of audioconferencing, used infrequently (once a month)

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Solomon Telekom	-	30	30	15	15

Web Pages

www.solomon.com.sb

Staff Usage of Internet

Over 50% staff use e-mail and Listserves. Less than 25% use the Web. Even fewer use the Internet for web publishing (<10%). Other Internet services are not used

Internet Applications

A wide variety of sites are used mostly for business purposes, e.g. ITU, CTO, Inmarsat

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Solomon Telekom	**152**	**85**	**0**	**50**

Barriers

Cost of equipment has been cited as a **major** barrier constraining the use of ICT

Other barriers identified include staff understanding

* The survey was completed by Solomon Telekom Co Ltd

	regarding the value of use of ICT as well as the cost of both domestic and international telecommunications
Development Plans	Upgrade remote links for corporate LAN/WAN to another 6 provincial Business Centers. Enable use of email and other corporate resources such as online queries, faults, etc

C: E-GOVERNANCE

ICT Equipment and Services	No figures supplied
E-Governance Applications	Some applications using e-mail and the Web A UNDP sponsored project SI Development Participatory Program (SIDAPP), administered under the Ministry of Provincial Government
Government Initiatives	People First Network in the public/Government sector
Government Websites	Ministry of Commerce: www.commerce.gov.sb (general information, investment) Ministry of Provincial Government: www.peoplefirst.net.sb (community development)
ICT Policy	None exists
Access to Government Services	Nothing significant
Government Access	Not known
Legislation	Not known
Inhibitors	Cost of computers and other equipment, availability of technical support, availability of training opportunities for Government officials, lack of political awareness of the opportunities, staff knowledge of equipment and staff understanding regarding the value and use of the Internet were all identified as **major** barriers inhibiting the development of e-governance *"There is no urgency to embrace the opportunities presented by technology by legislators, civil servants, etc. The problem remains that the perception is it is very costly to change, not fully realising that once change in the way things are done is complete, greater benefit, efficiency and productivity may arise."*

D: INTERNET INFRASTRUCTURE

ISPs

Solomon Telekom Co Ltd (www.solomon.com.sb) has a customer base of 600. Service was first offered in 1996/97

Typical ISP Costs*

	Solomon Islands Dollar	*United States Dollars*
Usage-based		
Minimum monthly cost	SI$200.00 for 10 hours SI$1,000 for 50 hours thereafter SI$20.00 per hour peak & SI$15.00 per hour off peak	US$38.00 for 10 hours US$190.00 for 50 hours thereafter US$3.80 per hour peak & US$2.85 per hour off peak
Unlimited access		
Schools & Hospitals	SI$50 for 10 hours and then SI$5.00 per hour	US$9.50 for 10 hours and then US$0.95 per hour

Barriers

The cost of equipment, people with content skills and available international bandwidth have been cited as the **major** barriers in developing internet services

Other barriers identified include availability of technical support, the reliability of power supply, access to the telephone network, people with technical skills as well as the cost of telecommunications both within the country and internationally

Development Plans

The only ISP, Solomon Telekom Co Ltd is negotiating for asymmetrical bandwidth downlink to come direct from the USA (where most of the content is). At present there is a 256kbps symmetrical access to Cable & Wireless Optus Spinnaker Service

Nationally, a digital DAMA VSAT system is being chosen (to be supplied by ViaSat) and one of the essential requirements is a clear 64kbps clear data Internet channel

E: TELECOMMUNIC-ATIONS

Solomon Telekom (www.solomon.com.sb) is a private sector monopoly with 5000 customers

* Currency Conversions as at 16 August 2001

F: BUDGETS No centralised budget.

G: OTHER SURVEYS

Surveys	
Development Initiatives	
Sharing Information	Pacific Island Model
Issues/Comment	

34 Appendix 12: TOKELAU*

A. COUNTRY INFORMATION

Population: 1,507

B. ICT EQUIPMENT

Access to Internet Services

Less than 25% of the population have access to the Internet in their homes or schools. There is no access from libraries, or other public access centres. Between 50% and 75% have access through their place of work

Connectivity

Telephone, Fax and Internet e-mail are used daily. The World Wide Web and low speed data services are used only once a month. Other telecommunication services are never used

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Teletok	4	2	3	2	1

Web Pages

No web page

Staff Usage of Internet

Less than 25% of staff use e-mail. Other Internet services are never used

Internet Applications

None

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Teletok	**12**	**3**	**0**	**0**

Barriers

Reliable power supply and telecommunications bandwidth have been cited as **major** barriers constraining the use of ICT

Other barriers identified include the cost of equipment, availability of technical support, Internet Access Providers, availability of online resource material and the cost of both domestic and international telecommunications

* The survey was completed by Telecommunications Tokelau Corporation (Teletok).

Development Plans None specified

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW (E-mail only)*
Government	25	0	15	15
Education	5	0	5	5
Business	33	0	5	3
Homes	200	0	3	1
Total	263	0	28	24

E-Governance Applications Not known

Government Initiatives Not known

Government Websites Not known

ICT Policy Not known

Access to Government Services Not known

Government Access Not known

Legislation Not known

Inhibitors Not known

D: INTERNET INFRASTRUCTURE

ISPs Teletok waiting on ccTLD.tk authorization from ICANN

Typical ISP Costs*

	New Zealand Dollars	*United States Dollars*
Usage-based	NZ$2.20 per minute	US$0.95 per minute
Minimum monthly cost		

* Currency Conversions as at 16 August 2001

Unlimited access		
Schools & Hospitals		

Barriers

The cost of equipment has been cited as the **major** barrier in developing internet services

Other barriers identified include availability of technical support, the reliability of power supply, quality of Internet connection, Internet Service providers, people with technical skills, the cost of telecommunications both within the country and internationally and domain name management

Development Plans

Project Email Tokelau

Teletok's own investigation

E: TELECOMMUNIC-ATIONS

Teletok is a Government owned monopoly with 260 customers

F: BUDGETS

Not known if the Government has a centralised budget for ICT

G: OTHER SURVEYS

Surveys

Development Initiatives

Sharing Information

Issues/Comment

35 Appendix 13: TONGA*

A. COUNTRY INFORMATION

Population: 98,000

B. ICT EQUIPMENT

Access to Internet Services

Access to the internet is between 25% and 50% of the population in the office. Less than 25% of people have access to the internet at home, in schools, at telecentres, and internet cafes

Connectivity

All four organisations responding to the survey use telephones, facsimiles, internet e-mail, and the internet greater than once a day. PACKTOK e-mail is used by both the Prime Minister's Office and the Royal Palace Office once a month or less. Audioconferencing is used by the TCC approximately once a week. Low speed data connections are used by the Prime Ministers Office greater than once a day. High Speed data connections are used by the TCC greater than once a day and once a month or less by the Prime Minister's Office. The TCC uses LEOS telephones once a month or less. No organisations use videoconferencing, PEACESAT, or V-SAT terminals

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
TCC	39	5	35	15	5
PM's Office	2	20	15	12	15
TBC	15	1	2	10	2
Royal Palace	1	1	1	2	0

Web Pages

Tonga Communications Corporation (TCC) and the Prime Minister's Office have a home page on the internet

Staff Usage of Internet

More than 75% of TCC staff use e-mail. Between 26% and 50% of staff in the Prime Ministers Office use e-mail while less than 10% of staff in the TBC and the Royal Palace Office use e-mail. More than 75% of TCC staff use the internet. Less then 25% of staff in the Prime Ministers Office use the internet while less than 10% of staff in the TBC and the Royal Palace Office use the internet. Less than 10% of staff in the TCC and the Prime Ministers Office use Listserve and Usenet. Less than 10% of TCC staff use online ordering. Web Publishing is used

* The surveys were completed by the Tongan Traditions Committee, the Tonga Communications Corporation, the Tonga Broadcasting Commission and the Department of Communications in the Prime Minister's office.

by less than 25% of TCC staff and less than 10% of staff in the Prime Ministers Office

Internet Applications

The organisations use a wide variety of sites including general news sites, the TCC site, the Forum Secretariat site, Usenet groups, Newsgroups, and Pac News

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
TCC	**309**	**100**	**40**	**20**
PM's Office	**65**	**55**	**40**	**40**
TBC	**63**	**15**	**2**	**10**
Royal Palace	**6**	**4**	**1**	**3**

TCC staff received computer awareness training. Staff in the Prime Ministers Office attended short computer courses. TBC staff attended a website design workshop. Staff in the Royal Palace Office received training on general IT matters

Barriers

The high cost of equipment and the cost of domestic and international telecommunications have been cited as **major** barriers constraining the internal use of ICT

Other barriers identified include the availability of technical support, the reliability of power supply, access to telephone networks, ISPs, staff knowledge of equipment, and staff understanding of the value of ICT

Development Plans

TCC has plans for a mobile system (GSM). This digital mobile service will be launched in October

Prime Ministers Office intends to install a new network and for accounts and file systems to be computerised

The Royal Palace plans to increase staff training This will mean having relieving staff and will provide increased appeal to foreign interests and foreign institutions

C: E-GOVERNANCE

ICT Equipment and Services

Users	*Telephones*	*Mobiles*	*Computers*	*WWW*
Government	472	19	400	109
Education	500	15	300	75
Business	1490	137	600	550
Homes	7318	1165	1000	600
Total	8708	336	2300	1334

E-Governance Applications

National statistics and national archives are provided by e-mail, on the internet, and CR-ROM

A list of Government agencies and officials, regional statistics, national events, and government forms are provided by e-mail and on the internet

Government Initiatives

A government website has been developed and it contains information for all the government Ministries

Government Websites

www.pmo.gov.to is a government website offering general information

ICT Policy

The Prime Minister's Office reported that the Government has an ICT policy that has been partly implemented

Access to Government Services

Building up computerised databases

Digitalising government documents

Installing public access points

Government subsidising of internet service provision

Government subsidising of computer purchases

Training of government officials in ICT and computers

Reinforcing ICT training in schools, training institutes, and universities

Government Access

All departments have access to and use faxes, e-mail, and the Internet

Legislation

The Prime Minister's Office reported that Tonga has enacted legislation for data protection, right to access, copyright, and ICT misuse

Inhibitors

ISP's, slow and unreliable connections, the cost of equipment, and the ownership of Telecom services have been cited as **major** inhibiting factors in the development of e-governance

Other factors identified include a lack of digitised government information, the availability of technical support, a lack of training opportunities, staff knowledge of equipment, and staff understanding regarding the value and use of the internet

D: INTERNET INFRASTRUCTURE

ISPs

Tonga Communications Corporation is the only ISP in Tonga. The ISP has 1200 customers and commenced service in 1997

Typical ISP Costs*

	Tongan Pa'anga	*United States Dollars*
Usage-based		
Minimum monthly cost	P$20.00 for 2 hours (then P$10.00 per hour) P$35.00 for 5 hours (then P$8.00 per hour) P$70.00 for 13 hours (then p$6.00 per hour)	US$9.40 for 2 hours (then US$4.70 per hour) US$16.45 for 5 hours (then US$4.70 per hour) US$32.90 for 13 hours (then US$2.82 per hour)
Unlimited access		
Schools & Hospitals		

Barriers

The cost of equipment and the cost of international telecommunication have been cited as **major** barriers in developing internet services

Other barriers identified include the reliability of power supply, the quality of internet connections, access to telephone networks, ISPs, people with content skills, user understanding regarding the value of the internet, domain name management, bandwidth issues, and the cost of domestic telecommunication

Development Plans

TCC plans to:

Expand internet and e-mail services to the outer islands

Increase the bandwidth of link to USA

Establish access centres in Nuku'alofa and the outer Islands

* Currency Conversions as at 16 August 2001

E: TELECOMMUNIC-ATIONS

TCC was registered as a company in February 2001 and is wholly owned by the Government of Tonga. TCC has approximately 8000 customers and at the time of the survey, had a monopoly on the provision of all telecommunication services. Competition in the provision of telephone and Internet was expected from Shoreline Communications, but according to press reports, the project was cancelled in November 2001[9].

F: BUDGETS

Tonga has a centralised ICT budget

G: OTHER SURVEYS

Surveys	ICT (TCC)
	Treasury (Ministry of Finance)
	Education (Ministry of Education)
	Tonga Broadcasting Commission (Prime Minister's Office)
Development Initiatives	
Sharing Information	Archives
	UNESCO
	Natural / Cultural heritage
	IP Network
	VOIP
Issues/Comment	Royal Palace Office: "Our geographical / isolated islands are directly linked to foreign parties, therefore, giving little expenses to travel and physical movements"

[9] "Tonga cans Internet project", Australian IT, 23 November 2001

36 Appendix 14: TUVALU*

A. COUNTRY INFORMATION

Population: 10,000

B. ICT EQUIPMENT

Access to Internet Services

Less than 25% of the population have access to the Internet in their homes, in telecentres, and the Office of Computer department. However, between 25% and 50% have access through their place of work

Connectivity

Ministry: Telephone, Fax, Internet e-mail and the World Wide Web are used by the Government greater than once a day. Regular use is also made of both low and high speed data connections as well as Low Earth Orbit satellite telephones

Computer Department: Telephone, Fax, Internet e-mail, the World Wide Web, PACTOK e-mail, audio-conferencing and video-conferencing, and low-speed data connections are used by the Computer Department greater than once a day

TNC: Telephone, Fax, Internet e-mail, the World Wide Web, low and high speed data connections, LEOS telephones are all used greater than once a day

Computers

Organisation	*Production Computers*	*Admin. Computers*	*Internet Computers*	*Computers 3+ Years old*	*Broken Computers*
Ministry (Admin Only)	-	4	1	4	1
Comp Dept	5	2	2	2	0
TNC	9	9	2	7	3

Web Pages

www.tuvalu.tv is the home page for both the Ministry and the Computer Department

Staff Usage of Internet

Ministry: Less than 25% of staff use e-mail and the WWW in their work

Computer Department: More than 75% of staff use e-mail in their work. Less than 10% use the WWW, on-line ordering, and web publishing

TNC: Less than 10% of staff use e-mail and the WWW in their

* The survey was completed by three organisations: Ministry for Works, Communications and Transport, the Government Computer Department, and the Tuvalu National Commission.

work

Internet Applications The Computer Department uses general websites

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Ministry (Admin Only)	**10**	**10**	**0**	**3**
Comp Dept	**4**	**1**	**2**	**4**
TNC	**15**	**3**	**0**	**-**

Computer staff received training on domain name registration

Barriers The cost of equipment, staff understanding as to the value of ICT, access to telephone networks, bandwidth issues, and the cost of both domestic and international telecommunications have been cited as **major** barriers constraining the use of ICT in the Tuvalu Government

Other barriers identified include availability of technical support, a reliable power supply, ISPs, staff knowledge of ICT equipment, a lack of on-line resource material

Development Plans Ministry: Ensure ICT is available to everybody at the least cost

Computer Department: “To provide a better IT service and make people aware of ICT and to utilise it”

TNC: "This organisation would like to provide adequate knowledge for the organisation staff in order for them to be able to use new communication technologies so that by 2003 most of them should have access to the internet"

C: E-GOVERNANCE

ICT Equipment and Services 150 telephones in Government

No cellphones

E-Governance Applications None specified

Government Initiatives

Ministry: "The Tuvalu government has recognised the need to develop e-governance but has not made plans or embarked on any specific e-governance initiatives"

TNC: An application for a project to establish an Internet Café has been lodged by the Tuvalu Council of Woman

Government Websites

No official government website

ICT Policy

An ICT policy is currently under discussion

Access to Government Services

Building up computerised databases

Digitalising Government documents

Installing public internet access points

Government Subsidising of computer purchases

Training of Government officials in ICT

Subsidising internet service provision

Reinforcing ICT training in schools, training, & universities

Government Access

All government departments use Facsimile, email, and WWW

Legislation

There is some copyright law in place in Tuvalu

Inhibitors

The cost of internet services, slow connections, a lack of digitised government information, equipment costs, and a lack of political and staff awareness of the opportunities and value of ICT have been cited as the **major** inhibiting factors in the development of e-governance

Other factors identified include unreliable Internet connections, ownership of telecom services, a lack of technical support and training opportunities for government officials

D: INTERNET INFRASTRUCTURE

ISPs

Tuvalu ISP has 254 customers and commenced service in October 1999

Typical ISP Costs*

	Australian Dollars	*United States Dollars*
Usage-based	AUD$4.20 per hour	US$2.23 per hour
Minimum monthly cost	AUD$10.00 per month and AUD$0.07 per	US$5.30 per month and US$0.04 per minute

* Currency Conversions as at 16 August 2001

	minute used	used
Unlimited access	AUD$200.00 per month	US$106.00 per month
Schools & Hospitals		

Barriers

The cost of equipment, the availability of technical support, and the cost of telecommunications both within Tuvalu and internationally have been cited as **major** barriers in developing internet services

Other factors identified include the reliability of the power supply, the quality of the Internet connections, access to telephone networks, ISPs, people with technical and content skills, user understanding regarding the value of use, the availability of international bandwidth and domain name management

Development Plans

Ministry: To be able to provide the service to rural areas at minimum cost so that services are affordable to people in rural areas

E: TELECOMMUNIC-ATIONS

Tuvalu Telecom Corporation is a Government owned monopoly

F: BUDGETS

The Government has a centralised budget for ICT

G: OTHER SURVEYS

Surveys

Development Initiatives

Sharing Information

Issues/Comment

37 Appendix 15: VANUATU*

A. COUNTRY INFORMATION

Population: 186,700

B. ICT EQUIPMENT

Access to Internet Services

Between 25% and 50% of the population have access to the Internet in their homes or in telecentres. Over 75% have access through their place of work, Internet cafes, Government institutions. Access through schools and public libraries is much lower (less than 25%)

Connectivity

Telecom: Telephone, facsimile, Internet e-mail, World Wide Web, PACTOK email and high speed data services are used more than once a day. Infrequent use is made of other telecommunication services

VBTC: Telephone and facsimile are used greater than once a day while internet e-mail is used once a day. No other telecommunication services are used

Computers

Organisation	***Production Computers***	***Admin. Computers***	***Internet Computers***	*Computers 3+ Years old*	***Broken Computers***
Telecom Vanuatu	70	20	70	5	0
VBTC	19	2	2	15	0

Web Pages

www.tvl.net.vu

www.vbtc.com.vu

Staff Usage of Internet

Telecom: Telephone, facsimile, Internet e-mail, World Wide Web, PACTOK email and high speed data services are used more than once a day. Infrequent use is made of other telecommunication services

VBTC: Telephone and facsimile are used greater than once a day while internet e-mail is used once a day. No other telecommunication services are used

Internet Applications

Telecom: Internal Intranet
VBTC: Pacnews site and other general news sites

* The survey was completed by Telecom Vanuatu Limited, the Vanuatu Broadcasting and Television Corporation (VBTC) and the Ministry of Lands and Natural Resources.

Staff Training

Organisation	*Total staff*	*Staff Confident with ICT and Computers*	*Staff Recently Trained*	*Staff Learning Computer Skills on Job*
Telecom Vanuatu	**181**	**100**	**100**	**20**
VBTC	**56**	**34**	**11**	**-**

Telecom staff received basic, intermediate and advanced computer training.

VBTC staff attended journalism workshops

Barriers

The cost of equipment and the cost of both domestic and international telecommunications have been cited as **major** barriers constraining the use of ICT

Other barriers identified include, ISPs, availability of technical support, bandwidth issues, staff knowledge of equipment, staff understanding regarding the value of ICT use, and the availability of on-line resources

Development Plans

Telecom:
Introduce Internet and email to all secondary schools
Introduce GSM Mobile and roaming services

VBTC:
Further develop VBTC on-line
Internet will be used more to reduce the cost of communication within the organisation and between different offices

C: E-GOVERNANCE

ICT Equipment and Services

Not known

E-Governance Applications

A list of Government agencies and officials, and national and regional statistics, are provided by e-mail

VBTC: *"E-governance is not promoted and the government does not assist to develop it"*

Government Initiatives

Economic and Social Development Department

Government Websites None

ICT Policy No ICT policy exists

Access to Government Services Building up computerised databases

Digitalising Government documents

Government Subsidising of computer purchases

Training of Government officials in ICT

Reinforcing ICT training in schools, training institutes & universities

Government Access All Government departments use facsimile, e-mail and WWW

Legislation Legislation has been enacted to cover right to access, copyright, and ICT-misuse

Inhibitors The cost of computers and other equipment, the high cost of Internet Services, the availability of digitised government information, the ownership of Telecom services, a lack of technical support, and a lack of political and staff awareness of the opportunities presented by e-governance has been cited as the **major** inhibiting factor in the development of e-governance

Other factors identified include the availability of training opportunities for Government officials, and slow and unreliable internet connections

VBTC: *"Political leaders do not realise how e-governance is cost effective when efficiently used. Plus the monopoly will never promote the cost of e-governance"*

D: INTERNET INFRASTRUCTURE

ISPs Telecom Vanuatu Limited (www.tvl.net.vu) has 1020 customers. Commenced service in 1996

Typical ISP Costs*

	Vanuatu Vatu	*United States Dollars*
Usage-based		
Minimum monthly cost	Vt600 per hour for 5 hours Vt450 per hour for 10 hours	US$4.25 per hour for 5 hours US$3.18 per hour for 10 hours

* Currency Conversions as at 16 August 2001

	Vt325 per hour for 20 hours Vt275 per hour for 40 hours	US$2.30 per hour for 20 hours US$1.95 per hour for 40 hours
Unlimited access		
Schools & Hospitals	Internet access is free for schools between specified times	Internet access is free for schools between specified times

Barriers

The cost of equipment, the availability of technical support, the reliability of power supply, the quality of Internet connections, ISPs, user understanding regarding the value of use, as well as the cost of telecommunications both within Vanuatu and internationally have been cited as **major** barriers in developing internet services

Other barriers identified include the lack of people with technical and content skills, access to telephone networks, the availability of on-line resources, and bandwidth issues

Development Plans

Telecom: Increase customer access and number of customers

Comment: VBTC is interested in internal ICT development in the following areas: internal network, NEWSBOSS, online news service, TV transmission

E: TELECOMMUNIC-ATIONS

Telecom Vanuatu Limited (www.tvl.net.vu) is a private sector monopoly with 4500 customers

F: BUDGETS

The Government does not have a centralised budget for ICT

G: OTHER SURVEYS

Surveys

Development Initiatives

Sharing Information

Issues/Comment

VBTC: *"The Government is not organised at a fiscal level to produce a development plan for internet services. Things may not develop in the next two years"*

38 Appendix 16: Survey Questionnaire

United Nations Educational, Scientific and Cultural Organization.

SURVEY OF INTERNET INFRASTRUCTURE AND E-GOVERNANCE IN PACIFIC ISLAND COUNTRIES

July 2001

Please answer this questionnaire by:

- **Ticking** the box beside the answer you see as most appropriate
- **Writing** your answer in the space provided

Please provide information on your **present situation**. Some questions may not be relevant to your organisation. Please GO to following questions.

If you have questions about the survey, you are welcome to telephone Laurence Zwimpfer on +64-4-472 9797 or email zwimpfer@xtra.co.nz

Please fax your completed questionnaire to: UNESCO Pacific Island ICT Survey
FAX: +64-4-472 9796 or +64-4-473 4367

… no later than Friday 20 July 2001

PART A: CONTACT DETAILS

As the person completing this questionnaire, please provide the following details:

1. Country information

Name of your country:…… ……Total population: ……..

2. Organisation

Name of your organisation?……

Your position in the organisation? ……..

Is your organisation in the Government or Private sector?

	Tick one
Government	☐1
Private	☐2

What sector is your organisation in?

	Tick one
Education	☐1
Business	☐2
Media	☐3
Culture	☐4
Telecommunications (incl. ISPs)	☐5

3. Contact details

Office telephone …… Office fax……

Office e-mail……..

PART B: ACCESS TO ICT EQUIPMENT AND SERVICES

4. Access to Internet services

Please tick the boxes that best describe the level and types of access by citizens in your country:

Types of access	None have access	Less than 25% citizens have access	Between 25% and 50% citizens have access	Between 50% and 75% citizens have access	Over 75% citizens have access	I do not know
a) In homes	☐1	☐2	☐3	☐4	☐5	☐6
b) At office or place of work	☐1	☐2	☐3	☐4	☐5	☐6
c) At school	☐1	☐2	☐3	☐4	☐5	☐6
d) In public libraries	☐1	☐2	☐3	☐4	☐5	☐6
e) At public access terminal or kiosk	☐1	☐2	☐3	☐4	☐5	☐6
f) At telecentre (shared workplace)	☐1	☐2	☐3	☐4	☐5	☐6
g) At Internet cafes	☐1	☐2	☐3	☐4	☐5	☐6
h) Other public access (please specify)……	☐1	☐2	☐3	☐4	☐5	☐6

5. Telecommunications connectivity

Which of the following telecommunication services does your organisation use?

	Never	Once a month or less	Approx. once a week	Approx. once a day	> once a day
a) Telephones……	☐1	☐2	☐3	☐4	☐5
b) Fax machines……	☐1	☐2	☐3	☐4	☐5
c) Internet e-mail……..	☐1	☐2	☐3	☐4	☐5
d) PACTOK e-mail…….	☐1	☐2	☐3	☐4	☐5
e) Internet World Wide Web (WWW)…….	☐1	☐2	☐3	☐4	☐5
f) Audioconferencing……..	☐1	☐2	☐3	☐4	☐5
g) Videoconferencing……..	☐1	☐2	☐3	☐4	☐5
h) V-SAT satellite terminals…….	☐1	☐2	☐3	☐4	☐5
i) PEACESAT …….	☐1	☐2	☐3	☐4	☐5
j) Low speed data connections (<64kbit/sec)….	☐1	☐2	☐3	☐4	☐5
k) High speed data connections (>64kbit/sec) …	☐1	☐2	☐3	☐4	☐5
l) Low earth orbit satellite telephones……..	☐1	☐2	☐3	☐4	☐5

7. Computers

For your own organisation, please state:

a) The total number of computers used directly in your production process …… ☐

b) The total number of computers used for administration…… ☐

c) The total number of computers connected to the Internet (email and/or WWW). ☐

d) The number of computers that are more than three years old…… ☐

e) The number of computers that are not in use because they are broken…… ☐

6. Internet presence

Does your organisation have its own home page on the World Wide Web?

Yes…… ☐1

No…… ☐2 GO TO QUESTION 8 ↓

7. World Wide Web home page

What is the URL (Uniform Resource Locator) for your home page?
(for example, http://www.unesco.org.nz/)

8. Staff usage of the Internet

What percentage of staff in your organisation use the Internet in their work?

Proportion of staff using Internet facility	e-mail	World Wide Web	ListServe*	Usenet**	Online ordering	Web publishing
a) None……..	☐1	☐ 7	☐13	☐19	☐25	☐31
b) 1-10%……..	☐2	☐ 8	☐14	☐20	☐26	☐32
c) 11-25%……..	☐3	☐ 9	☐15	☐21	☐27	☐33
d) 26-50%……..	☐4	☐10	☐16	☐22	☐28	☐34
e) 51-75%……..	☐5	☐11	☐17	☐23	☐29	☐35
f) 76- 100%……..	☐6	☐12	☐18	☐24	☐30	☐36

*ListServe: messages sent to a group of users with a common interest.

** Usenet: Also called 'newsgroups' – special interest groups, in which individuals can post messages and queries

9. Internet applications

Name the specific Internet facilities, i.e.web sites, listserves, Usenet groups, newsgroups etc. that your organisation uses

10. Staff education/training

How skilled are your staff when it comes to using computer and communication technologies?

What is your total number of staff?

How many of these staff are able to use computer and communication technologies confidently?

How many staff have attended a training programme relating to the use of computers and communications during the last 12 months?

What type of training?

How many staff are learning computer skills on the job?

11. Barriers

Which of the following factors are constraining the use of information and communication technologies <u>in your organisation</u>? Please indicate the extent to which you feel each factor is a barrier, ticking one box in each row.

Barriers	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a) Cost of equipment……	☐1	☐2	☐3	☐4	☐5
b) Availability of technical support……..	☐1	☐2	☐3	☐4	☐5
c) Reliable power supply……	☐1	☐2	☐3	☐4	☐5
d) Access to telephone network……	☐1	☐2	☐3	☐4	☐5
e) Internet access providers…..……	☐1	☐2	☐3	☐4	☐5
f) Telecommunications bandwidth……	☐1	☐2	☐3	☐4	☐5
g) Staff knowledge of equipment……	☐1	☐2	☐3	☐4	☐5
h) Staff understanding regarding the value of use……..	☐1	☐2	☐3	☐4	☐5
i) Availability of online resource material…..	☐1	☐2	☐3	☐4	☐5
j) Cost of telecommunications within country…….	☐1	☐2	☐3	☐4	☐5
k) Cost of international telecommunications	☐1	☐2	☐3	☐4	☐5
l) Other (please specify)……	☐1	☐2	☐3	☐4	☐5

12. Development plans

Please comment briefly on any plans your organisation has to use information and communication technologies during the next two years.

PART C: E-GOVERNANCE

E-governance is here defined as computer mediated (Internet, e-mail, CD-ROM…) information, services or dialogue between the Government and citizens. It is not necessary that any telecom link be involved. E.g. a regularly updated stand-alone information desk/ kiosk could fulfill an e-governance function.

13a. ICT equipment and services

*Thinking about **your country as a whole**, please estimate the **total amount** of information and communications technology (ICT) equipment/services. If you think it is impossible to estimate, please go to question 13b.*

Users	Number of fixed telephones	Number of mobile phones (cellphones)	Number of computers	Number of Internet-connected computers
Government				
Education				
Business				

Homes				
Total equipment/users				

13b. Contact details for the person who could provide this information are:

Name ……

Organisation ……..

Telephone ……..e-mail:……..

14. E-governance applications

What e-governance applications are provided by the Government in your country? (If you are working for an inter-government organisation, please give details of the services provided by your organisation.)

Application	e-mail	WWW	CD-ROM	Public access kiosks	Online discussion groups	Online ordering	None of these
List of Government /IGO agencies and officials	☐1	☐2	☐3	☐4	☐5	☐6	☐7
National statistics	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Regional statistics	☐1	☐2	☐3	☐4	☐5	☐6	☐7
National events	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Regional events	☐1	☐2	☐3	☐4	☐5	☐6	☐7
National archives	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Laws and regulations	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Counting of election votes	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Feedback by citizens	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Payment of bills	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Fault reporting	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Government forms	☐1	☐2	☐3	☐4	☐5	☐6	☐7
Other (please specify)	☐1	☐2	☐3	☐4	☐5	☐6	☐7

Please describe briefly any specific e-governance initiatives in your country:

15. Government initiatives

Do you know of any Government or inter-Government initiatives to promote the use of e-governance in government and public service in your country?

Yes, I know……. ☐1

No, I don't know…..……. ☐2 GO TO QUESTION 17 ⬇

List these initiatives and provide references or contacts where further information could be obtained:

Initiative	Sector (government, private sector, university, other, please specify)	Contact for further details

16. Government websites

Does the Government in your country have one or more official web sites (e.g. central government, different ministries or departments)? (If you are working for an IGO, please give the websites of your IGO.)

Yes…… ☐1

No, it does not have……. ☐2 GO TO QUESTION 17 ⬇

I don't know ☐3 GO TO QUESTION 17 ⬇

Organisation	Web address	Short description of content

17. ICT Policy

Does your Government / inter-government organisation have an ICT policy?

I do not know …… ☐1

No policy exists …….. ☐2

Yes, but still being discussed …… ☐3

Yes, and about to begin implementation . ☐4

*Yes, and partly implemented …… ☐5

*Yes, and fully implemented …… ☐6

Contact details for the person who could provide a copy of this policy:

Name ……..

Department ……..

Telephone ……e-mail ……..

18. Access to Government services

What efforts are being made within the Government in your country so that more people can have access to Government information and services through e-governance (e-mail, Internet, CD-ROM, etc)?

Activity	Tick those that apply	Details about the scope and timing of each initiative
Building up computerised databases	☐1	
Computerising/digitalising of Government documents/publications	☐2	
Installing public Internet access points	☐3	
Government subsidising of Internet service provision	☐4	
Government subsidising of computer purchases (including tax and customs exemptions)	☐5	
Training of public decision-makers and government officials re ICT computers and communications	☐6	
Reinforcing ICT training in schools, training institutes & universities	☐7	
Other (please specify) ……	☐8	

I do not know	☐9

19. Government access

Do you know which of the following Government departments have access to and use the following technologies?

Government/ inter-Government departments	Facsimile	Internet e-mail	Internet WWW	Smart cards
I do not have the information GO TO QUESTION 20 ↓				
Administrative Services	☐1	☐2	☐3	☐4
Agriculture	☐1	☐2	☐3	☐4
Archives	☐1	☐2	☐3	☐4
Courts/Justice	☐1	☐2	☐3	☐4
Culture and Heritage	☐1	☐2	☐3	☐4
Economic Development	☐1	☐2	☐3	☐4
Education	☐1	☐2	☐3	☐4
Electoral	☐1	☐2	☐3	☐4
Foreign Affairs	☐1	☐2	☐3	☐4
Health	☐1	☐2	☐3	☐4
Inland Revenue (taxation)	☐1	☐2	☐3	☐4
Internal Affairs	☐1	☐2	☐3	☐4
Labour	☐1	☐2	☐3	☐4
Libraries	☐1	☐2	☐3	☐4
Museums	☐1	☐2	☐3	☐4
Police	☐1	☐2	☐3	☐4
Transport	☐1	☐2	☐3	☐4
Social Security	☐1	☐2	☐3	☐4
Statistics	☐1	☐2	☐3	☐4
Women's Affairs	☐1	☐2	☐3	☐4
Youth	☐1	☐2	☐3	☐4

20. Legislation

Does your country regulate electronic data and/or digital media with any of the legislation listed below ?

Type of legislation	No legislation	Legislation under discussion	Legislation enacted
I do not know GO TO QUESTION 21 ↓			
Data protection	☐1	☐2	☐3
Right to access	☐1	☐2	☐3
Copyright	☐1	☐2	☐3
ICT-misuse, e.g. pornography	☐1	☐2	☐3

21. Other regulation

Do you know about any other national or regional instruments regulating electronic data or digital media? Please include details below:

22. Inhibitors

What factors are inhibiting the development of e-governance in your country?

Indicate the extent to which you feel each factor is a barrier, ticking one box in each row

Inhibiting factors	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a) High cost of Internet services…….……	☐1	☐2	☐3	☐4	☐5
b) Slow Internet connections ……..	☐1	☐2	☐3	☐4	☐5
c) Unreliable Internet connections ……..	☐1	☐2	☐3	☐4	☐5
d) Lack of digitised government information …….	☐1	☐2	☐3	☐4	☐5
e) Cost of computers and other equipment …….	☐1	☐2	☐3	☐4	☐5
f) Ownership and monopoly of telecom services …..	☐1	☐2	☐3	☐4	☐5
g) Availability of technical support …….	☐1	☐2	☐3	☐4	☐5
h) Availability of training opportunities for Government officials ……..….	☐1	☐2	☐3	☐4	☐5
i) Lack of political awareness of the opportunities …	☐1	☐2	☐3	☐4	☐5
j) Staff knowledge of equipment …….	☐1	☐2	☐3	☐4	☐5
k) Staff understanding regarding the value and use of Internet ……	☐1	☐2	☐3	☐4	☐5
l) Other (please specify)……	☐1	☐2	☐3	☐4	☐5

If you would like to comment further about factors that inhibit e-governance in your country, please use this space:

PART D: INTERNET INFRASTRUCTURE

23. Internet service providers

Do you know who provides Internet access services in your country? If yes, please include all ISPs, including those that are planning to offer services within the next two years, if you know of any. Otherwise go to question 25.

Name of ISP	Web address of ISP	Approx customer base	Date first service offered (or to be offered, if new ISP)

24. Internet user pricing

How much does it cost to use the Internet in your country? Indicate what typical costs would be for each of the following scenarios (charges from a large New Zealand ISP are included as an example)

Scenario	Example based on one New Zealand ISP	Typical charges (quote currency)	I don't know
Usage-based (based on time and/ or volume)	NZ$2.50 per hour		
Minimum monthly charges (with usage-based charges above a pre-set limit)	NZ$10 per month for 10 hours and then $2.50 per hour		
Unlimited usage	NZ$24.95 per month		
Other (please specify)			

25. Barriers

What constraints does your country face in introducing and/or developing internet services?

Tick the box that indicates how significant each barrier is for your country

Barriers	Not a barrier at all	Only a slight barrier	Neutral	Definitely a barrier	Major barrier
a) Cost of equipment……	☐1	☐2	☐3	☐4	☐5
b) Availability of technical support……..	☐1	☐2	☐3	☐4	☐5
c) Reliable power supply……..	☐1	☐2	☐3	☐4	☐5
d) Quality of Internet connection	☐1	☐2	☐3	☐4	☐5
e) Access to telephone network……	☐1	☐2	☐3	☐4	☐5
f) Internet service providers……..	☐1	☐2	☐3	☐4	☐5
g) People with technical skills……..	☐1	☐2	☐3	☐4	☐5
h) People with content skills……..	☐1	☐2	☐3	☐4	☐5
i) User understanding regarding the value of use……..	☐1	☐2	☐3	☐4	☐5
j) Availability of online resource material….	☐1	☐2	☐3	☐4	☐5
k) Cost of telecommunications within country……	☐1	☐2	☐3	☐4	☐5
l) Cost of international telecommunications.	☐1	☐2	☐3	☐4	☐5
m) Available international bandwidth…….	☐1	☐2	☐3	☐4	☐5
n) Domain name management……	☐1	☐2	☐3	☐4	☐5
o) Other (please specify)……	☐1	☐2	☐3	☐4	☐5

26. Planning – development plans

Please comment briefly on any plans or goals in your country that you are aware of, for the development of Internet services during the next two years.

PART E: TELECOMMUNICATIONS INFRASTRUCTURE

27. Regulatory environment

How are telecommunication services provided in your country?

✓ box
that applies

1☐ Government owned monopoly
2☐ Private sector monopoly
3☐ Competitive private sector organisations
4☐ Other, please specify ……..
5☐ I do not know

28. Telecommunication services

Do you know who are the providers of telecommunication services (telephones, data services) in your country? If you don't know, please go to question 29.

Name of Telecom company	Web address	Number of customers

PART F: BUDGETS

29. Government budget for ICT

Do you know if your Government has a centralised budget for Information and Communication Technology (ICT)?

Yes, it has…… ☐1
No, it has not …… ☐2 GO TO QUESTION 32 ⬇
I don't know ☐3 GO TO QUESTION 32 ⬇

30. ICT budget

Do you know what the overall Government expenditure on ICT is?

Yes…….. ☐1 US$……..……
Local currency…….

No……..… ☐2

31. ICT budget

Do you know which government body is in charge of the centralised ICT budget?……
……

Contact details of a person who could provide information on the Government's ICT budget:

Name:…….. Department ……

Fax…… E-mail ……

PART G: OTHER SURVEYS

We are aware that a number of international and national agencies as well as private sector organisations are interested in the development of telecommunications and Internet services in Pacific Island countries. UNESCO is committed to working with any agency interested in contributing to Pacific infrastructure.

We would therefore appreciate your assistance in identifying any recent surveys or initiatives relating to the development of ICT infrastructure in Pacific Island countries. We are also willing to share the results of this survey and information about other initiatives that we are aware of with any interested party.

32. Surveys

List all (regional or national) relevant surveys in the field of ICT infrastructure or application development, of which you are aware:

Survey	Responsible organisation

33. Development initiatives

List all major (regional or national) development projects or plans in the field of ICT infrastructure or application development of which you are aware:

Development initiative	Responsible organisation

34. Sharing Information

Is there any particular field of (national or regional) ICT infrastructure or application development, about which you would like further information:

Development initiative	National interest

35. Other comments

Add any additional comments here

Thank you very much for your help.

Please fax this completed questionnaire to:

UNESCO Pacific Island Internet Survey
FAX: +64-4-472 9796 or +64-4-473 4367

Or post to:

UNESCO Pacific Island Internet Survey
PO Box 12 033
Wellington
New Zealand

….. no later than Friday 20 July 2001