**UNOPS**
Office for Project Services

*e – Pacifika*
Funded by the Government of Japan

# *Facilitating National Information and Communication Technology Development Strategies*

**July 16, 17 and 18, 2002**

## Tonga National Workshop Report

This report documents the discussions and outcomes of the workshop held at the National Culture Centre, Nuku'Lofa, Tonga on July 16, 17 and 18, 2002. While explanatory notes have been included on the process used at the workshop and the objectives of information and communications strategy development, the findings of the workshop are presented as much as possible as they were at the workshop to avoid the authors misinterpreting the results.

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**Summary of Workshop Results**

The workshop resulted in the establishment of six Task Force Groups as follows:

Public Awareness Task Group
Legislation Task Group
Upgrade Qualifications and Skills Task Group
Government Infrastructure Task Group
Public Infrastructure Task Group
Telecentres Task Group

The group agreed to establish the ICT Coordinating Task Force with the following terms of reference: to coordinate the six task groups identified during this workshop; to coordinate with GCC, and; to establish a longer term mandate and name.

**The Objective of ICT Strategies**

Information and communications technology (ICT) strategies can achieve a number of specific objectives. Specifically:

- Strategies identify common goals and practical ways to achieve them. The underlying concept is very simple: the more people have the same goals and targets, the more likely it is that those goals and targets can be achieved.

- Often there are "pockets" of ICT activity but no real continuity. An ICT strategy can bring this continuity.

- An ICT strategy provides a framework for ensuring that as much as possible initiatives are target to a common goal (something to rally around).

- An ICT strategy can help sort out project priorities by identifying the common goals of most importance to the country.

- ICT strategies are also instrumental in building awareness among society.

- A national ICT strategy also tells outsiders, foreign investors and trading partners for instance, that the country has a common goal and a plan to achieve that goal.

The important characteristics of a successful national ICT strategy are:

- A champion: someone who is vocal and has authority and respectability within the community

- Strategies need to be revisited and revised. Typically ICT strategies start out general but become more refined and focused over time. Some country examples of ICT strategies include:

  India, software, back office functions,
  Ireland, software services,
  Singapore, use IT to become the business centre of Asia,
  Canada, connectivity,
  South Africa, using ICT as an enabler of social development

A strategy should be a living document that can be adapted as circumstance change.

- A group of multiple stakeholders to oversee implementation and revisions to the strategy.

**How the National ICT strategy fits with other strategies**

The Pacific regional ICT strategy, Pacific Islands Information and Communication Technologies Policy and Strategic Plan (PIIPS) provides a framework for regional development. There are regional initiatives, particularly on the policy side, that aim to achieve the objectives outlined in that strategy. There are regional projects (University of the South Pacific, Fiji School of Medicine, possible telecentres) that also adhere to the principles and objectives outlined in the regional strategy.

It is likely that National ICT strategies will be more focused and concentrate on what individual country strengths are. Some of the policies, principles and action items in the regional strategy will resonate more strongly with some countries than with others. In a sense, the National Strategies will be a further refinement of the regional strategy. In fact, one of the action items in the regional strategy is to develop national strategies.

Individual companies and government departments can again have specific ICT strategies that reflect their requirements. There is no conflict between these strategies rather they are drilling down into the individual requirements of organizations that are all part of the community/nation.

**The Future Search Process used in e-Pacifika National Workshops**

"Future Search" is a strategic planning methodology that has been developed over the past twenty years by a number of researchers from around the world. The process has been used in a variety of circumstances, in the private sector, governments and non-government organizations in developed and developing countries. This methodology was chosen for e-Pacifika because of its' emphasis on collaborative action planning. Workshops involving presentations and lectures are common in the Pacific region but often it is difficult to use these sessions to initiate activity without regular and ongoing follow-up and support. The scope of the e-Pacifika project does not allow for sustained support in each country so the workshops must both define the priority activities as well as get them started. Future Search is designed to do exactly that.

Future Search is a planning process that:

- Leads stakeholders to create and act upon a shared future vision for the nation,
- Enables all stakeholders to discover shared intentions and take responsibility for their own plans, and
- Helps people implement a shared vision that already exits.

It is not a substitute for rational planning procedures, rather it is an umbrella for building commitment. It is not a conflict resolution or problem solving event. It is a forum that allows people to work through the dynamic issues that stand in the way of implementing anything.

The workshop is an encounter with the whole - self, community and world. It sets up a situation that involves the whole person on many levels. It asks people to share the work, move around, make their wishes visible, live with uncertainty. In a future search people

experience a different version of “reality” than the one they are used to. They talk over issues they have not raised before with people they have never met. They dramatize ideal futures as if they have actually happened, thus anchoring them in first hand experience. They identify what they really want. It is common for people to voluntarily commit to actions made possible only because of the other people in the room. These workshops lead to: participants taking personal responsibility; fast implementation of action plans, and; lasting relationships across key sectors of the community.

**Workshop Participants**

The process starts with the planning of the event and ensuring that the “whole system” is in the same room. This means any stakeholder, or potential stakeholder, of the issue is invited. Guidelines suggest that the group should be no larger than 64. Too small a group (less than 24) may have too much “group think” and not enough diversity. Any larger than 64 it becomes unwieldy for the process to work effectively. The basic premise is that everyone has some knowledge of the issue and can provide meaningful input. It is premised on the understanding that what exists is not working and the people with the knowledge and the power to make changes are within the room.

Over seventy people from all sectors of society were invited to the workshop.

### Official Opening

The Acting Chief Secretary, Ministry of Finance, Paula Ma'u, opened the workshop reminding participants of the objectives of the workshop and that all participants were selected to attend to represent multiple interest in society.

### Workshop Session Results

Most of the effort in the workshop is done in small, self-managed groups, of no more than eight. The workshop strives to find "common ground". It does this by reviewing the past, the past that everyone shares. This past is reviewed from a personal, global, and national issue perspective. Once we have identified the past we acknowledge our common history and learn from past mistakes. Everyone is heard and all views are valid.

**The Tonga National History** recorded below is copied directly from the large sheets of paper on which participants were asked to write down their recollection of the history of information and communications technology in Tonga. Some people recorded dates, others notable events or technologies.

## Pre 1990

Communication consists primarily of letters by post, telephone and telegrams
1980s computers are stand-alone and DOS based
1983 computers introduced in the Ministry of Finance and Ministry of Education
1986 money is provided to the Department of Defense to establish Defense Services
1987 training centre established
Computer literacy is lacking
Intellectual property was not an issue

## 1990-96

Computers introduced
Live TV Introduced
Fax machines in use
Peacesat providing radio-satellite communications
1990 interoffice communication available via mainframe
1992 Community Development and Training inaugurated, increases training
1995 access to Internet and e-mail
1996 Computers are being used in the high schools
Royal School of Science is established
Digital exchanges are installed
Introduction of Kalianet by Cable and Wireless

## Since 1996

Video conferencing in use as are mobile telephones and DVDs
2001 mobile phone service is established
ANZ installs ATM
On-line study via the Internet is being used
Video conferencing is being used
Southern cross cable bypasses Tonga
Threatening e-mail has been known recently.
Viruses became a real problem
Communication takes place at a speed not understood years ago. It is provides increased safety. Increased tourism. It is not the solution but have affected almost everything we do.
Scope of ICT development: national development has been restricted to government and the private sector but not domestically.

### Present Trends and the "Mind Map"

Once the group reviewed the past we then look at the present. We mutually discover the trends that are now impacting the issue. In this case what trends are affecting the achievement of further ICT development in Tonga. This tends to be a messy "mind map" that the workshop then analyzes and attempts to make sense of what has been stated.

The trends identified on the "mind map" included the following (in no order of priority). The list is long because every comment was put on the "mind map". Participants were then given eight "dots" to stick on the trends that they feel were most important. This process led to the establishment of priority trends by votes. The top trends are in **bold** with the number of votes for the top trends in brackets.

| **Trend** | **Implications, impacts and or examples** |
|---|---|
| **Financing** | **Availability of funding for ICT projects (14)** |
| **Infrastructure** | **Capacity, extension of services, Internet bottleneck (21)** |
| **Affordability** | **Tariffs and pricing, hardware and services need to be cheaper (17)** |
| Technology | New technology such as Voice Over Internet Protocol (VOIP) |
| Efficiency | Time savings |
| **Connectivity** | **Access to e-mail, Internet brings both good and bad, increased usage, increased cost (18)** |
| Red tape | Can be decreased in applying for permits |
| **Limited access** | **Only a few can afford access (10)** |
| Expectation | Difficult to deliver on expectations (such as increasing income) |
| Better coordination | Planning |
| Human interaction | Cultural and social impacts |
| Increased electrical coverage | Allows extension of service |
| **Education** | **ICT skills development, demand for ICT in high schools, on-line learning will be cheaper (37)** |
| Security | Increased system requirements, viruses, hackers |
| **Legislation** | **New laws to cover electronic issues, international compliance, need for national policy (24)** |
| **Human resource development** | **(15)** |
| **Support** | **Technical (17)** |
| Adapting to local conditions | Legislation, policy and accessibility must take into account local conditions |
| Employment | Potential to increase employment |
| System integration | More integration is need |
| Privacy | |
| Telemedicine/health | Access to medical information and specialists |
| Lack of competition | Open market |

## Analysis of the Mindmap

The stakeholder groups were asked to review the mindmap and make sense of the trends and implications then present their results back to the whole group.

*Education Group*
The major issue is education and the infrastructure is the impediment. Access is slow, reliability is a significant problem and service is expensive. In high schools the students get discouraged with service outages and the slowness of access. Electrical supply also interrupts services. In an educational environment they need reliable service to access distance education and make use of technology. To address this problem they need a higher commitment from government to address these issues and more risk takers in the service provision side. If the infrastructure can be improved then other opportunities will also arise (such as e-commerce).

*Major ICT Users Group*
Need legislation first so that governments can finance their own ICT strategies and acquisitions. Government departments need to help each other. Security issues can be alleviated by legislation. Legislation only requires small expenditures but can have significant impacts on other areas.

*Civil Society (Tourism and Journalists)*
Financing, where the money comes from, is going to significantly influence the type of information that comes into the country and how it is going to be controlled. Education and skills development is not an incentive right now but needs to be addressed to move forward.

*Infrastructure Group*
Infrastructure is affected by a number of factors before it can be upgraded to a level that is expected: need legislation in place; availability of resources to upgrade; accessibility is affected by affordability; human resources so that people get technical training; reliability of power affects the availability of service; new technology allows voice, data and pictures over copper but need better infrastructure to support these service; money is the biggest issue in infrastructure development but that if the infrastructure is good then other applications will develop (education, health, telemedicine allowing help from overseas as needed)

*Private Sector Group*
Infrastructure, security and privacy are the main issues. Infrastructure has been addressed by the other groups. Better infrastructure = better education = more industry. There is not enough competition because there are not enough educated people. The government should financially support training for the private sector. Private sector is attending the government workshop for the first time. Human resources are important and communication in identifying common areas of interest is needed.

*Government Users Group*
Basic foundation needed is infrastructure. They narrowed the issues down to: technical support for making the work environment efficient; education and access to research grants; financing must be available to make any movement or changes to the use of ICT (electronic money transfer is an important component); affordability is limiting access.

*Government IT Group*
The group produced a diagram of the ICT house. Legislation/policy is the roof of the house: it provides protection. The base of the house is the infrastructure and is needed to have a stable house. The structure is Internet access, system integration and human resource development/education. All of the parts of the house are related to the other parts. Legislation is needed for security. Education and HR policy is needed to improve the education structure. Infrastructure affects the ability to provide education

**Satisfactions and Regrets**

To come to terms with events of the past to go on to the future, the participants are asked to review "satisfactions", things or events of which they are proud and "regrets", things or events of which they are sorry.

Satisfactions: increasing availability of ICT services; efforts to make Internet more accessible and affordable (special rates for schools); the establishment of Government Computer Committee; 1998 Government Strategic Plan for government which will be reviewed again in the near future; regional ICT strategy; communications options are increasing (mobile, Internet); education is available even though its not enough; there are some trained professionals but not enough; communications (can make request to government via e-mail, and better communication with the islands, ANZ has brought the automatic teller machine); existence of PCs but they are too expensive; younger people have a real interest in ICT, and; people with ICT skills do their jobs better.

Regrets: not having an national ICT strategy; lack of ICT professionals; lack of ICT training and skills development; lack of financing; mobile phones that stay with you and interrupt you all of the time; laziness affects the development of ICT strategies and awareness of ICT; lack of privacy and confidentiality, and; inability to maintain underground facilities.

**Future Scenarios**

With a foundation of where we have come from and where we are now, we then dream and define where we want to go. The various groups create a future scenario that they consider is feasible, desirable, and motivating.

A summary of the presentations by the groups follows.

First Presentation: Diagram shows links to home, hospitals, education, banks, shopping via satellite. The environment is clean and healthy. Available technology is cheap. There is a strong leader shown as an angel in the diagram. Major barriers: leadership (need a leader), money, a management body to set up the strategy, and the ability for people to come here and generate activity through communications.

Second Presentation: On-line shopping and banking, sea rescue and all boats equipped with GPS. Today we have a generation gap and it will get wider. Students who go overseas can communicate by e-mail with their parents. Video-conferencing overseas is available to people within Tonga for family events. Legislation and policies need to be reviewed to take into consideration new circumstances. Need to educate people on the new policies and let them know why the policies are good for them.

Third Presentation: Infrastructure: affordable Internet, centralized national databases, enforcement of legislation and policies, the government is leading the development of ICT, there is a new department responsible for ICT, there are highly qualified technicians, open learning is provided via Internet for all outer islands, ICT provides investment and higher education. Tonga needs to be ahead of ICT.

Fourth Presentation: Government plan is in place. ICT access is available in every home and available to fishermen, people can work at home, have high speed Internet access (fibre optics, perhaps) including in the outer islands and to family overseas. Cheaper education and expanded educational facilities throughout the country. Need to keep balance in people lives (sports, recreation and community events) . There are more good jobs, which in turns reduces the difference between the poor and the rich. Tonga competes effectively in the global market in ICT. Less pollution because people are doing communications from home via Internet. There is affordable access to communications through community centres as necessary. There is access to high quality health care and specialists. There is access to Voice over Internet Protocol (VOIP) to provide video and voice.

Fifth Presentation: The diagram of the past shows grass growing high, people are not happy. Today the picture is brighter and there is a chance to smell the roses. The year 2020 has now borne fruit and the diagram shows a tree laden with fruit. Lack of funds (from UNOPS/UNDP), expensive hardware and government intervention has hindered development. Need well-defined policy and legislation, all Tongans are ICT literate, better education is provided in Tonga rather than overseas. Curriculum is shared with schools throughout the country via Internet.

Sixth Presentation: Technology makes life easier but does not interfere with the social qualities of Tonga. Local production of software and hardware now takes place. Education and educational resources are available throughout the islands. Security would have to be addressed. Tongans have been sent overseas to learn and come back to teach other Tongans. People can work from home. The barriers are: money, monopoly on communications, lack of risk takers and lack of skilled labour. To overcome these barriers new legislation was introduced in 2002, competition was introduced, new business encouraged foreign investment, there is adequate technical support and there is an educational institute devoted to developing the technology and applications for Tonga.

Seventh Presentation: In Tonga in 2020 we develop software for Microsoft and Coca Cola. We have a program for developing human resources. Legislation was introduced in 2002. Have access to both fibre optics and satellite.

## Common Ground

After considering the past, present, and future, the workshop then proceeds to find the "common ground". This is where everyone at the workshop finds agreement on basic concepts and identifies projects to achieve and/or support them. The "common ground" should be principles and values that relate to ICT development, and: can stand the "test of time" (they will be understood tomorrow or next year).

*We understand the need for good governance in an ICT context. One of the tools of good governance is appropriate legislation, policy and coordination. Examples would be ensuring fair competition (level playing field) and universal accessibility.*

*Desirable ICT characteristics include;*

*Affordable*
*Accessible (inter island/home/ schools/etc.)*
*Secure*
*Convenient*
Relevant (on-line access)
*Reliable (maintenance/electrical)*

This common ground can serve as a "filter" for future ICT projects. That is, if a project is being considered it should promote one or more of these principles and values.

## Projects and Big Ideas

The projects and ideas that were identified by participants again formed a long list because all ideas were recorded whether they overlapped with others or not. It was from this long-list that participants identified the projects that should be pursued and that they wanted to work on.

Once there is agreement on the common ground, there are volunteers willing and committed to carry out specific projects. The last tasks of the workshop are to volunteer for those tasks that excite the individual and determine the structure to go forward with implementation. The listing of common ground and the commitment to action are the real outcomes of the workshop.

Some of the initiatives that could promote the values were identified by the groups as follows:

- Initiate a Task Force to carry on the development of the work from the past few days (ensure representation from all stakeholders) with a mandate to begin work on draft legislation and policy.
- Public awareness through all mediums (radio, TV, newspapers). Promote what is already being done as well as new
- Conduct additional workshops
- Create discussion group to deal with ICT issues.
- Establish ICT telecentres for small communities to promote awareness
- Use the Communications Office of the PMO to help distribute information and connect people with interest in ICT.
- Draft new legislation (Computer Committee) by September 2002

- Review existing composition of Computer Committee with a view to increasing representation from stakeholders by August 2002.
- Rename the Computer Committee to the National ICT Committee by August 2002.
- Extending infrastructure and services throughout the islands by January 2004.
- Promote ICT and cooperation
- Establish links between all government departments by December 2002.
- Further develop curriculum to advance it to post-secondary degree program.

**Outcomes: Selected Tasks/Projects**

(Terms of Reference, Action Plans, Develop Milestones)

**Public Awareness Task Group**

Membership: Christine Oknozki, Koini Lätü, Lupe Mätoto, Talanoa Langi, Va‘inga Tone, Vikilani Teumohenga, ‘Epifania Siu, Mele Käpeta, P. Tapueluelu, ‘Esitia Tupou, Tapu Tonga, Sam Taufa, Saia Vaipuna, Sam. Mailau, ‘Ana Tapueluelu, Solomone Savelio.

1. Produce articles and information on a regular basis. Get articles or announcements into newspapers. Tonga Chronicle will accept articles. Group members (Talanoa, Ana, Esitia and Sam) have volunteered to write articles.
2. TV programming and radio. Use “lobster man” as the model. Koini, Lupe and Sam volunteered to help produce.
3. Get sponsors. Talanoa has volunteered to do this.
4. Public displays, bulletin boards, flyers. Christine, Koini, Tapu and Pele will coordinate this.
5. Hold competitions during computer week in schools. Videotape drama’s and put them on TV. Lupe will coordinate this.
6. Sam will be the contact for other task groups if they have announcements they wish to have made public.

**Legislation Task Group**

Membership: Havea Fonua, Va‘inga Tone, Koini Lätü, Talanoa Langi, Siaosi Sovaleni, Hon. Luani, Vikilani Teumohenga, Sam Mailau, Kalo Faleafä, Malakai Vakasiuola, Tevita Peau Pifeleti.

Objective: management of information and communications technology. The group will assist in evaluation and provide advice on changes needed.

The legislation is for the protection of players and consumers (stakeholders). For example, taxation of ICT products, flexible

Action items/steps: Assess relevant current legislation including the Trade Act, Communication Act, Telecom Act, Radio Communication Act, TCC Act, Education Act. and determine if they need new or modified legislation. Some of the legislation will only have specific sections that need to be modified to adopt to ICT needs.

**Upgrade Qualifications and Skills Task Group**

Membership: Kalavite Taufa, Salote Fukofuka, Hiroko Oka Tu‘umoto‘oa, Si‘atukimoana, Mele‘ana Puloka, Kalo Faleafä, Drew Havea, Siale A. Puloka, Siaosi Sovaleni, ‘Ana Veikoso, Koini Lätü, Talanoa Langi, Piveni Piukala - Other members will be invited to join including ICT providers and training institutions.

Purpose of the Task Group:

How to utilize ICT for the further development of education.
Provide ICT training opportunities for the public.
Standardize ICT qualifications.

How often do we meet: Twice annually. Set tasks will be carried out by members to achieve set goals. Chairmanship: Director of Education or representative (Siale Puloka), Secretary: Drew Havea.

Action Items:

- Identify ICT providers.
- Request that the Ministry of Education facilitate the accreditation of certification/diploma courses.
- Identify on-line packages available and make them known to the public.
- Establish links with ICT providers in order to secure affordable services and increase accessibility.

Milestones:

- National ICT qualifications
- Increase ICT trainers, 100/year by 2003
- By 2005 online courses will be made available/accessible to all irrespective of geographical location.

**Government Infrastructure Task Group**

Membership: Koini Lätü, Malakai Vakasiuola, Siaosi Sovaleni, Piveni Piukala, Havea Fonua, Fotu Fisi‘iahi, Paula Pälelei, Sione Takapautolo, ‘Atelea Kautoke, Viliami Fotu, Semisi Lutui, Kalo Faleafä, Siosaia Tulua, Talanoa Langi, Saia Vaipuna, Va‘inga, Solomone Savelio, ‘Epifania Siu, P. Tapueluelu, Mele Kapeta, Lupe Mätoto, Saia Fonua

Action items:

1. Examine legislation related to the infrastructure between departments by the end of July.
2. Examine technical options for linking departments/ministries. Reports on: fixed wireless; TCC leased lines, and; others.
3. Check private enterprises and Department of Communications roles. Letter to Chamber of Commerce, Department of Communications views.
4. Promote awareness within government through presentations and circulars.

**Public Infrastructure Task Group**

Membership: Koini Lätü, Malakai Vakasiuola, Siaosi Sovaleni, Piveni Piukala, Havea Fonua, Fotu Fisi‘iahi, Paula Pälelei, Sione Takapautolo, ‘Atelea Kautoke, Viliami Fotu, Semisi Lutui,

Kalo Faleafä, Siosaia Tulua, Talanoa Langi, Saia Vaipuna, Va‘inga, Solomone Savelio, ‘Epifania Siu, P. Tapueluelu, Mele Kapeta, Lupe Mätoto, Saia Fonua

1. Examine international link. (Saia, Siaosi, Sione)
2. Examine private sector participation. (Taholo, Saia, Fotu)
3. Consider standardization. (Saia, Siaosi, Sione)
4. Re-examine rural/remote area access. (Sione, Saia Fonua, Havili)
5. Report on infrastructure development from TCC, Shoreline Tonfon (Siaosi)

**Telecentres Task Group**

Membership: Saia Vaipuna, Siosaia H. Fonua, Siaosi Sovaleni, Drew Havea, Fotu Fisi‘iahi, Sione Ketu‘u, Sione Takapautolo, Koini Lätü, Ricky Bing, Havili Movete, Malino Hafoka.

1. Review existing community centres where computers already exist (Peace Corps program) in Kolovai; Nukunuku; Afa; Neiafu; Taufa’ahau (Pangai Hp), and; Niuatoputapu
2. Ask TCC and Peace Corps Program to extend infrastructure to these. TCC could provide connectivity, Peace Corps could provide housing and equipment. Timeline: Dec. 2002.
3. Coordinate stakeholders and identify resources to help grassroots level. Identify financing.
4. Coordinate with the Labour and Commerce Centres for job seekers (Employment Service Centres)

**ICT Coordination Task Force**

The Government Computer Committee is a critical partner in the process yet the group wants to improve participation in the process. Although the GCC can invite others to present on specific subjects to them this was not viewed by all of the group as adequate. In addition, some initiatives do not require the involvement of government and the groups wanted the flexibility to work on their own. They believe that this will help maintain the high level of participation and energy created over the past three days. It will also help to ensure the involvement of all sectors in the development of ICT in Tonga, which has not necessarily been the case with the GCC.

The group agreed to establish the ICT Coordinating Task Force with the following terms of reference: to coordinate the six task groups identified during this workshop; to coordinate with GCC, and; to establish a longer term mandate and name.

The representatives from each group that will form the to form a National Task Force are:
Public Awareness – Lupe Tonga and Koini Latu as alternate;
Legislation – Malachi Vakasiuola and Hon. Luani as alternate;
Telecentres – Sione Ketu’u;
Upgrading of Qualifications and Skills – Salote Fukofuka, with either Mele’ana Puloka or Piveni Piukala as alternate; Government Infrastructure – Havea Fonua;
Public Infrastructure – Siu Moala, Vikiani Teumoehenga