THE IMPACT OF ICT ON RURAL DEVELOPMENT IN SOLOMON ISLANDS: THE PFNET CASE

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Randall is a contracted member of UN Disaster Assessment Coordination System since 1995, member of the Pacific Islands Internet Society and the Solomon Islands Information Communication Technology Working Group.

ABBREVIATIONS AND ACROYMNS

PFnet	People First Network
HF	High Frequency or Short Wave radio, operating in 3-22 MHz range
ICT	Information and Communications Technologies
JICA	Japan International Cooperation Agency
USP	the University of the South Pacific
UNDP	United Nations Development Programme
RDVA	Rural Development Volunteers Association
RRRT	Regional Rights Resource Team
NERRDP	the National Economic Recovery, Reform and Development Plan
NGO	Non-governmental organization
NZODA	New Zealand Overseas Development Assistance
AusAID	Australian Agency for International Development
EU	European Union
SIDAPP	Solomon Islands Development Administration and Participatory Planning Program

1.0 EXECUTIVE SUMMARY

This research examines the impact of Internet on lives of grass-roots people in Solomon Islands using PFnet as a case study. There were two broad aims of the project. The first was to investigate issues related to differential access and utilisation of Internet services. Within this broad aim, the researchers examined the main issues affecting community uptake and appropriation of Internet services, reasons for low usage by women, and reasons for differences in utilisation amongst the five email stations. The second broad aim was to find out the impact of the Internet services on sustainable rural development in the remote and rural Solomon Islands. Within this broad aim, the researchers examined the issues of whether the Internet has improved the lives of rural people, which groups in the communities have benefited most, whether it has brought about environmental awareness and sustainable resource management, whether it has improved the well-being (including health and security) of people in the PFnet project communities and whether it has in any way contributed towards peace-building and reconciliation after the ethnic conflict.

This report provides a summary of the project, the research methods used, the findings and the recommendations. The researchers used both qualitative and quantitative research methods to collect data. The qualitative research methods were focus group interviews and semi-structured interviews with key respondents, and the quantitative research methods were surveys via structured questionnaires. Five different sets of questionnaires were designed and used for the research. A total sample size of 538 respondents was interviewed from five PFnet stations. The sample included members from all relevant groups in the community, including women, young people, and the elderly and key respondents such as community leaders. The existing data collected by the PFnet Headquarters in Honiara was also utilised.

The research findings on the utilisation of PFnet services are as follows:

1. Population density, distribution, and accessibility of the station affect the differential utilisation of Internet services provided by PFnet. The results show that most of the users live within a few kilometres of the email station. Around 32% of the users live less than one kilometre from their respective PFnet stations.

2. The location of the email station within a building in the village, and the type of ownership (whether it is privately or community-owned) affect the utilisation.

3. There is an apparent correlation between the degree of dispersion of people within and outside Solomon Islands and the utilisation of the services. For example, Hutuna has a high proportion of overseas email communication because there are a lot of Hutuna people living overseas.

4. The cost of services has a slight impact on utilisation. A very high proportion (97%) of the ‘user group’ indicated that the cost of sending and receiving email was ‘reasonable’, ‘cheap’ or ‘very cheap’. However, 19% of the ‘non-user group’ indicated that the cost of PFnet services was high and the reason why they were not using the services.

5. Awareness of services has an impact on utilisation. The main sources of awareness were friends, family, and wider kin, as 63% knew about the PFnet from these sources.

6. The main purposes of using PFnet are: email services (99%), to get news (29%) and typing services (27%).

7. Around a third (31%) of PFnet users are women. Hutuna has the high percentage of women users (with 42%) followed by Pirupiru with 35% and Sasamungga with 31%. The lowest participation of women was in Silolo (19%) and Sigana (16%).

8. With regard to age, the two biggest groups by age were the 40-44 years group (20% of users), followed by the 35-39 years group (18% of users).

The research findings on the impact of PFnet on sustainable rural development in the remote and rural Solomon Islands include the following:

Economic

1. Results show that PFnet has helped farmers because, through PFnet email and news services, rural farmers are able to contact relevant agricultural authorities and NGOs to get information and advice on farming matters. For example, farmers are able to communicate with the *Kastom Gaden Association*, an NGO which gives advice to farmers.

2. The survey results show that business activity was the third major reason for respondents using PFnet services. Rural businesspeople use PFnet services to develop business customer contacts in Honiara and other towns, find out the price of goods in Honiara, supply stock, order cargo (e.g. for rural shops), receive agriculture information, find out shipping schedules, liaise with banks for financial transactions, and liaise with government offices in Honiara.

Social

1. The survey data show that education was the second major reason (36%) for using PFnet services. The user-log data show similar findings.

2. Results show that around 6% of the people in the survey use PFnet's services for health-related issues. The main users are doctors, nurses, and health workers from different parts of Solomon Islands who use emails to communicate with each other regarding medical results of rural patients, diagnoses, advice on treatment, medicines to be given to patients, and ordering of medicines.

3. Respondents reported that the PFnet news service has contributed towards security, peace-building and reconciliation by providing objective and accurate information on the facts during and after the ethnic conflict in Solomon Islands. PFnet assisted in reducing the spread of false rumours and misinformation.

Based on the research findings, the researchers make the following recommendations for stakeholders. Most of the recommendations are for specific action to be taken by PFnet management. These recommendations were discussed with the PFnet

Management team and, since three of the team also took part in the research, they understand the major problems and agree with the following recommendations:

1. PFnet Management should hold extensive consultations and meetings with the stakeholders, including the village leaders and elders, in the surrounding villages before setting up an email station in the area.

2. PFnet Management needs to monitor the functioning and performance of PFnet station committees.

3. PFnet Management needs to train PFnet station committee members and operators on their functions and responsibilities.

4. PFnet Management and operators need to work closely together to iron out problems and to better deliver services to the people.

5. PFnet services should be promoted for business activities to enable users to earn a livelihood. This can be done by raising awareness and training people in new ways of accessing information and opportunities. It is expected that business applications will drive up the utilisation even further.

6. The PFnet project could be further expanded both within Solomon Islands and to other South Pacific Island countries.

2.0 INTRODUCTION

This research was commissioned by JICA to examine the impact of Internet on the lives of grass-roots people in Solomon Islands. The PFnet project was established in 2001 and is managed by the Rural Development Volunteer Association (RDVA), a registered NGO of Solomon Islands PFnet website (2005). In the South Pacific Region, only Solomon Islands have a PFnet scheme; it was set up on a trial basis so that, if successful, it could be replicated in other Pacific Island countries. Since its establishment, this is the first study of PFnet effectiveness.

Section 1 of the report provides background information on PFnet. Section 2 outlines the aims of the research. Section 3 discusses the research methods. Section 4 presents the research findings on the factors affecting the utilization of PFnet services. Section 5 presents the research findings on the impact of PFnet on the livelihoods of people in PFnet project communities. Section 6 examines some of the problems in the operation of PFnet services. Section 7 lists some benefits of the research and Section 8 lists the recommendations.

3.0 BACKGROUND INFORMATION ON PFNET

3.1 Origins and funding of PFnet

The PFnet project was established as a UNDP-UNOPS project and initially was partly funded by UNDP. Stork (2002) over the years, major funding has come from Japan, NZODA, Britain, the Republic of China, AusAID and the EU. Currently it is self-sufficient.

3.2 Purpose of PFnet

The PFnet project was set up to improve information flows for rural people and for peace-keeping among remote and largely subsistence communities throughout the Solomon Islands archipelago, which spreads over more than one million square kilometres in the South Pacific, with a population of less than half a million. The project was designed, with the limitations of resources, infrastructure, technology appropriateness and sustainability in mind Leeming (2003a).

3.3 Structure of PFnet

The structure of PFnet consists of three partners: the PFnet Management (based in Honiara), PFnet committees (based in each email station in rural areas) and two operators at each station. The PFnet Management based at the Internet Café in Honiara comprises two full-time paid staff (a manager and a consultant).

3.4 Ownership

PFnet is a community-owned project operated by the Rural Development Volunteer Association (RDVA), a registered NGO which has close links to the Ministry of Rural Development of Solomon Islands. A model of community leadership and operation was formulated and piloted to ensure grassroots ownership, community empowerment, and the security of facilities and equipment. The location of the email stations was decided on in consultation with community and PFnet Management working with the station committees Stork (2004a).

The model is founded on community ownership, management and participation and operates as follows:

> A three-way agreement is signed between the committee, operators and PFnet, defining the roles of each party (including technical support, maintenance, security, and ownership), as well as the sharing of revenue.
>
> The committees choose the location of facilities, hire the station operators and are responsible for the effective operation of the PFnet stations.
>
> Awareness of an email station project is raised among the community and a village management committee is established in accordance with the cultural context.[1]

[1] This context, in Solomon Islands, is often characterised by little social-economic differentiation but religious and kinship *(wontok)* divisions. The selection of the committee necessarily needs to reflect these

Champions and local experts such as village chiefs, graduates and professionals are identified among potential users with email awareness and needs, and are expected to initiate other members of the community into the use of email services, and provide locally available technical support. Their support is rewarded with a free email account.

3.5 Operation of PFnet services

Each email station is housed in a small room, usually in a provincial health clinic, community school, or some other accessible and secure public facility. The technical equipment consists of a laptop computer linked via a modem to a High Frequency (HF) short-wave radio which transmits the email message to the main radio receiver at the Internet Café in Honiara where the operators send the emails to the relevant addresses. The system stores and forwards emails several times daily between rural stations and the Internet Café in Honiara Stork, et al (2003).

The way an email message is sent and received at each email station operates as follows: a customer brings in a handwritten note on a piece of paper (usually in Pidgin) or dictates it to the station operator, who types the message and then sends it. Since the operators perform the functions on behalf of the customers, literacy in English does not impact on the usage of PFnet services. The reason PFnet Management does not allow customers to type their own messages is that they do not want many people handling the laptop due to maintenance costs. Only a few customers who are literate in English and can afford a private email account are allowed to send and receive their own emails Stork (2004b).

3.6 Types of Services Provided by PFnet

PFnet provides the following services: sending and receiving emails, sending local news to PFnet Headquarters in Honiara which then edits and distributes it to newspapers and national radio stations, receiving local and overseas news (in a summarised form by PFnet Café), typing (done by operators) and printing services. The Internet Café allows people to exchange emails with stations across Solomon Islands and overseas, and browse the Internet. Only the Internet Café in Honiara has the Internet service due to limitations of technology and the absence of telephone connections Leeming (2003b).

3.7 Cost of Using PFnet Services

The following are the cost of using PFnet services:

Sending an email message – $S2.00 (US 0.26)

Receiving an email message – Free. In most stations, receiving email messages is free because PFnet Management wants to encourage people to send and receive messages. In other words, it is to prevent people being discouraged from sending emails. Some stations (especially the well established ones) charge $S0.50 (US 0.7) for the printing cost and paper. This decision is not that of PFnet Management in Honiara but the station committee of individual stations.

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divisions, understanding various interests within the community and ensuring a fair representation of all parties.

Sending news items via email – $S3.00 ($US 0.39)

Typing service per page – $S5.00 ($US 0.65)

Printing per page – $S0.50 ($US 0.07)

4.0 AIMS OF THE RESEARCH

This project was designed with two broad aims and objectives within each aim. The first main aim was to find out the extent of access and utilization of PFnet services in Solomon Islands. Within this broad aim the following research questions were asked:

What are the main issues affecting community uptake and appropriation of services?

Why are only 20-25% of the users of the email stations women? What recommendations can be made to increase women's participation?

What are the principal factors underlying differences in utilization amongst the email stations?

What are the information needs of differing groups (women, the elderly, farmers, students, entrepreneurs and business people, etc.) using the email stations?

Why do certain email stations generate more revenue than others?

What are the significant descriptors (and primary interactions) of an email station and a user community?

What is the optimum spread of the network and where can additional sites be located to best effect?

The second broad aim was to find out the impact of PFnet services on the lives of the grass-roots people. Within this broad aim the following research questions were asked:

Has the PFnet project improved the livelihoods of people in PFnet project communities? If so how?

Which groups in these communities have benefited most? Which groups have benefited the least?

Has the PFnet project in PFnet project communities contributed to:

- environmental awareness and sustainable resource management;
- improved gender equality in PFnet project communities;
- improved well-being (including health and security) for people in PFnet project communities; and

- Peace-building and reconciliation.

In what ways have any improvements to livelihoods, environmental awareness, gender equality and well-being been sustained?

Has the PFnet project been able to increase awareness of the use of ICT as enablers for development at policy- and decision-making levels in Solomon Islands? If so how? Has the PFnet project stimulated activity at the policy level in Solomon Islands?

5.0 RESEARCH METHODS

Three research methods were used to conduct this study: survey interviews, focus group interviews and an analysis of existing data. Details are given below.

5.1 Survey interviews

Face-to-face interviews with different sets of stakeholders were conducted. The main reasons for selecting the interview method were its ability to provide in-depth understanding of all the issues involved and an opportunity to derive a great deal of 'rich data'. The survey was conducted in order to gather primary base-line data form a wide range of respondents in Solomon Islands. (Details of these surveys are explained in the sampling section.) In addition to the survey interviews, interviews with key informants were conducted. The key informants included: national and provincial government officials, rural development officers, policy-makers, and village leaders.

5.2 Focus group interviews

A total of twenty focus group interviews were conducted in the five PFnet stations (four in each station). The reason for selecting focus group interviews was to unravel the complexities of human arrangements in order to get a comprehensive understanding of the complex issues that are operating in a village or society and, in this way, help to place the situation under study in a broader context.

5.3 Compiling and analysis of existing quantitative data

User-log data (January – February 2004)
Data were gathered on 'users' of PFnet services in each of the five stations during the same eight weeks that survey and focus group interviews were conducted. The user logs captured the number of unique users of each of the five rural email stations studied. The operators of each station maintain a user log with entries for the usage tally of unique users, with their gender and home village. From this, the percentage of users in each village was calculated. The village populations were obtained or estimated from the 1999 census records and census data reported by the Solomon Islands Development Administration and Participatory Planning Program (SIDAPP).

User-log data from PFnet monitoring system (January 2003 – March 2004)
PFnet's existing Monitoring System Data kept at each station were used. The monitoring data were taken from the reports from the five stations in the study over a period of 15 months (January 2003 – March 2004). The monitoring system captured user profiles and reasons for using the facilities. Every day, all rural email stations record in a sales log all PFnet service transactions. In particular, emails sent by customers are logged with the user profile (age group, gender, and education level) and email details (destination, main purpose). This is non-specific user information, as the name and identity are not logged. At the end of each day, the operator enters the day's data into a database application, which outputs the information as a text file, which is then emailed to the PFnet Headquarters in Honiara. The webmaster in Honiara puts them into a central database. Thus, daily usage data are accurately and efficiently collected without wastage of bandwidth. The data on emails sent out (not in-coming) are of sufficient sample size to be a significant measure of the user profiles and usage patterns. This data are complementary to the user log information above, which is recorded to capture the number and profile of unique users, and give an idea of the distribution of users for each station. Although the day's takings are recorded in the daily reports, the operators are also asked to produce a monthly summary report manually.

Data from socio-economic profile of each station
A socio-economic profile of each station was compiled during the research. They were compiled before the fieldwork (interviews) in order to give researchers some background information about each station, and gaps in these profiles were filled during the actual fieldwork stage.

5.4 Sample

Sample of PFnet stations researched
Five PFnet stations out of a total of eleven were selected for this study[2] (see Appendix 1 for maps of PFnet stations). Of the eleven stations, six are commercially oriented stations because they were set up for commercial purposes, mainly fishing businesses. The remaining five stations are community oriented rather than commercially-oriented and, since the main aim of the research was to examine the impact of PFnet on the lives of grass-roots people, these five stations were selected. The five PFnet stations that were chosen were: Hutuna station, Pirupiru station, Sasamungga station, Sigana station, and Silolo station. Of the five stations selected, three were 'very remote' and two were 'remote'. Hence there are no major limitations that affected generalization of the results but, of course, from this study report no generalizations can be made about the commercially-oriented stations.

Sample size
A sample of 538 respondents was interviewed from the five stations. The sample involved members from all relevant groups in the community: women, young people, and the elderly and key respondents such as community leaders.

[2] There were only eleven stations when the research was conducted. At present there are a total of fourteen stations.

Table 1: Sample Size for Survey

Types of respondents	Number
People who currently use or ever used PFnet services (Q1)	251
People who never used PFnet services (Q2)	261
Committee members of PFnet stations (Q5)	21
Operators at PFnet stations (Q3)	5
Total	**538**

5.5 Geographical boundary of study in each station

In each station, respondents were chosen from areas within a radius of five miles from the station. For each station, respondents were selected from nearby villages, remote villages and very remote villages.

5.6 Research instruments

Structured questionnaires were the main research instruments. Five different sets of questionnaires were designed and used for the research. Questionnaire 1 was used to gather information from people who 'use' or 'ever-used' PFnet services. Questionnaire 2 was used to gather information from people who 'never-used' PFnet services. Questionnaire 3 was used to gather information from the operators at each of the PFnet stations. Questionnaire 4 was used to gather information from committee members at each of the PFnet stations. Finally, Questionnaire 5 was used to gather information from focus group meeting participants at each station.

5.7 Pilot testing of questionnaire

The questionnaires were pilot-tested by interviewing Solomon Island students at USP and in Solomon Islands in order to assess the relevance of the questions, iron out problems and assess the cultural appropriateness of the questions.

5.8 Training of research assistants

Five research assistants (one for each PFnet station) were chosen to conduct the fieldwork (with the help of the six main researchers). All of them were familiar with PFnet activities. They were trained for three days by the main researchers before conducting the fieldwork.

5.9 Conducting the fieldwork

A researcher and a research assistant stayed at each of the five stations for a week, conducting interviews, holding focus group meetings, and talking to key informants. After the researchers left, the research assistants continued the fieldwork for another seven weeks.

5.10 Confidentiality

The research assistants were asked to remind the respondents that all information collected would be confidential and their identity would not be revealed because, during the analysis, all data would be aggregated, not reported separately. In addition, the

email station operators were told to remind the people using people PFnet that the user log data collected at each station would be kept confidential and used for research purposes only, and that their identity would not be revealed. Only their demographic data (age, gender, etc.) and data relating to the use of services were collected; their names were not recorded. Permission of the respondents was sought before their data were recorded.

5.11 Strengths and limitations of the research

One of the strengths of the research project was that it involved three 'insiders' who had set up the PFnet stations in the rural areas and were managing PFnet in Solomon Islands. Two of these were indigenous Solomon Islanders: Mr Randall Biliki, PFnet Manager, originally from Sasamungga and now based in Honiara Headquarters, and Mr Allan Agassi, chairman of the PFnet Board. The third insider was Mr David Leeming, technical consultant to PFnet. The five research assistants were also from Solomon Islands; two were volunteers of PFnet and they had a fairly good knowledge of PFnet operations. The knowledge of these 'insiders' made the research process easier and the team was also able to tap into in-depth knowledge.

It is acknowledged, however, that a possible limitation of having 'insiders' as researchers is that they could be biased. For this reason, prior to starting and during the research process, the principal researcher reminded the researchers to be objective.

6.0 UTILISATION OF PFNET SERVICES

6.1 Utilization data

Table 2 shows the data on email traffic and revenues from the daily reports over the 15-month period January 2003 – March 2004.

Table 2: Summary of the utilization by each station

	Number of logged users	Total Population (including infants)	Users as % of Total Population	% Female users	Average email traffic per month
Sasamungga	121	2,824	4.3	31	397
Hutuna	89	3,124	2.9	42	271
Pirupiru	107	2,788	3.9	35	228
Sigana	43	1,767	2.5	16	50
Silolo	79	12,638	0.006	19	161

Table 2 generally shows that, relative to their population size, four stations (Hutuna, Sasamungga, Pirupiru and Sigana) are high performing while Silolo is relatively lower in performance. It is noteworthy that Silolo station is situated in the most densely populated area (by far) and one would have expected correspondingly higher usage, but this is not the case. There are a few explanations for this. Firstly, Silolo Station was established as a partnership between CPRF and the *Kastom Gaden Association* and so a factor contributing to the low usage is that people see it as a private arrangement and not for public use. Such a perception can have an impact on usage. Secondly, KGA and CPRF

have their own private accounts and this is not included in the daily reports. Thirdly, Silolo has a stronger link to Honiara and Auki townships through regular shipping and road transportation and this may undercut communication needs.

More specifically, Sasamungga has the highest number of users, monthly email traffic and revenue. Pirupiru has the second highest number of users and monthly revenue, but the third highest monthly email traffic (explained by more use of other services such as secretarial and printing services probably due to the presence of a large secondary school). Hutuna has the third highest number of users and the second highest average monthly email traffic, but less revenue than Pirupiru. Sigana has the lowest number of users and female utilization, monthly email traffic and revenue. The email traffic is between 4 and 8 times less than the three best-performing stations. Silolo has good revenue but the fourth-least utilization in email traffic (explained by better than average results for use of services such as typing, printing, etc.).

The study examined a number of factors affected utilization. The discussion below examines each factor and the evidence for any linkage to utilization and appropriation.

6.2 Environment factors affecting utilization

Population density, population distribution and station accessibility have an effect on the utilization of PFnet facilities. In order to understand the relative utilization, an examination of both the population distribution and access to the stations is important. (See maps given in the station profiles in Appendix 1, which show the clustering of population around the email stations.)

Sasamungga email station is situated on Choiseul in the centre of a large cluster or strip of conterminous villages along the coast, with a gravel road providing easy access on foot, and there is also easy access from nearly all the villages by canoe. Choiseul is one of the largest islands, and is very mountainous with nearly all the population on the coast. The Sasamungga population cluster is isolated from the rest of Choiseul, with access only by expensive motor-driven canoes.

Hutuna is situated by Lake Tenggano on Rennell Island, a raised atoll with all of its population inland. A long coral road connects west and central Rennell to the lake. There are four main villages along the lakeside, joined together and connected to the road by a 15km bush trail. This is fairly flat and easy to follow, although time-consuming. The lake villages can also be accessed easily by canoe, although the cost of petrol is a major hindrance. Hutuna is the furthest village and thus the remotest of villages on Rennell. The village next to Hutuna is Tenggano, which is about 6km or 45 minutes walk along the bush trail. The distance between Hutuna and the other villages is the major inconvenience, with the cost of canoe transport. Villagers from the west of the island have to travel by infrequent truck to the lake (a two-hour journey) and then take a canoe to Hutuna.

Pirupiru is situated on Ulawa Island, which is about 30km long with a circular coral road connecting all the villages. Canoes are not generally used. However, access on foot is possible from the entire island, even though it is a full day's journey from the furthest villages. In addition, truck transport provides affordable, if irregular, access.

Sigana is situated in a bay on mountainous Isabel Island, which has no connecting roads and only some very rough bush trails. The main means of access from surrounding villages is by motor canoe. The canoe traffic between villages is quite heavy, but the price of petrol is a real problem for people. Thus, the people living beyond a few kilometers from the station have quite a difficult and expensive journey to access the station.

Silolo is situated in North Malaita (constituency), the most densely populated of the country's main islands. There is a good road network joining the villages along the coast, some inland areas and adjacent constituencies. Villages across the bay from Silolo have easy access by canoe. Access is good, therefore, for a large area of northern Malaita.

In summary, the user log results show that most of the users live within a few kilometers of the email station. The distribution of (a) the logged users, (b) the population, and (c) the resulting percentage of the population using the email stations is shown in the three tables below.

Table 3: Distance and utilization

Percentage of users living at different distances from email station (from user log)			
	<=2km	2-10km	>=10km
Sasamungga	67%	31%	2%
Hutuna	63%	25%	12%
Pirupiru	33%	39%	30%
Sigana	65%	14%	21%
Silolo	17%	76%	6%

Note: "Distance from email station" is measured along the most convenient route.

Table 4: Estimated population within zones

Estimated population within zones centered on the email station (from Census data)			
	<=2km	2-10km	>=10km
Sasamungga	731	831	1262 [2]
Hutuna	210	609	2305 [3]
Pirupiru	306	1020	1462 [4]
Sigana	490	1009	> 268
Silolo	380	7340	> 4918

Table 5: Percent of utilization per resident

Percentage of estimated population within each zone logged as email station users			
	<=2km	2-10km	>=10km
Sasamungga	11%	9%	0.2%
Hutuna	26%	4%	0.5%
Pirupiru	11%	9%	2%
Sigana	6%	5%	0%
Silolo	4%	2.4%	< 0.1%

[2] Derived from the remainder of the total for Viviru and Babatana wards; as more than 98% of the users are from these wards only.
[3] Derived from the total population of Rennell. Users were logged from the entire island.
[4] Derived from the total population of Ulawa. Users were logged from the entire island.

The data in the tables show that the community living near the station gets most benefit. In the three locations where the email station is situated inside a village, about two thirds of the logged users live within 2km of the email station. All stations, however, recorded a significant number of users from well beyond the local village community. In fact, in the case of Pirupiru (Ulawa Island), Sigana (Isabel Island) and Hutuna (Rennell Island) there is significant usage from villages over the entire island. For example, for Ulawa, as many as 30% of users lived more than 10km away by road. On Isabel, 21% users lived more than 10km away by road. On Rennell, 12% of users came from over 12km away and as far away as the provincial centre Tingoa (40km). In these communities, the entire island would appear to benefit from the PFnet (see maps in the appendix).

More specifically, within the 2km zone, we may assume that all the population has good access to the facility in all the five locations. Sasamungga has, significantly, the highest total population within this zone (731 people see Table 4), and has the second highest (11%) number of users per resident (see Table 5). Hutuna, with only one third (210 people see Table 4) of the population of Sasamungga (within 2km), has more than twice the utilization per resident (26% compared to 11%). On the other hand, Sigana, which has more than twice the resident population of Hutuna, has the lowest utilization with only 6% of residents logged as users. Silolo recorded only 4% of these people as users. Silolo is not situated within a large village, although the general density of population in North Malaita is by far the highest of the five areas, resulting in a higher than average total population in the 2km zone.

In the 2-10km zone, the effect of access problems was expected to become apparent. The results show that Sasamungga and Pirupiru, both with good utilization figures and easy road access, show only a small drop in the percentage of the population using the email station in this zone compared to the 2km zone (both showing 9% of users compared to 11% – see Table 5). But Hutuna, which is isolated from the next village by a 6km bush trail, shows a more significant drop from 26% down to 4%. However, the other two stations (Sigana and Silolo) seem to counter the trend found in Hutuna. Sigana has difficult access for people in the 2-10km zone but shows a relatively small drop in usage (from 6% to 5% of the population in the two zones), whereas Silolo with its large population with easy road access, shows very poor usage in the 2-10km zone (2.4%). If Silolo experienced the same level of utilization as Sasamungga, one would see almost 400 users (compared to the 79 recorded).

Beyond 10km, only Pirupiru and Silolo have easy road access. In the case of Pirupiru, 2% of these populations are users, whereas in the case of Silolo, with the huge population of the northern end of Malaita, it is estimated that considerably less than 0.1% of the population in this zone has used the email station.

Table 6: Users vs. Distance to each PFnet station

Distance from station	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
less than 1 km	17	16	27	19	1	80	31.9
1 km	6	20	2	5	2	35	13.9
2 km	2	4	1	6	2	15	6.0
3 km	1	8	1	7	5	22	8.8
more than 3 km	13	2	18	12	8	53	21.1
not sure	14	2	2	1	27	46	18.3
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

Source: Survey Data 2004

Similarly, the survey results also show that distance was a factor when using PFnet services. Table 6 shows that around 32% of the user's live less than one kilometer from their respective PFnet stations.

In summary, from the user-log and survey data, we can see that there is not a clear (dominant) linkage between total population's access to an email station and the degree to which they utilize it. Intuitively one would expect a trend for higher usage if there is a higher customer base, but in this case there must be other factors at play which are more important. This is most obvious in the case of Silolo station, where, despite a population density many times higher than the other four communities, the total number of users was fourth lowest. The ease of access to the stations appears to have an effect on the utilization, although this is not always the case. This is most apparent in the case of Hutuna, which has by far the highest per-capita usage in the nearby community but experiences far lower usage by the next nearest population. It might be assumed that stations which are situated in isolated villages will have less of a general impact than ones where the population is spread out over a wider area, all with easy access via a variety of transport modes.

6.3 Location and sense of ownership of email stations affecting utilization

The location of the email station and sense of ownership (whether it is privately or community-owned) has an effect on the utilization of the PFnet facilities.

The locations of the five stations are as follows: Sasamungga station is located in a clinic of a major rural hospital. The hospital board donated the use of a room that opens onto the main road through the village, and it is also centrally located. Hutuna station is located in a room in a community hall financed by AusAID (CPRF), and shared by a kindergarten. It is centrally located in the village. Pirupiru station is sited in a special building on the campus of a large secondary school. The building has three rooms, and a large sign: Pirupiru Email Station. The station is not located in a village, although there are villages close by and the school community is large in its own right. Sigana station is in a specially constructed building provided by the village community, situated in the middle of the village. Silolo station is situated not in a village but in the offices of the *Kastom Gaden Association*, a rural farmers' advice centre. The station was established in partnership with this NGO, financed by AusAID (CPRF). The email station is next to a private house.

The results show that the utilization of Silolo station (relative to the population with access) is less than one fifth of that in the other stations. The sitting of the station away from a population centre may be one reason for this. Furthermore, the lack of a sense of community ownership of the facility at Silolo is noted by the main researcher who supervised the fieldwork there:

> Since the email station office of Silolo is physically connected to a local AusAID project office and the local *Kastom Gaden Office*, people generally cannot see the email station as separate from these above projects. When people have negative feelings about one project automatically these negative feelings are mapped into the email station too even though the email station might have nothing to do with any occurring problems.

Also, the assistant researcher noted:

> Some users have strongly recommended its relocation to the Provincial Sub-Station at Malu'u. Many people have expressed their dissatisfaction with the location of the station, arguing that it was not the central location of the region. Malu'u has been identified as the appropriate and proper place for its location. This is because most of the government services are there and most of the people who have the knowledge and the need to use it are also there. People have to spend once only to get to Malu'u and have access to almost all the services they want rather than having to spend extra to get to another service at another location.

Hence, in the case of Silolo station, the lack of a sense of ownership caused by the sitting of the email station away from a village seems to be connected with poor awareness of the email station and what it can offer.

The other four stations are all situated in the centre of villages (or, in the case of Pirupiru, a large school community with conterminous villages nearby). Sasamungga and Pirupiru are situated in a clinic and a community school, respectively, but in this case these institutions are neutral and have no negative associations for the general community. No unfavorable comments were recorded about their locations during the fieldwork.

It is concluded that the location of an email station is quite critical to its appropriation and utilization by the targeted communities. The stations will be most utilized if they are located in the centre of villages and in buildings that are regarded as being owned by the community. No matter how much awareness-raising is conducted, if an email station is housed within private premises people will not regard it as available for public's utilization.

6.4 Isolation, ease of transport and alternative communications affecting Utilization

There is an apparent correlation between the degree of isolation and the utilization of the facilities. The survey results show that 44% of the 'never used' group indicated that the PFnet stations were too far from their village. In particular, the very-well utilized station of Hutuna is very isolated. Rennell and Bellona province has no regular shipping. Typically several months pass before a chartered vessel calls at the nearest 'port', Lavanagu Bay, where all cargo has to be ferried ashore by canoe. The provincial capital Tingoa is 50km by canoe and road from Hutuna, and this is not an easy or affordable journey to make. The airstrip at Tingoa has twice weekly flights to Honiara, but this is very expensive and

overbooked. Alternative communications between Hutuna and Honiara consist of hand-delivered letters couriered by air passengers, and short-wave radio calls. Due to the distance of Hutuna from Tingoa airstrip, hand-delivered letters are not easy to arrange, nor are they reliable. Radio owners in Hutuna charge $5 – $10 for voice calls to Honiara. As few Rennellese in Honiara have access to a short-wave radio, people have to rely on such messages being passed to the intended recipient: not a very reliable or confidential system.

In this case, it is obvious how convenient email will appear to Hutuna residents, and to their Honiara-based relatives and contacts. The survey data and the user data show that basic communications are the main service used by Hutuna people.

Sasamungga and Pirupiru are also remote and isolated, although they have slightly better transport options. In the case of Pirupiru, which is situated in a large school, teachers have a need to communicate with their provincial headquarters and with the nearest bank in the provincial centre Kirakira, which means an expensive and dangerous open-sea canoe crossing. This isolation and resulting need is obviously a factor driving up utilization.

The two least-used stations, Silolo and Sigana, are the best connected with Honiara. Sigana is only a six-hour sea crossing from Honiara, with often more than one ship calling each week. This constitutes an excellent transport service in Solomon Islands. Silolo is also quite near Honiara and has weekly shipping. It also has a road connection with the provincial capital Auki, and the large population makes transport quite easy. Villagers catch a ride with their relatives, or pay a small fee to ride on the back of a public truck. One of the reasons quoted by Silolo people about why some did not use the services was that there were short-wave radios available for voice calls.

It can be concluded that isolation and lack of alternative means of communication drive up utilization. However, the benefits of Internet-based communications are perhaps not being made clear enough to the potential users. More training and demonstration of information access should be planned by PFnet to address this, especially for special interest groups and in the less isolated stations.

6.5 Diaspora affecting utilization

There is an apparent correlation between the degree of dispersion of people within and outside Solomon Islands and the utilization of the facilities. Although in most rural parts of Solomon Islands the communities are very ethnically homogenous, most ethnic groups have relatives living away from their home islands in Honiara and other urban centers and close to sources of employment such as plantations. They also have students attending university overseas and secondary students pursuing their education in schools away from their home islands. There are Solomon Islanders married to foreigners and professionals resident overseas.

The proportion of emails sent from each station is broken down into domestic and international in Table 7. This data is taken from the daily reports of user data collected over 15 months.

Table 7: Percentage of Emails sent by each station by destination

	Sasamungga	Hutuna	Pirupiru	Sigana	Silolo
Domestic	88%	58%	87%	84%	54%
International	12%	42%	13%	15%	44%
Unknown	0%	0%	0%	1%	2%

Source: PFnet monitoring system data (Jan 2003 – March 2004).

These data show that the populations of all communities have a need to communicate with overseas contacts. In particular, Hutuna has a high proportion of overseas communication. People from the village told the researchers that many families in that community have members who are studying or resident overseas. This is also the case with Silolo, which shows 44% of emails are being sent overseas.

Comments by a teacher at Pirupiru:

> The dispersion of Ulawans in other locations (overseas/locally) has a considerable impact on the general usage of the email station. Most Ulawans reside in other locations mainly because of employment and education. With education, perhaps because of the small base population size, you would hardly find many (more than 10) Ulawans studying/working in overseas institutions that will then increase the email traffic to/from them. For employment, again not many Ulawans had reached occupations that would allow them access to their office computers for emailing. Again this is a direct consequence of lack of higher education and population size. The majority of Ulawans in other locations (Honiara/Provinces) are mostly employed in the lower strata of occupations that have some restrictions on access to their office computers, if any. For those in the villages, it is only after/before an event (marriages/deaths/payment of school fees, etc.) occurring before they really have the need to send an email message. Nevertheless, having a large dispersed population would have a direct impact in the volume of messages sent.

These comments would suggest that PFnet might encourage more people to use the facility if it stimulated traffic from Honiara to the remote communities, by assisting the Honiara-based relatives to use the network via the Internet Café. In fact, PFnet has noticed an apparent link between awareness in the Honiara-based settlements from each connected community, and the general utilization. It tries to encourage this by holding open days for people from the same community when a new email station is opened.

In summary the results show that communication between the remote communities and their dispersed populations, in particular those based in Honiara, is obviously a prime mover for utilization. PFnet should encourage such communications traffic through open days, training and by any other means. This can then be expected to stimulate increased utilization.

6.6 Personal income affecting utilization

In order to find out if there was an apparent correlation between the village economy and the utilization of the facilities; data were collected on the average incomes of PFnet users in each community. This is summarized in Table 8.

Table 8: Average monthly incomes of PFnet users by station

	Users of PFnet						
Monthly income	**Sigana**	**Sasamungga**	**Hutuna**	**Pirupiru**	**Silolo**	**Total**	**%**
$5- $50	22	13	34	25	14	108	43.0
$51- $100	7	10	3	5	7	32	12.7
$101- $200	13	6	4	2	10	35	13.9
$201- $300	1	5	0	6	9	21	8.4
$301- $500	4	4	4	3	4	19	7.6
$501- $1000	1	7	0	2	1	11	4.4
$2,500	1	0	0	0	0	1	0.4
NR	4	7	6	7	0	24	9.6
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**
Average max income	**$157**	**$297**	**$107**	**$173**	**$258**	**$187**	**0**

Table 8 shows that the average income of a PFnet user in these five communities is SB$187 (about USD$25 per month or less than US$1 per day). It varies quite significantly, with Sasamungga users averaging SB $297 a month and Hutuna users averaging SB$107 a month.

This is interesting because income does not correlate with utilization. Although Sasamungga is the most utilized of the five stations, in fact Hutuna is consistently the second-most utilized, and in Silo, where the number of users is lowest compared with the total population, the users reported the second highest monthly incomes.

6.7 Awareness of the existence of the PFnet station and its services

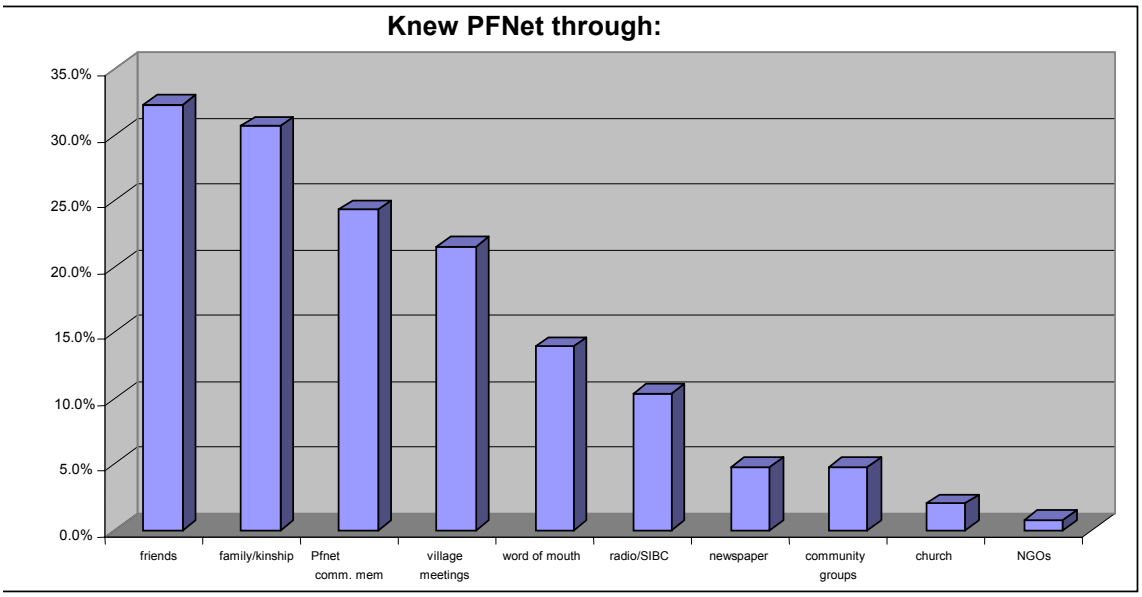
Awareness of the PFnet services has an impact on utilization. Most people are aware of the existence of a PFnet station in their area. Rather than asking this obvious question, the researchers wanted to find out if the people (both users and ‘never used’ knew how the email stations worked and if they were aware of all the types of services provided. Hence, in the survey, the first set of questions asked whether they knew about the types of services provided by the PFnet stations. Amongst the 'users' a high proportion (94%) indicated email, typing, and printing services (see Table 9). These are the core services provided by PFnet stations. In contrast, amongst the 'never used' only 18% indicated that they knew that the PFnet station provided email, typing, and printing services.

Table 9: Services known to respondents by station amongst the 'user' group

Specify known services	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Email, typing, printing	44	52	46	50	45	237	94.4
News	3	0	0	0	0	3	1.2
Email only	0	0	3	0	0	3	1.2
Typing	2	0	0	0	0	2	0.8
Radio	0	0	1	0	0	1	0.4
No response	4	0	1	0	0	5	2.0
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

A further question was asked on how users knew about PFnet services. The results are shown in Graph 1.

Graph 1: Source of Knowledge about PFnet (user group)



The results were varied with around one third (32%) indicating that they knew via friends, close to one third (31%) knew it through family and kinship, a quarter (24%) though PFnet committee members, 21% through village meetings, 10% via radio, and 5% through newspaper. In other words, 63% of all the respondents knew of the PFnet stations through friends, family and wider kinship. This finding is similar to the 'non-user' group in which 72% indicated they knew of the PFnet stations through friends, family and wider kinship. This trend is understandable because in Solomon Islands communities are close-knit and information is usually exchanged during informal gatherings. This information is very useful for the station committee for their awareness promotion programmes.

6.8 Reasons for use and non-use of PFnet services.

The researchers asked the 'user group' the main reasons they use PFnet services. The respondents were asked to indicate as many reasons as possible and after this they were asked to rank the three main reasons as 1, 2, and 3. The results show that for a high proportion (88%) their first ranked reason was to communicate with family and friends; next came educational purposes (36%); and then business purposes (around 22%).

Table 10: Main purpose of using PFnet services (user group)

Main purpose of using PFnet	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Communication with family and friends	43	44	49	46	37	219	46.7
Education	16	30	16	16	13	91	19.4
Business purposes	13	14	8	8	13	56	11.9
Church	8	1	7	5	3	24	5.1
Remittance of money	0	14	1	0	4	19	4.0
Project/NGO	2	3	5	1	4	15	3.2
Health/medical	1	11	0	0	2	14	3.0
Government administration	1	2	3	0	3	9	1.9
Travel	4	1	1	0	0	6	1.3
Women's issues	0	3	0	1	0	4	0.9
Sports	0	3	0	0	1	4	0.9
Police/law and order	0	0	0	0	3	3	0.6
Agriculture	0	2	0	0	0	2	0.4
Other	1	0	1	0	1	3	0.6
Total	**89**	**128**	**91**	**77**	**84**	**469**	**100**

For their second ranked reason, around 20% indicated education purposes, 47% indicated communication with family and friends, and 12% indicated business purposes. For their third ranked reason, 12% indicated business purposes and 4% remittance of money.

The 'user group' was then asked how many of them were not currently using the PFnet services and the reasons for it. The results show that 11% of them were not currently using PFnet services. Of these, 41% said they had no urgent need to use emails; 26% said they had no message to send; 19% said they had no money and 8% used other means of communication. The 'other means of communication' are traditional *wantok* courier service (by word of mouth or hand written notes), messages read on Solomon Islands Broadcasting Corporation radio station, telephone (where available) and newspaper (to a limited extent).

Table 11: Reasons for 'users' not currently using PFnet services by station

Why are you not using now?	Sigana	Hutuna	Silolo	Total	%
No urgent need	2	7	2	11	40.7
No message to send	6	1	0	7	25.9
No money	2	2	1	5	18.5
Have other means of communication	1	0	0	1	3.7
The person to contact has no email	1	0	0	1	3.7
Send messages through SPBEA	1	0	0	1	3.7
No Response	1	0	0	1	3.7
Total	**14**	**10**	**3**	**27**	**100**

Amongst those that are currently using PFnet services, we further asked about their frequency of use of PFnet services. The results show that 3% use the services every day, 15% use it 2 or 3 times a week, 21% use it once a week, 13% use it once fortnightly, 20% use it once a month, and 28% use it rarely.

Table 12: Frequency of PFnet services use by station

How frequently do you use PFnet?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Every day	1	1	4	1	1	8	3.2
2 – 3 times a week	5	13	11	2	6	37	14.7
once a week	8	10	14	6	14	52	20.7
once fortnightly	6	7	5	5	9	32	12.7
once a month	10	16	4	11	9	50	19.9
Rarely	23	5	11	25	6	70	27.9
No response	0	0	2	0	0	2	0.8
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

Table 13: Types of services used by station

What services do you use?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Send and receive emails	52	52	51	49	44	248	60.5
Send and receive news reports	9	21	22	5	16	73	17.8
Typing	10	18	11	18	11	68	16.6
Search for information	1	5	5	2	3	16	3.9
Other	1	0	0	1	3	5	1.2
Total	**73**	**96**	**89**	**75**	**77**	**410**	**100**

The ‘user group’ was also asked to indicate the types of services that they use and the results are shown in Table 13. A high proportion of the respondents (60%) indicated that they use email services, 18% use it for news and 17% use it for typing services. As the results show that the majority of the respondents use the stations to send and receive emails, then we can say that PFnet stations are fulfilling their objective in providing the

villagers with contact with the outside world via email. This is important because in the absence of other forms of communications, the PFnet community email stations are the only link with the outside world, either to ensure health security, public services, education, or essential contacts with family and professional peers.

More questions were asked regarding use of some specific services. For example, whether the respondents use the PFnet services to send and receive news reports and 42% indicated they did. It should be noted that there is no Internet facility at the rural email stations. Only the Internet Café in Honiara provides Internet services. Hence in the rural stations customers cannot browse the Internet for news. The news service operates three ways. Firstly, people can pass news of events to other areas by going to the email station and asking the operator to type the news and send it to the PFnet Headquarters in Honiara for editing. The operator in Honiara does the editing and releases the news to the Solomon Islands Broadcasting Corporation (SIBC) (main radio station) or Radio New Zealand, or to the country's main newspaper, the Solomon Star. Secondly, the PFnet Headquarters compiles national news and sends news (via email) to all stations. In each station, the operator prints the news on demand and charges them a small fee ($S1) for the printing cost. This income from news constitutes the station's income. Thirdly, station operators can compile their own newsletter and email it to the SIBC, the Solomon Star, or Radio New Zealand.

Of those who were using the PFnet services for getting news, a very high proportion (98%) indicated that the news service was useful. Of those respondents using news services, 32% used PFnet to receive news once a week. Once again these results indicate that to some extent one of the objectives of PFnet — to disseminate news to rural areas — is being met. However, more awareness work needs to be carried out to promote the news service, as 58% of the respondents do not use PFnet for news.

Interestingly, when questioned on suggestions to improve the news service, almost 29% suggested they want more local news; 23% stated that PFnet should be promoted and 19% stated that more pictures should be added for persons who cannot read.

Table 14: Suggestions to improve the news service (by news service users only) by station

How can the news service be improved?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Local news	1	6	13	2	8	30	28.6
Promote PFnet	4	7	3	6	4	24	22.9
Add pictures for those who can't read	5	5	5	1	4	20	19.0
More detailed information	3	5	4	0	5	17	16.2
More computers	2	4	3	1	4	14	13.3
Total	**10**	**14**	**12**	**2**	**13**	**105**	**100**

Amongst the 'users' the researchers were interested to find out the main reasons why they were not currently using PFnet services. Table 15 shows the result. Multiple responses were recorded. Two-thirds (66%) of the respondents indicated that they were not aware of the types of services provided and did not know how to use them, 41%

indicated that the station was too far from the village, and another 40% indicated they had no need to use the services.
Throughout the interviews the point that 'people do not know how it works' came out vividly as one of the most important issues. Many people had heard about the email station — they even attended the opening of the station — but still did not fully comprehend the system. One villager near the Silolo station said: "PFnet is new and many people here are not very confident on how to use it".

Table 15: Reasons for 'users' not currently using PFnet services by station (multiple responses)

Reason for not using PFnet now	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Not aware of the types of services provided and do not know how to use it.	24	42	24	18	63	171	41.5
Too far from village	15	8	29	22	34	108	26.2
Do not have the need to use the services	21	19	28	25	11	104	25.2
Too expensive as have limited income	4	3	4	1	1	13	3.2
I prefer letter-writing	0	5	3	0	2	10	2.4
To old to use it	1	1	0	0	1	3	0.7
Because I don't know who to contact, also am illiterate	1	0	1	0	0	2	0.5
My contacts do not have email	0	1	0	0	0	1	0.2
Total	**66**	**79**	**89**	**66**	**112**	**412**	**100**

In Sigana, knowledge of how to use PFnet is also an issue. In the focus group meetings for women and business people, it was noted that most people are aware of the station, but do not know how it works. This result indicates that more awareness programmes by various stakeholders are needed for greater utilization of PFnet services by the rural people of Sigana.

On the other hand, there is widespread awareness of the Hutuna PFnet services throughout Rennell. Isolation might be driving up need. Another factor that might have contributed to this is the practice of holding an open day for Honiara-based members of the community where their email station is deployed. This has produced good results for Hutuna. Honiara residents have only limited means of communicating quickly with their home village, and were therefore very quick to use the operator-assisted services in the Internet Café, or to open web mail accounts and receive training from the PFnet staff. Traffic generated from these people then drives up the usage in the village until a critical mass is reached.

The researchers asked the 'never used' group whether they were likely to use PFnet services in future and around 86% indicated they were, 8% said they were not and the remaining 7% were not sure. Table 16 below shows the results. The researchers also asked the 'user' group to throw some light on why some of their fellow villagers were not using PFnet services. Their perceptions are shown in Table 17.

Table 16: Likelihood of 'never used' using PFnet in future

Are you likely to use PFnet in future?							
	Sigana	**Sasamungga**	**Hutuna**	**Pirupiru**	**Solo**	**Total**	**%**
Yes	45	40	41	50	48	224	85.8
No	4	8	4	0	4	20	7.7
No response	4	2	5	0	6	17	6.5
Total	**53**	**50**	**50**	**50**	**58**	**261**	**100**

Table 17: 'User' group's views on why 'never used' group were not using PFnet services

	Sigana	**Sasamungga**	**Hutuna**	**Pirupiru**	**Silolo**	**Total**	**%**
No urgent need to use it	6	25	20	14	3	68	27.5
Lack of confidentiality	16	6	9	8	9	48	19.4
Do not know how it works	6	5	3	4	19	37	15.0
Not aware of it	7	7	5	11	4	34	13.8
Not educated	8	2	6	6	8	30	12.1
No money	10	7	5	7	1	30	12.1
Total	**53**	**52**	**48**	**50**	**44**	**247**	**100**

The results show that that around 28% of users indicated that the main reasons their fellow villages were not using PFnet are that they do not have an urgent need to use it, 19% mentioned lack of confidentiality, and 15% indicated that people did not know how it works. The issue of confidentiality is worth noting. The fear of personal and confidential matters being revealed by operators is one of the factors affecting the uptake of email services. Some respondents felt that an operator reads the message because in a few cases confidential matters have been revealed by operators. The research results show that, in a few cases, the operators have revealed confidential material to other people and in closely knit rural communities this has led to embarrassment and resentment. This problem of confidentiality is a result of the system of sending and receiving emails which operates as follows: when a person needs to send a message he/she writes it down either in English or Pidgin and gives it to the operator who then types the message in the laptop and sends it. This is a rule of the PFnet management and not that of an operator. The justification given by the PFnet management is that they do not want many people handling the laptop because it leads to maintenance problems.[3] By typing the message, an operator knows its content and all users are aware of this. Therefore, for confidential issues (such as pregnancy) people prefer to use alternative methods of communication (letter-writing). Some respondents complained about the confidential issue with regard to the in-coming emails. The procedure for in-coming emails is as follows: when an email message comes in an operator has to print it and pass it the person concerned by reading only the name of the recipient, not the content.

[3] In only a few cases, the educated and business people have their own personal account (which is expensive) and hence are able to type and send their own messages without an operator knowing the content of the message.

6.9 Cost of using PFnet services

The results show that 15% thought the service was 'very cheap', 36% indicated 'cheap' and 45% indicated it was 'reasonable'. In total, a very high proportion (97%) of the users indicated that the cost of sending and receiving emails was either 'reasonable', 'cheap' or 'very cheap'. However, amongst the 'never used' group, 19 % indicated that cost was a barrier to their use of PFnet services. Furthermore, some respondents (particularly schoolteachers) in a few focus group meetings at one PFnet station (Sasamungga) commented that the services of 'typing and printing' were expensive. In Sasamungga the problem arose not because PFnet charges are high, but because the PFnet operator in that station was ignorantly overcharging clients because she did not fully understand the instructions given by the PFnet management based in Honiara.

Table 18: View of PFnet service prices by station

What do you think of the price of PFnet?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Very cheap	9	10	6	8	5	38	15.1
Cheap	9	31	27	15	9	91	36.3
Reasonable	32	10	16	27	28	113	45.0
Expensive	0	0	0	0	3	3	1.2
Very expensive	3	1	0	0	0	4	1.6
No Response	0	0	2	0	0	2	0.8
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

6.10 Literacy level needed for using PFnet services

At must be noted that the way the PFnet system works, it is not necessary for people to be literate in English to be able to use PFnet services. Here is the crucial role station operator's play as intermediaries for the people of the community. They perform all the functions such as typing out-going email messages, opening and printing in-coming messages, etc. However, the usage data show that most users have at least Form 3 education. The survey data corroborate this and show that 71% of all the PFnet users interviewed had at least Form 3 education. In Hutuna and Silolo, users with up to Form 3 education constitute the largest group, 86% for Hutuna and 75% for Silolo, whereas in Sigana users with primary education only constitute the largest group. In Sasamungga and Pirupiru, users with senior secondary education (Form 4 or higher) constitute the largest group — 65% and 53% respectively. This may be explained by the proximity of large community schools and other institutions such as a major rural hospital (Sasamungga). However, it still means that between one third and a half of all users in Sasamungga and Pirupiru, have not gone beyond Form 3.

6.11 Use of PFnet services by women

One of the aims of the research was to find out the extent of use of PFnet by women. The results are shown in Table 19. The researches findings from the 'user-log data' (recorded over 8 weeks of research) show that on average 31% of users are women. Hutuna has the high percentage of women users (with 42%), followed by Pirupiru with 35%, Sasamungga with 31%, Silolo (19%) and Sigana (16%).

Table 19: Use rate by gender by station

	Male	Female	Total
Sasamungga	83 (69%)	38 (31%)	121
Hutuna	52 (58%)	37 (42%)	89
Pirupiru	70 (65%)	37 (35%)	107
Silolo	64 (81%)	15 (19%)	79
Sigana	36 (83%)	7 (16%)	43

Source: User-log recorded over 8 weeks of research from January to February 2004.

The research findings from the user-log monitoring data (recorded over 15 months) showing details of the number and percentages of emails sent by women in each of the five stations are shown in two tables below. Women's use of PFnet services varies quite significantly, not only across stations but also with time.

Table 20: Number of emails sent by women per month by station

Month	Jan03	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan04	Feb	Mar
Sasamungga	38	30	25	31	26	37	37	35	35	39	25	21	49	41	33
Pirupiru	13	36	17	31	29	32	39	45	35	18	20	23	33	33	27
Sigana	6	8	8	7	4	6	5	5	6	5	4	2	3	4	7
Silolo	13	2	7	6	13	3	3	12	9	8	2	2	9	15	14
Hutuna	0	0	2	27	36	36	40	28	32	32	38	10	52	46	42

Source: User-log monitoring data recorded over 15 months

Table 21: Percentage of the total of email sent monthly by women (from daily reports)

Month	Jan03	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan04	Feb	Mar	Apr
Sasamunnga	24	20	16	18	16	26	22	22	20	26	27	29	37	29	19	23
Pirupiru	15	27	14	22	24	33	28	30	25	18	22	20	25	26	21	23
Sigana	19	26	24	28	14	32	17	24	16	25	22	9	9	17	18	20
Silolo	30	2	25	13	26	8	11	15	15	11	4	4	14	33	21	15
Hutuna	0	0	0	23	30	34	24	18	16	29	17	7	48	53	31	27

Source: User-log monitoring data recorded over 15 months

Table 21 shows, in Hutuna, the monthly monitoring data shows women's usage ranged from 0% to 53% with the average of 27%. The female usage is seen to increase towards the end of the reporting period to coincide with the time the user log was being recorded, with a maximum of 53% in February 2004. In other stations, the data show women's usage was from 15% (Silolo) to 23% (Sasamungga and Pirupiru). The general observation from this and the user log data is that the three best used stations (Hutuna,

Pirupiru and Sasamungga) have much greater women's usage than the two less used stations. The reasons for this include logistical and economic reasons, in addition to the cultural ones. There might also be an effect caused by differences in the effectiveness of PFnet awareness and training processes, and other management and ownership factors. Women in the 'never used' group' were asked why they do not use PFnet and the results are shown below.

Table 22: Reasons women do not use PFnet services (multiple responses)

Reasons	**Total**	**%**
Don't know how PFnet works	62	25.4
Too far from my village	47	19.3
Do not have the need to use it	46	18.9
Using other type of communication	20	8.2
Not aware of PFnet services	9	3.7
Too expensive	4	1.7
Don't like it	2	0.9
Other reasons	54	22.2
Total	**244**	**100**

The results show that 25 % of the women indicated that they do not know how PFnet services work, around a fifth reported that the station was too far from their village and another fifth reported that they do not need to use PFnet services.

The survey results from the 'user-group' reveal that women use PFnet services less than men. Users were asked to indicate whether women in their families used PFnet services. The results show that around 36% of users stated that women in their family use PFnet services.

Table 23: Do women in your family use PFnet by station?

Do any women in your family use PFnet?	**Sigana**	**Sasamungga**	**Hutuna**	**Pirupiru**	**Silolo**	**Total**	**%**
Yes	8 (15%)	17 (33%)	29 (57%)	31 (62%)	5 (11%)	90	35.9
No	2	0	5	0	10	17	6.8
Not sure	43	35	17	19	30	144	57.4
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

Users were asked to give reasons why women use PFnet less and the results are shown in Table 24.

Table 24: Reasons women are less frequent users than men

Reasons	Stations						
	Sigana	**Sasamungga**	**Hutuna**	**Pirupiru**	**Silolo**	**Total**	**%**
Distance (access) problems	1	2	2	4	4	13	5.4
Don't know how to use PFnet	4	7	2	1	18	32	13.2
Don't have anyone to contact	7	0	0	6	4	17	7.0
Thought only males & the educated use it	8	0	1	11	2	22	9.0
Shy/afraid to use PFnet	7	7	3	2	7	26	10.7
Too busy with other chores	2	11	20	4	1	38	15.7
Don't like going to offices	0	0	0	1	0	1	0.4
Use males to send messages for them	3	10	0	4	3	2 0	8.3
Consider it a male activity / responsibility	2	4	0	16	1	23	9.5
Not interested	1	1	0	0	0	2	0.8
There are equal male/female users	13	0	16	0	0	29	12.0
Other reasons	4	7	3	0	5	19	7.9
Total	**52**	**49**	**47**	**49**	**45**	**242**	**100**

Table 24 shows the perceptions of PFnet users in each community of women's utilization. 15% of the respondents reported that the main reason for not using the service was that women were too busy with other chores. 12% disagreed with the premise that women use it less than men. Not surprisingly, most of these respondents were from Hutuna, where the user log shows that women's usage is highest (42%) of the five locations. A further 10% indicated that it was considered a male responsibility / activity. If one assumes that this response indicates a cultural explanation, the table also shows that the traditional role of women in society is a factor in limiting their utilization. Adding the responses 'thought that only males used it' and 'used males to send messages' as a secondary indicator, a total of 26.9% of the overall responses indicates a cultural factor. In a way, 'too busy with other chores' is also a factor associated with women's role, as women are often occupied with childcare and tending gardens that might be quite a distance from their homes.

In terms of differences between women's utilization in the five communities, the table shows that women's role (apart from the fact of their other chores being time-consuming) is least an issue in Hutuna (only 1 out of 47 respondents thought women's role was an issue), and most in Pirupiru (31 out of 49 responses). This difference prompts us to look at these two communities in more detail.

Hutuna is situated in the Polynesian Rennell and Bellona Province. Land ownership is patrilineal (passed through the male line). There is traditional leadership and division into clans and sub-clans, but the islands have a relatively unstratified society.

Peter Pitia, the researcher who conducted the surveys in Hutuna observed:

> Women's usage is obviously high. The women's focal group and all the interviewees with whom I spoke perceived that the women's usage is probably

about the same, or only slightly lower than men's. Whilst I was there, I filmed one very old woman sending an email, and the operator told me that a few days before a 7-year old girl had come with a message to send to her mother who was away in Honiara. I was told that women particularly feel the need to communicate with dispersed relatives, and that in the culture, family communication is often "woman to woman", who then pass on the information to their men folk. The Deputy Principal of Henua School in Niupani village stated that the culture is very liberal, allowing free movement and mixing and that therefore women feel the need and freedom to communicate freely.

Ali Tuhanuku, the UNDP Desk Officer for Solomon Islands, during an interview, mentioned that:

> There might be cultural and historical reasons why Hutuna women use the facility more than in very traditional (*kastom*) areas. Rennell and Bellona almost totally left their traditional beliefs behind when Christianity was established after 1938. The abrupt change of values has led to more freedom of expression and the ability to embrace more modern (i.e. westernised) values, as opposed to (say) traditional societies in both Melanesian and Polynesian islands where the old traditions and values which for women are quite restrictive still persist.

Avis Mamao, a teacher in Pirupiru Secondary School, commented:

> Perhaps from a strong cultural influence, all communication needs and requirements of the family (nuclear/extended) are prescribed to the man's role.

The women's focus group meeting at Sigana, which has the lowest women's utilization (20% average from the daily reports data and 16% from the user log), also reported that the traditional women's role restricted them from using the facility. One lady from Sigana village commented:

> Most activities related to communication out from the village are done by the man. Women's role is very limited to domestic activities such as gardening and other household duties.

The other station where women's usage is low is Silolo (15% average from the daily reports data and 19% from the user log). Strong cultural influences were cited by the researcher conducting the surveys. He stated:

> Male dominance is very real and tangible in this area, creating an imbalance in gender development and the approach to other development areas. During the interviews, it is not easy to ask the females questions. They were shy and very timid, but more so afraid of breaking their cultural expectations. Women are not encouraged to have conversations with strangers, especially if they are of the opposite gender. Their place is at home to tend the domestic chores. Whatever opinion they are to give must be witnessed by the husband, brother or another sister. This is so that no inconsistency with cultural understanding is experienced. This calls for cultural sensitivity and proper cultural approach so that suspicions will not be raised.

The committee members in each station were asked why women use PFnet Services less than men. The results are consistent with the arguments developed above; they suggest cultural reasons, which differ in the five communities according to the strength of the traditional values prevalent there.

In Hutuna, where the women's role is least restrictive, a committee member suggested that the real reason might be lack of training rather than cultural reasons. In other stations the traditional view of women's roles is more apparent.

Education of women also seems to play a part. Although the usage data from the daily reports show that there are users with all standards of education, including no formal education, the survey result shows proportionally more educated women are using the station. It is known that women are more likely to have a lower education standard and leave school earlier. Therefore, women may use the stations less because they are generally less educated than men. Table 24 shows that 9.1% of people thought that women use the facility less than men because they thought only males and educated people use it.

Lack of awareness was cited as a reason why women are not using the Sigana station much. The women's focus group reported that:

> Some women in the focus group never visit the station, they are only aware that a communication system is in the village. Most women do not know what PFnet is and what it does, apart from being a speedy communication system.

It is interesting to note that when Sigana (PFnet's 4th email station) was deployed, PFnet did not hold special women's awareness meetings during the establishment of the station, as is the rule now.

Distance is another factor limiting access for women.

Avis Mamao of Pirupiru corroborates this:

> Distance to the Email Station is an issue, for women especially. For most women from the more populated northern/western side of the island, the distance to Pirupiru is quite a problem. Often their messages are brought over by a male (especially young boys) who has to walk or ride a bicycle. Most females recorded as senders are mainly from the surrounding villages of the station.

Greater participation of women in women's organizations might lead to greater demand for communication and networking. Avis Mamao comments that this is indeed a factor in women's utilization:

> Perhaps the lack of promotion and participation of rural women in women's groups and NGOs on the Island and at Provincial levels also has some effect here in terms of fewer female users. The only active groups that use the station are women's church and youth groupings for emails and typing documents.

In the women's focus group discussions, confidentiality was highlighted as a reason for less use by women. For example, in Hutuna station, some of women respondents indicated being shy, especially because a male operator is in charge of the email station. They sometimes felt too shy to give the operator their messages to type and for this reason they expressed a strong desire for basic computer training and the provision of extra computers where they could type their messages themselves.

Generally, lower female participation vis-à-vis male participation is understandable because Solomon Islands (like most Pacific Island countries) are a patriarchal society where men play a more dominant role in family and societal affairs. Solomon Islands population is made up of a very diverse ethnic mix, with Polynesians, Micronesians,

European, Chinese and other minorities in addition to the majority Melanesian groups. Even amongst each of these groups one finds a great diversity. Not surprisingly, women's roles and expectations of women in these societies are also widely different. These roles may therefore be expected to have some impact on the degree that women are free or willing to embrace ICT.

Having said this, however, some women in the focus group meetings pointed out that women's usage may really be higher than recorded; this has to do with the system of recording used by PFnet operators. They record the gender of the person who comes to send the emails and not the gender of the person who wrote the message or is sending the message. Thus, if a father goes to the station, it is recorded as a 'male' statistic and if a mother goes to the station it is recorded as a 'female' statistic, regardless of who wrote or instigated the message. Furthermore, 8% of women respondents in the survey mentioned that they send males in their family to send email messages. For example, one woman in Sasamungga station had this to say:

> On most occasions I send my husband or son to send emails. I am secretary of a women's club and I send emails regarding this to our main branch in Honiara. The reason I do not go to the station is because I am busy with my household work. (Discussion during a women's focus group meeting, Sasamungga station, 15 January 2004).

Another woman in Silolo station said:

> My husband is bit jealous of me walking a kilometer and going to the email station to send emails to my daughter in Honiara. You know how men think. So I write the message and he goes on my behalf. (Discussion during a women's focus group meeting, Silolo, 23 January 2004).

Another issue that needs to be taken into consideration is that there is difficulty in defining when a message is distinctively a 'female message' vis-à-vis a 'male message'. Some women in the focus group interviews mentioned that when the need to send an email arises (e.g. contacting school for their children) this is a 'whole family issue' and not a 'male' or a 'female' issue and hence it does not matter who physically goes to the station to send the email.

6.12 Use of PFnet services by age

The research findings from the user-log data show that the biggest group of users (around 20%) was in the 40 – 44 years age bracket. The second biggest group (17%) was in the 35 – 39 years age bracket, followed by 30 – 34 years age group (12%) and 25 – 29 age groups (11%). In Sigana, Sasamungga, Pirupiru and Silolo the biggest group of users were people in their thirties and forties, while in Hutuna station, the biggest group was in their fifties.

Table 25: Users by age

Age	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
10-14	0	0	0	1	0	1	0.4
15-19	1	1	0	6	0	8	3.2
20-24	2	8	7	3	4	24	9.6
25-29	4	4	5	6	8	27	10.8
30-34	9	4	5	5	7	30	12.0
35-39	12	6	4	8	12	42	16.7
40-44	10	8	18	9	4	49	19.5
45-49	6	4	2	3	1	16	6.4
50-54	3	5	5	2	4	19	7.6
55-59	3	2	4	4	3	16	6.4
60-64	1	6	1	0	2	10	4.0
65+	2	4	0	3	0	9	3.6
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

7.0 THE IMPACT OF PFnet SERVICES ON THE LIVES OF GRASS-ROOTS PEOPLE

The second broad aim was to find out the impact of PFnet services on the lives of the grass-roots people. Within this broad aim the following research questions were formulated:

Has the PFnet project improved the livelihoods of people in PFnet project communities? If so how?

Which groups in these communities have benefited most? Which groups have benefited the least?

Has the PFnet project in PFnet project communities contributed to:

- environmental awareness and sustainable resource management;
- improved gender equality in PFnet project communities;
- improved well-being (including health and security) for people in PFnet project communities; and
- Peace-building and reconciliation.

In what ways have any improvements to livelihoods, environmental awareness, gender equality and well-being been sustained?

Has the PFnet project been able to increase awareness of the use of ICT as enablers for development at policy- and decision-making levels in Solomon Islands? If so how? Has the PFnet project stimulated activity at the policy level in Solomon Islands?

The analysis in Part 2 will be a synthesis of quantitative data from the surveys, user-log data, PFnet monitoring data, and qualitative data from focus group meetings.

7.1 PFnet has assisted in reducing the digital divide

We asked the 'user-group' how PFnet has impacted on their lives and the results show that a high proportion (81%) of respondents indicated they use PFnet services to communicate with family and friends (see Table 26). Around 11% indicated it enhanced their business. In addition to the survey results, the respondents in the focus group meetings stressed that PFnet has greatly assisted communications of rural people. This point was mentioned by respondents in all the focus group meetings in all the five PFnet stations.

Table 26: How has PFnet helped in your life?

How has PFnet helped in your life?	**Sigana**	**Sasam ungga**	**Hutuna**	**Pirupiru**	**Silolo**	**Total**	**%**
Enhanced my communication with family & friends in Solomon / overseas	35	40	49	41	37	202	80.5
Enhanced my business	7	11	0	6	4	28	11.2
Helped in farming	7	0	0	3	2	12	4.8
Enhanced my awareness of the world	2	1	0	0	0	3	1.2
Enhanced my standard of living	2	0	1	0	0	3	1.2
No response	0	0	1	0	2	3	1.2
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

The results show that the first major impact of PFnet is that it provides quick, affordable, and sustainable communications to rural people (to around 85% of the 450,000 population) where no commercial form of communication service has until now been possible (beyond the nine provincial towns) Liloqula (2000). In particular, PFnet has established a communication network between:

a) Remote villages (on distant islands) and the capital Honiara in Guadalcanal Island,
b) Remote villages and towns in other islands,
c) Remote villages and overseas countries.

These increased communications between places has assisted in reducing the digital divide within and outside Solomon Islands. PFnet has provided the rural population of Solomon Islands with access to easier communication services.

7.2 PFnet services have assisted farmers

The survey results show that 5% of users stated that PFnet has helped them in their farming. Through PFnet email and news services, farmers are able to contact relevant agricultural authorities and NGOs to get information and advice on farming matters. In the focus group meetings, farmers cited the example of their contact with the *Kastom*

Gaden Association, an NGO which gives all types of advice to farmers. More specifically, respondents in the focus group mentioned two examples of how farmers have benefited from the *Kastom Gaden Association.* They are:

> a group of young farmers from North Malaita are able to obtain technical advice from a specialist on poultry diseases,
>
> Subsistence farmers on Rennell have obtained advice concerning taro diseases affecting their crop. Via the 'TEK-websearch' facility, one group of farmers was able to access detailed technical information about vanilla farming and to communicate with a specialist from the *Kastom Gaden Association.*

7.3 PFnet services have assisted existing business activities and also helped create a few new businesses.

The survey results show that business activity was the third major reason for respondents (22.4%) using PFnet services. (See Table 10) Rural businesspeople use PFnet services to develop business customer contacts in Honiara and other towns, find out the price of goods in Honiara, supply stock, order cargo (e.g. rural shops), get farming/agriculture news, find out shipping schedules, liaise with banks for financial transactions, and liaise with government offices in Honiara. For example, Sasamungga area has six village stores and all of them use PFnet email services to order stock and make bank payments. Before the existence of PFnet, the store-owners ordered goods by letter but now they prefer emails because it reduces the time delay. One store-keeper in Sasamungga had this to say:

> The PFnet station in our village has greatly helped me in my business and the whole community around here. In the past, I was not able to get all the stock quickly because letter system took time. Now it is easy. I just send them a list of goods I want through email and it saves time. (Interview with a shop-keeper, 26 January 2004).

Furthermore, when an additional question was asked: 'In what ways has PFnet helped your private life?' 11% of the respondents indicated that it had enhanced their business. When we asked PFnet users about information and communications needs for their careers, 8.8% stated that they needed information about how to make business contacts, 7.6% stated that they needed to communicate with business-related contacts such private companies and business partners, and 4% indicated that they needed to contact overseas buyers and manufacturers. With regard to information and communications needs of PFnet users for 'their private lives', 15.9% said they needed business information and information about business opportunities, 5.2% said they communicated with business partners, 7% said that they needed business-related information but were not able to access it. Some users (1.2%) mentioned the problem with rural finance, recommending that PFnet should set up a system for business people to deposit money when ordering goods.

Table 27 shows the percentage of all outgoing emails sent for business reasons from usage data collected daily over 15 months.

Table 27: Percentage of all outgoing emails sent for business reasons

	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo
Business & investment	2.1%	14.5%	0.6%	11.9%	16.4%
Trading	-	0.1%	0.1%	-	-
Ordering cargo[4]	0.2%	0.2%	27.5%	4.9%	-

Source: User-log monitoring data' recorded over 15 months

The level of business activity differs in the five stations. Hutuna has almost no business activity at all, not even a regular store. Farmers have no access to export commodity markets such as copra, cocoa, etc. This is mainly due to the lack of regular shipping. There is a continuous low level of seafood harvesting, mainly beche-de-mer, with local and foreign vessels calling at various locations along the coast. While the user data show a very low usage for business reasons, there may be indirect business benefits not picked up by the data. However, the lack of business application is not hindering the utilization of the station. Hutuna is the second most utilized of the five stations in terms of communications.

Silolo in populous North Malaita shows the highest business usage in the daily reports data (16.4% of outgoing emails are concerned with business and investment). The researcher who conducted the surveys there commented:

> The villages are mainly subsistence communities selling only a few extra products, such as kerosene and other essential household goods, at the market at very low prices to meet basic needs. Barter is still practised in some instances. Market days are Tuesdays and Fridays at Silolo and Wednesdays and Saturdays at Matakwalao. There are a few canteens in some of the villages along the roadsides from Malu'u Provincial Sub-Station to Taba'a village where a public bus is currently running. Otherwise most of the retail shops are to be found at Malu'u. Coconut and cocoa are still the dominant cash crops. Teak growing has recently gained popularity and many farmers are venturing into it for commercial purposes. Hence more and more people are interested in business and are seeking business opportunities.

It is also worth recalling that Silolo has a very high level of communication with people overseas (54% of outgoing mails). Malaita has rich mineral and other resources, and there is much interest in exploiting them. Communication with overseas business partners, potential and existing, may be a valuable benefit brought by the email service, one which would otherwise not be available at village level.

Pirupiru recorded 11.9% business reasons for outgoing mails. Avis Mamao of Pirupiru relates how he perceives business usage:

> The business owners quite frequently use the email station. For instance, it is now easy to contact their business partners directly. Also business owners have found it easy to check (by email) their bank account balances (NBSI only). In the past they would have to travel by boat to seek banking services at Kirakira. Economic activities currently active on the island are copra, honey, and poultry-farming. The different buyers use the email service regularly to contact their associates in Honiara/Kirakira. One of them has scheduled a boat on a weekly trip to Ulawa through S/Malaita, which has improved shipping to the island.

[4] This is usually villagers requesting consumables and other items to be sent by their relatives from Honiara.

The point about banking must be highlighted. E-banking and payment systems are a major issue. In Solomon Islands, most rural people have access to banks only in the provincial centers. Through the strong lobbying of the village people themselves, one Honiara bank now allows them to check their bank balances by email. The ability to check bank accounts by email (a discretionary service of the National Bank) saves remote islanders time, money and even their lives as it reduces the need for expensive and dangerous open-sea canoe crossings. This is a major step forward.

In Sigana, business users are fewer. The researcher commented on the focus group meetings:

> They never use the station, although they are aware of it. They are also aware that they can make cargo orders to Honiara suppliers but they do not because they cannot send money for the cargo. They suggested a banking system should be set up so that they can pay the money to the bank when they make the orders. They realise that this communication system can cut their cost.

Apart from assisting existing business, there is evidence that PFnet has actually helped create two new business firms. Firstly, in 2003, at Pirupiru, a seafood business company named Dream-time Ltd was formed as result of the owner communicating (by email) to hotels and restaurants owners and arranging a contract to provide them with crayfish, crabs, prawns and fish Otter (2002). The service was aimed at the more affluent residents and the hotel market in Honiara. Customers order by email and then deposit their payments in the bank. The company then verifies the payment has been made before dispatching the order. Secondly, PFnet led to the creation of Solomon Seaweed Company Ltd, a new company which exports seaweed to Japan. Agents for this company are based in each rural seaweed village and they are given private PFnet email accounts and training in communication. This seaweed project is linked to an Online Business Information Service (OBIS), which supplies technical and market information to entrepreneurs and is operated by the Ministry of Commerce.[5] The seaweed project highlights the fact that rural finance is a critical factor connected to the partly subsistence-based economy in rural areas.

In summary, PFnet has led to the emergence of new business in the fisheries and agriculture sectors. Lack of communication for business activities has been one of the main hindrances to the establishment of enterprises in rural areas. Along with poor or no power supply, or sources of credit, PFnet is able to facilitate basic communications access.

7.4 PFnet has increased communication in the education sector

The survey data show that education is the second major reason people use PFnet services (see Table 10). The results show that 36.3%[6] of respondents indicated they use PFnet services for education purposes. The user-log data show familiar findings. The usage data show that 8% of all emails sent over the 15 months were reported as being for educational reasons.[7] The highest was Pirupiru (14%), with Sasamungga (10%), and

[5] See http://www.commerce.gov.sb/IRS/Online_Business_Information_Service_OBIS.htm for the OBIS web site.
[6] This percentage is a total of the first, second, and third ranked answers given by user respondents.
[7] Since operators type the out-going email messages for customers, they are aware of the purpose of the emails and hence record them according. Note that this user-log data is an aggregated data and in no way reveals the identity of users.

the other three stations reporting 2% each. It is important to note that the two stations that report most communications concerning educational use are Sasamungga (where DFL education trials were held) and Pirupiru (where the email station is situated in a school). Leeming (2003a) It is also interesting that in these two locations, the most common educational level of users is college educated.[8]

In the focus group discussions, respondents said they used the PFnet emailing, typing and printing services for their educational needs which are listed below.

1. Parents via email liaise with schoolteachers with regard to questions on enrolment issues and to arrange paying school fees.

2. Parents and children who are attending schools in Honiara or towns liaise with each other about education issues.

3. Parents and children who are attending college or universities in Fiji or other countries liaise with each other about education issues.

4. Distance and Flexible Learning (DFL) students use PFnet to send assignments. For example, students from the University of the South Pacific communicate with the Laucala campus via email. Distance education trials were held using the email system at Sasamungga rural station in 2002.[9] The Solomon Island Ministry of Education recognized its success and this initiative will now be piloted on a national scale Patson, P. et al (2002).

5. School headmasters or principals are using email to contact the education authorities (e.g. The Ministry of Education in Honiara), get curriculum for courses, and solicit donations. Head teachers also use PFnet to communicate with head teachers and government officials in different locations.

6. Schoolteachers liaise with the Ministry of Education in Honiara and vice versa.

7. Schoolteachers use PFnet's typing service to prepare teaching notes and print exam papers. The survey results show that 61% out of the 85 PFnet users who reported using PFnet for secretarial purposes said that they did so to type and print education assignments.

8. The vocational training sector also uses PFnet services. For example, the Rural Teacher Training College is located near Sasamungga station and the head teacher uses the email service to communicate with PFnet Headquarters in Honiara (interview with the head teacher, 15 January 2004).

7.5 PFnet has contributed towards the health sector

The survey results show that around 6% of people use PFnet's services (especially emails and typing) for health-related issues. This point was underscored by participants in the focus group meetings. The main users are doctors, nurses, and health workers

[8] Note that college is interpreted as any type of college, not only formal tertiary institutions.
[9] See http://www.peoplefirst.net.sb/General/Distance_Learning_Research_Interview_Results_files/frame.htm and http://www.peoplefirst.net.sb/Downloads/AMIC.zip,

from different parts of Solomon Islands who use emails to communicate to each other regarding medical results of rural patients, diagnoses, advice on treatment, medicines to be given to patients, and ordering of medicines. For example, in one focus group meeting in Sasamungga, one nurse mentioned:

> We use emails for our daily work. In the past (before PFnet) it took 3 – 4 weeks to get blood test and X-Ray results for patients by post, which came in boat from Honiara. Now with emails, we can get the results as soon as it is known in the lab in Honiara and we can then give appropriate medicine to patients immediately without waiting for a long period. PFnet station has helped us greatly.

All the five stations have rural clinics nearby and in the case of Sasamungga; the PFnet station is located in the health centre building. In the focus group meetings most health workers mentioned that they are using PFnet email services.

7.6 How has PFnet helped in people's careers?

The survey data shows that 19% of the respondents indicated that PFnet has assisted in easier and faster communication with working colleagues in other parts of Solomons Islands, 9% said it enhanced their business and 7% said it helped in their teaching. Furthermore, the PFnet project has led directly to the creation of jobs for 28 operators in rural areas and 2 operators and a webmaster in Honiara. Their average pay is $S500 per month.

Table 28: In what ways has PFnet helped in your career?

Response	**Number**	**%**
Easier and faster communication with family and friends	61	24.3
Easier and faster communication with working colleagues in other parts of Solomons	48	19.1
Enhanced my business	23	9.2
Order construction material quickly	14	5.6
Helped in my teaching	18	7.2
Other	55	21.9
No Response	32	12.7
Total	**251**	**100**

Source: Data from the survey

7.7 PFnet contribution towards conflict prevention, peace-building and reconciliation process after the ethnic conflict

In the focus group meetings, respondents mentioned that PFnet has contributed towards security, peace-building and reconciliation. Respondents mentioned that PFnet provided them with objective and accurate information on the facts during and after the ethnic conflict in Solomon Islands and assisted in reducing the number of false rumors and misinformation. Furthermore, respondents stated that currently PFnet is assisting in the peace-building and reconciliation process by providing objective information through its local news service and access to other independent news sources, both nationally and internationally.

Furthermore, respondents in the focus group meetings said that the PFnet local news service had risen their awareness of what is was going on during the ethnic conflict in Solomon Islands and their awareness of issues relating to human rights. One villager in a focus group meeting in Silolo, Malaita Island said:

> I did not know about what our rights were. When the fighting began and especially when our rights were abused by fighting factions during the ethnic conflict then I began to have some idea of what human rights were. I got some idea from PFnet news service and also when people in the village began to discuss these issues.

7.8 PFnet has assisted non-government organizations (NGOs)

The survey data show that 6% (see Table 10) of the respondents indicated that they use PFnet email services for NGO activities. The local NGO leaders use emails to communicate with their headquarters in Honiara and/or international headquarters. In addition, community organizations and church organizations use emails to communicate with people in Honiara Leeming and Biliki (2003). Focus group interviews revealed that the local church officials use PFnet services quite frequently. For example, the church secretary of the Bible Translation Office in Tanageu, in Sigana, said:

> I on behalf of our church frequently use the PFnet station to communicate with our head office in Honiara for all types of administration jobs.

8.0 ANALYSIS OF PROBLEMS ASSOCIATED WITH OPERATION OF PFnet STATIONS

The operation of PFnet stations in Solomon Islands is not perfect. This research revealed a number of problems the project has faced.

8.1 Problems associated with committees at PFnet stations

As mentioned in the background section earlier, the PFnet structure is a three-way partnership between the PFnet Management (based in Honiara), PFnet Committees (based in each email station in rural areas) and two operators at each station. The first problem facing the email stations is the PFnet Committees not functioning well. The main functions of a committee are given below.

1. To monitor the public usage of the station and promote and publicize the service to raise awareness and maximize public usage.

2. To act as intermediaries to help the community and its component groups to understand their information and communication needs, to help them interpret information sent to the community, and to help them to use the facility.

3. To promote the service to special groups like health workers, education workers, business people, women's groups, church groups, etc.

4. When called on, to hold public meetings on behalf of development partners with guidance from PFnet, to disseminate information and/or to consult the community

and report back opinions and feedback to the development partners. (PFnet Agreement)

The survey results show that 43% of the users indicated that the PFnet committees were not doing their work properly. The worst cases were Pirupiru and Sasamungga, where 94% and 56% respectively of users indicated that the PFnet committees were not doing their work properly. Similar findings were revealed in the focus groups meetings and in interviews with operators of stations, RDVA staff, PFnet Management and some committee members themselves.

Table 29: Do you think the PFnet committee is doing its job properly?

Do you think the PFnet committee is doing the job properly?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Yes	20	1	23	0	10	54	21.5
No	14	29	8	47	9	107	42.6
Not sure	9	21	12	3	20	65	25.9
Others	1	1	1	0	5	8	3.2
No response	9	0	7	0	1	17	6.8
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

Furthermore, the survey results show that 89% of all the respondents reported that they were not aware of any public meeting held by the PFnet committee in their village. Similarly, in the focus groups meetings, almost every respondent mentioned that the PFnet committees are not functioning. These results indicate that PFnet committees are highly inactive, particularly in Sasamungga, Pirupiru and Silolo stations.

Table 30: Does your PFnet committee meet regularly?

Does your PFnet committee meet regularly?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Yes	13	0	10	0	1	24	9.6
No	31	52	17	50	40	190	75.7
No response	9	0	24	0	4	37	14.7
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

This finding was confirmed by a sample of 21 PFnet committee members themselves. The results show that 90% of them agreed that they rarely met. This view was common in all the five stations. This situation is regrettable as the PFnet model is founded on community ownership, management and participation. The main reason the committees are not functioning well is that the members stated that they do not get any financial benefit or allowance for doing such a job. A personality conflict between committee members is another problem.

Table 31: How often does the PFnet committee meet?

How often does the committee meet?	Sigana	Sasamungga	Hutuna	Pirupiru	Silolo	Total	%
Whenever the need arises	0	1	1	0	0	2	10.0
Rarely	6	2	4	5	1	18	90.0
Total	**6**	**3**	**5**	**5**	**1**	**20**	**100**

Almost 38% of the respondents stated that the PFnet committees should run awareness programmes. Never used respondents mentioned that they do not know about PFnet services and the PFnet committees should make people more aware in order to get more customers.

8.2 Problems associated with PFnet operators

During the research, there were some complaints about the work done by operators. Although, a high proportion (87%) of user-respondents indicated that station operators were doing their jobs properly, a small proportion (13%) had some complaints. The main complaints were: operators were slow in forwarding urgent in-coming emails; they were not typing the message accurately; they were not present at the station during working hours or were late, refusing to open the station after hours in cases of emergencies; and they were breaking the confidentiality rule (this confidentiality issue is discussed in depth below).

Table 32: Are the operators doing their work properly?

Do you think the operators are doing their job properly?	Sigana	Sasam ungga	Hutuna	Pirupiru	Silolo	Total	%
Yes	43	52	47	47	30	219	87.3
No	1	0	0	0	7	8	3.2
No, delays in forwarding us urgent emails	3	0	0	1	0	4	1.6
No, not at the station during working Hours	2	0	0	0	1	3	1.2
Not sure	3	0	0	1	1	5	2.0
Others	0	0	1	1	5	7	2.8
No response	1	0	3	0	1	5	2.0
Total	**53**	**52**	**51**	**50**	**45**	**251**	**100**

8.3 Problems associated with technical aspects of PFnet services

Some respondents complained about the technical problems of PFnet services. These include: computer out of order, radio (via which message is sent) not working properly, and delay in receiving the messages.

8.4 Suggestions given by respondents on how to improve PFnet services

The user-respondents were asked to provide some suggestions for improvements and Table 33 shows the results.

Table 33: Suggestions to improve PFnet services

How can PFnet services be improved?	**Sigana**	**Sasa mungga**	**Hutuna**	**Piru piru**	**Silolo**	**Total**	**%**
Run awareness programmes, particularly by PFnet committees	15	21	6	42	11	95	37.8
Have a special place for the email station, more spacious, a room for emailing	13	4	8	0	7	32	12.7
Additional computers	1	6	20	1	2	30	12.0
Train people how to use email	3	2	7	4	4	20	8.0
Establish a new committee, representatives from all villages. Committee to meet on regular basis	0	14	0	1	3	18	7.2
Establish a station at the other villages	2	3	4	1	7	17	6.8
More radios, have TV, scanner, fast printer and other services	6	0	2	0	3	11	4.4
Have someone deliver emails	6	0	1	0	1	8	3.2
Install Internet services	2	1	1	0	4	8	3.2
Establish a bank to use for ordering cargo from Honiara	2	0	1	0	0	3	1.2
PFnet committee members should have ID	1	0	0	0	1	2	0.8
Use of PFnet for distance learning must be promoted	0	0	2	0	0	2	0.8
Operator must be confidential	0	1	1	0	0	2	0.8
Change system from HF to digital for faster communication	0	1	0	1	0	2	0.8
Provide villagers with mail boxes in the station	1	0	0	0	0	1	0.4
Total	**52**	**53**	**53**	**50**	**43**	**251**	**100**

More than a third of the respondents indicated that PFnet committees should run awareness programmes. Around 13% of the respondents stated that the PFnet station should be housed separately and not be part of the health clinic or church. They also wanted the station to be more spacious and to have a separate room for writing messages. Another 12% stated that more computers were needed, as people often have to wait for a while due to the small number of laptops at the moment. 8% wanted the PFnet committee to run training programmes for the villagers so that they learn how to send and receive mails on their own.

In the focus group meetings, the following suggestions were made:

there should be more that one operator, with shift hours, so that someone is at the station all the time;

office hours to be clearly displayed on the station door;
operators should not provide free service to their family and friends;

operators should have transport to deliver urgent emails;

operators should always be confidential and send accurate messages;

there should be more awareness programmes to inform people of PFnet services; and

Operators should be trained on customer service and should train people how to use email.

These results indicate that much more work is needed on the part of the PFnet committees and the operators in order to increase the uptake and utilization of PFnet services.

We now move to examine the second broad (main) aim of PFnet services which is the impact of it on sustainable rural development in Solomon Islands.

9.0 BENEFITS ACCRUED BY THE RESEARCH

9.1 Capacity building of researchers

One of the goals of the USP/ICT Project based at USP is to build research capacity of USP scholars and South Pacific Island Officials in the area of ICT. This research itself has contributed to capacity building of personnel involved in carrying out the research. The following people have benefited: the principal researcher, the co-researchers, RDVA staff, PFnet management staff, PFnet junior staff in Honiara, operators in the five stations, committee members in the five stations, research assistants, data entry students at USP, and finally the sociology secretary.

9.2 Increased awareness of PFnet services

In addition, the research process brought awareness to people in villages who did not know about PFnet services. By conducting this research and soliciting feedback from users and involved stakeholders, ownership of the project by the communities has been increased. The research process was a major activity in each of the five stations, which led to further awareness of PFnet and the types of services it provides.

It needs to be noted, however, that it is essential to communicate back to the communities the major research results and suggested follow up actions. This will bring home to the communities that their feedback is essential and that PFnet will act on the lessons it learns.

10.0 RECOMMENDATIONS

Based on the research findings, the researchers formulated the recommendations listed below for stakeholders to consider. The recommendations are divided into two parts: one set of recommendations are for the PFnet management and second set are for donor agencies and governments.

PART 1: RECOMMENDATIONS FOR PFNET MANAGEMENT.

Most of the recommendations in this report are for the PFnet management. These recommendations were discussed with the PFnet management and since three of them were part of the research team they understood the major problems and agreed with the recommendations.

10.1 Need for extensive consultation prior to establishment of PFnet stations

1. The PFnet management should hold extensive consultations with various stakeholders, namely village leaders, elders, etc. in the surrounding villages before setting up the email station in the area.

2. Although PFnet has a current practice of consulting village leaders, these consultations are not extensive enough to iron out all the issues. For example, a result suggests that PFnet stations should not be located within the church or medical centre, but separately.

10.2. Selection and monitoring the performance of PFnet station committees members by PFnet management

Committee members should be selected on merit, and also their interest and ability to spend time doing work for the PFnet station.

For example, each PFnet committee should have at least one representative from each of the surrounding villages. Also representatives should be selected from a wide cross-section of the community, such as elders, young people, students, teachers, medical personnel and, if possible, with gender balance.

1. The PFnet Management needs to monitor the functioning and performance of PFnet station committee's members.

2. The research results show that most committees are not functioning properly or are defunct. Clear responsibilities should be provided to committee members and operators on what they are expected to do. Furthermore, PFnet Management from Honiara needs to encourage and motivate the committee members to hold regular meetings, explaining issues such as types of PFnet services, advantages of using it, ownership of PFnet, etc.

3. There should be guidelines established on action to be taken by PFnet Management if PFnet station committees do not hold meetings as required under the agreement or if members do not attend. For instance if a member does not attend a certain number of meetings, he/she will cease to be a member.

4. The committee members should be designated some specific tasks. A public notice, detailing which PFnet member is responsible for which task should be placed on the PFnet station notice-board, e.g. Mr. XX for confidentiality breach, Ms. YY for training.

5. The PFnet committee should look into means of transporting urgent messages to people's homes. It was suggested in the study to recruit volunteers, train them on confidentiality and roster them in an organized manner for this task.

6. The PFnet Management needs to review the revenue-sharing arrangement with PFnet station committees and operators.

7. To assist the committee, some funds should be allocated to pay for the cost of transportation and refreshments. Committee members should have an incentive to sit in meetings and do work for the station. Also, some financial incentive needs to be given to the chairperson and committee members to be more active. This could be a commission or bonus-based.

8. For each station, the PFnet Management needs to appoint a contact person in Honiara who is from the village in which the station is situated to assist with PFnet work. The person must be a respectable person and have some influence in his or her rural community.

9. For example, in the case in Bellona station which was recently set up, PFnet Management has established a Honiara contact that is originally from Bellona but living and working in Honiara. PFnet Management utilizes him to talk to people in the station such as the operator, committee members, etc.

10. The contract agreements between PFnet Management and station committees need to be reviewed and modified on an annual basis to take into account new developments, roles and PFnet services.

10.3 Training of PFnet station committee members and operators on their functions and responsibilities

1. The PFnet Management needs to train PFnet station committee members and operators on their functions and responsibilities at least once a year.

2. An annual training programme for PFnet committee representatives should be introduced, possibly in Honiara, with representatives from all PFnet stations attending together. This meeting will also enable them to share information with each other. The training should have components dealing with finance, management and conflict resolution to empower members to better handle adverse situations in future.

3. Regular training should be conducted to strengthen the capacity of poorly educated operators. Exchange programmes should be conducted among the many PFnet stations to create a network, and to motivate and expose them to different backgrounds, environments and cultures. Training should also focus on people's skills in basic management, journalism, accounting, etc. These are issues that they should have some knowledge of, in addition to ICT skills.

10.4 PFnet operators and station committee members need to work closely together to iron out problems and better deliver services to the people

1. Operators should be selected on merit. Guidelines should be clearly identified by the PFnet Management and followed by the PFnet station committee members for the hiring process of an operator. This should be transparent to avoid nepotism and resentment by others due to this.

2. The PFnet committee members and the operators need to work closely with each other to promote the station's services.

3. Operators should be members of the PFnet station committees in order to be more pro-active in raising awareness, accountability and ownership.

4. Operators must be available at the email stations at the designated times.

5. The research results show that some operators do not open the station on time or are absent in working hours. Operators could be rostered to provide services for extended hours. Two or more operators could be recruited and rostered to prevent the PFnet station being closed during opening hours. Furthermore, operators should open the station when there is an emergency request for service.

6. Operators should be regularly reminded about confidentiality.

7. The research results show that some respondents were afraid that confidential material would be leaked to the community. Clients should be made aware that if there is a breach of confidentiality, there is a complaint procedure. The PFnet committee needs to take action when this happens. Procedures should be set up such that a certain number of proven breaches will lead to termination as an operator.

8. Operators should take an active role in promoting awareness programmes in their locality. They should be well versed with PFnet services and hence well placed to conduct the awareness programme.

10.5 Promoting business activities

1. PFnet services should be promoted for business activities so as to help people earn a livelihood. It is expected that business applications will drive up the utilization even further. PFnet should therefore examine ways of stimulating business usage, perhaps by raising awareness and training people in new ways of accessing information and opportunities.

10.6 Encourage more women to use PFnet services

1. More women should be encouraged to use PFnet services. PFnet management must target women and raise women's awareness to use the services.

PART 2: RECOMMENDATIONS FOR DONOR AGENCIES AND GOVERNMENTS.

10.6 Further Replication of PFnet within Solomon Islands

1. It is recommended that the PFnet project could be further expanded to islands with currently does not have PFnet Stations. Relevant stakeholders should be carried out before any decision is made.

10.7 Replication of PFnet to the South Pacific

1. It is recommended that the PFnet project could be expanded to other South Pacific Island Countries. However, proper consultation with government authorities and other stakeholders should be carried out before any decision is made. Furthermore feasibility studies should be conducted before a decision is made to expand this to the other South Pacific Island Coutries

11.0 CONCLUSION

This research has examined the impact of internet (the PFnet project) on the lives of grass-roots people in Solomon Islands. Firstly, the research examined the extent of access and utilisation of PFnet services and in particular examined the main issues affecting community uptake and appropriation of PFnet services, reasons for low usage by women, and reasons for differences in utilisation amongst the email stations. Secondly, the research examined the impact of PFnet services on the lives of grass-roots people and in particular the issues such as whether the PFnet project has improved the lives of rural people, which groups in the communities have benefited most, whether it has brought about environmental awareness and sustainable resource management, whether it has improved the well-being (including health and security) for people in PFnet project communities and whether it has in any way contributed towards peace-building and reconciliation after the ethnic conflict. The research findings show that PFnet has assisted in reducing the digital divide, assisted communications for rural villagers, helped farmers through receive agriculture information, assisted NGOs, enhanced business activities, find out shipping schedules, liaise with banks for financial transactions, liaise with government offices in Honiara, assisted in education and finally assisted in health-related issues.

To sum up, the results show that PFnet has reduced the digital divide via increased communication between Solomon Islanders people living in rural and urban areas.

REFERENCES

Leeming, D. (2003a). *Education through Wireless Networking in Solomon Islands*. Asia Media Information and Communications Centre AMIC. 12th Annual Meeting, Singapore, Nov 2003. Retrieved from www.peoplefirst.net.sb/downloads/amic.zip on 20 May 2005

Leeming, D. (2003b). Input Paper for the Solomon Islands People First Network, World Summit on the Information Society, Tokyo Regional Meeting, Jan 2003. Retrieved from http://www.wsis-japan.jp/documents/ngo_10.pdf on 20 May 2005

Leeming, D. & Biliki, R. (2003). *Final report People First Network, the Solomon Islands' Rural E-mail networks for Peace and Development* (Interim Assistance Project SOI/02/004). Retrieved from http://www.undp.org.fj/documents/ICT4DEV/PFnet_Final_Report.pdf on 20 may 2005

Liloqula, R. (2000). Understanding the conflict in the Solomon Islands as a practical means to peacemaking, *Development Bulletin* 53: 41-43.

Otter, M. (2002). *Solomon Islands Human Development Report: Building a Nation*. Windsor: Government of the Solomon Islands/UNDP.

Patson, P. Taniveke, P. Leeming, D. Agassi, A. and Biliki, R. (2002). *Final Technical Report.* Sasamungga Distance Learning and Research Project, Rural Development Volunteers Association. Report to Project S006. Retrieved from www.peoplefirst.net.sb/General/Distance_Learning.htm#latest on 20 May 2005.

People First Network web pages (2005). Retrieved from www.peoplefirst.net.sb on 20 May 2005.

People First Network Video of an email station setup in Silolo village in the Solomon Islands (duration: 14 minutes). Retrieved from http://www.peoplefirst.net.sb/Downloads/PFNET_Solomon_Islands.wmv on 20 May 2005

Stork, E. (2002). *Enhancing People's Participation in the Pacific through the Usage of ICT's*. UNDP. Retrieved from http://www.undp.org.fj/documents/ICT4DEV/EnhancingPeopleParticip.zip on 20 May 2005

Stork, E. (2004a). *E-Pacifika Solomon Islands Mission Report*. UNDP Fiji website. Retrieved from http://www.undp.org.fj/documents/ICT4DEV/ePac on 20 May 2005 SOI mission Report. PDF.

Stork, E., (2004b). *Formulation Mission Report* UNDP PFnet Replica Project Vanuatu: Port Vila, Tanna, Espiritu Santo, and Malekula. 4th April -16th April 2004. UNDP Fiji web site. Retrieved from http://www.undp.org.fj/Strenghtening_Community_Access_to_Information.htm on 20 May 2005

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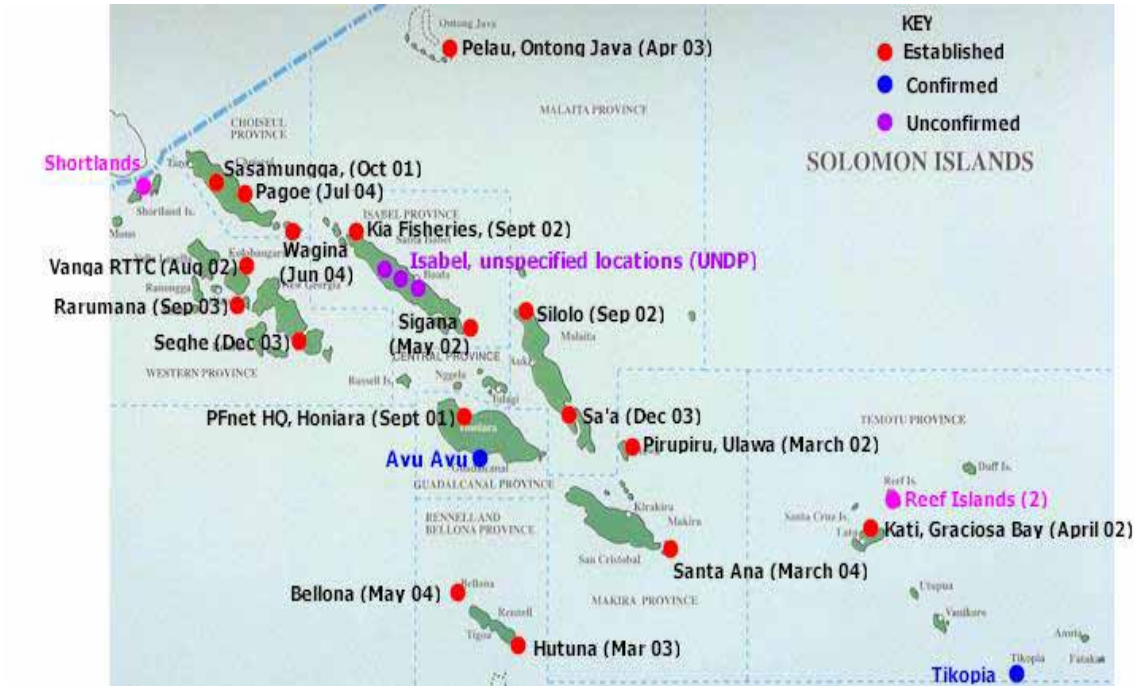
Stork, E., Leeming, D. & Biliki, R. (2003). *The Electronic Journal on Information Systems in Developing Countries.* Solomon Islands ICT Strategy Workshop Report. Retrieved from http://www.is.cityu.edu.hk/research/ejisdc/vol12/v12p5.pdf on 20 May 2005. On UNDP Fiji website: Retrieved from http://www.undp.org.fj/documents/ICT4DEV/ICT_Workshop_report_Feb_03-no-photos_vs2.1.zip on 20 May 2005

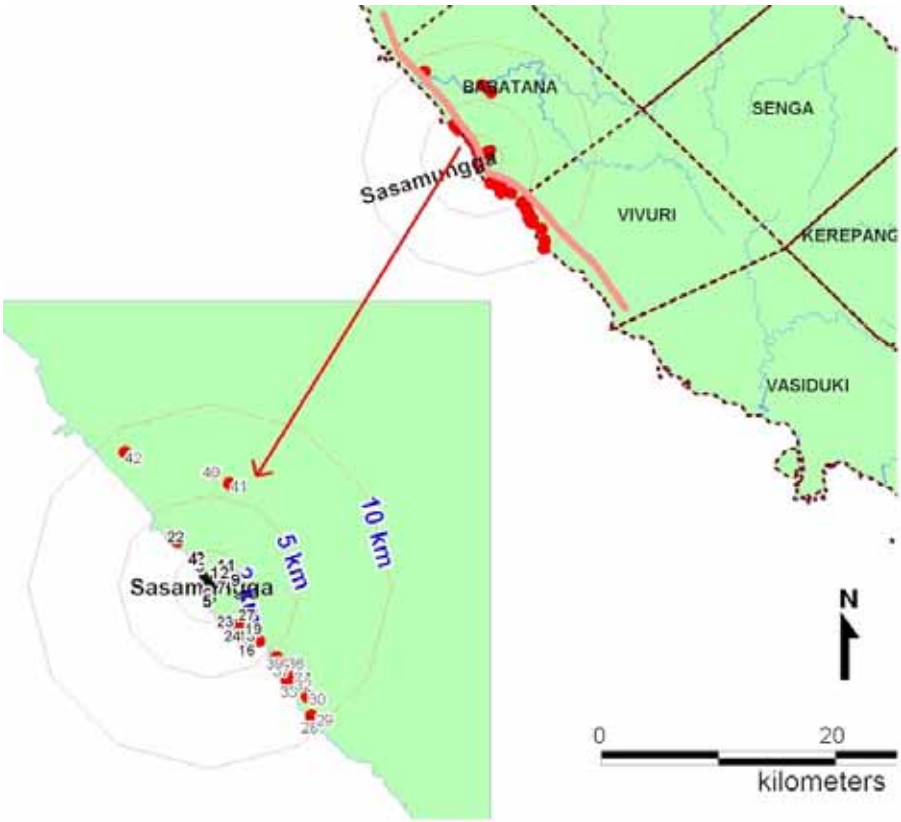
APPENDICES

Appendix 1: Map of all the PFnet Stations



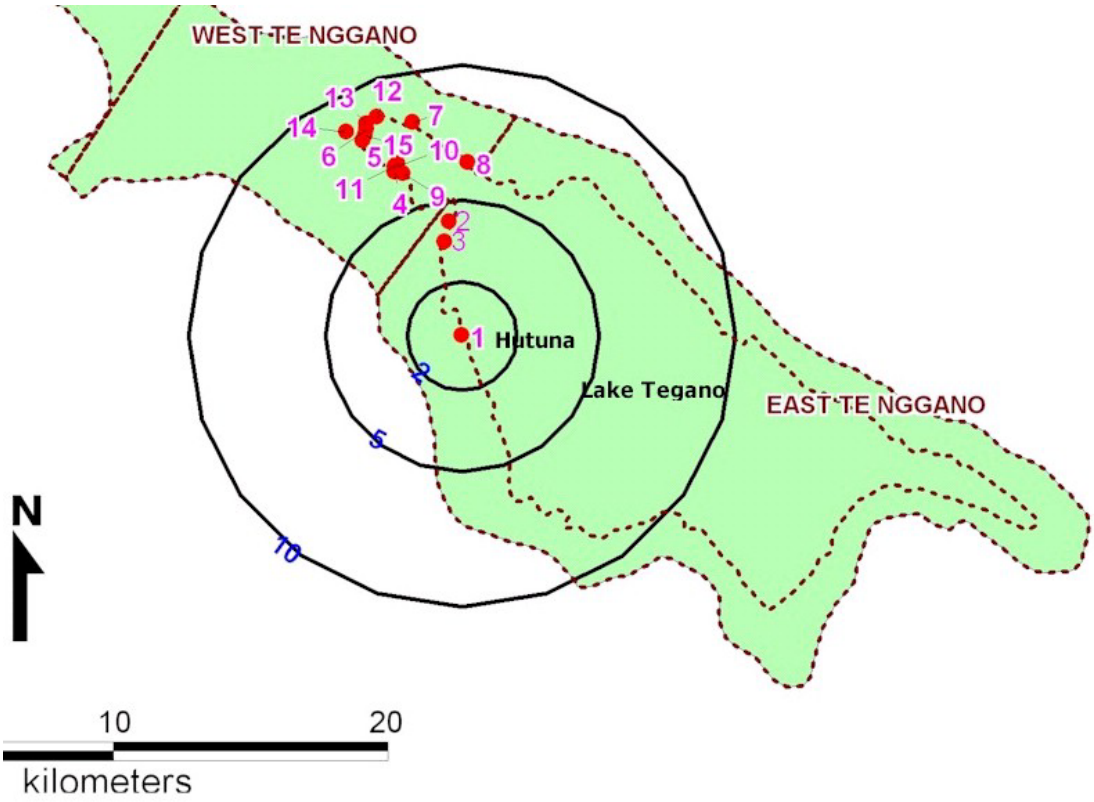
Appendix 2: Maps of each station with population distribution

Sasamungga



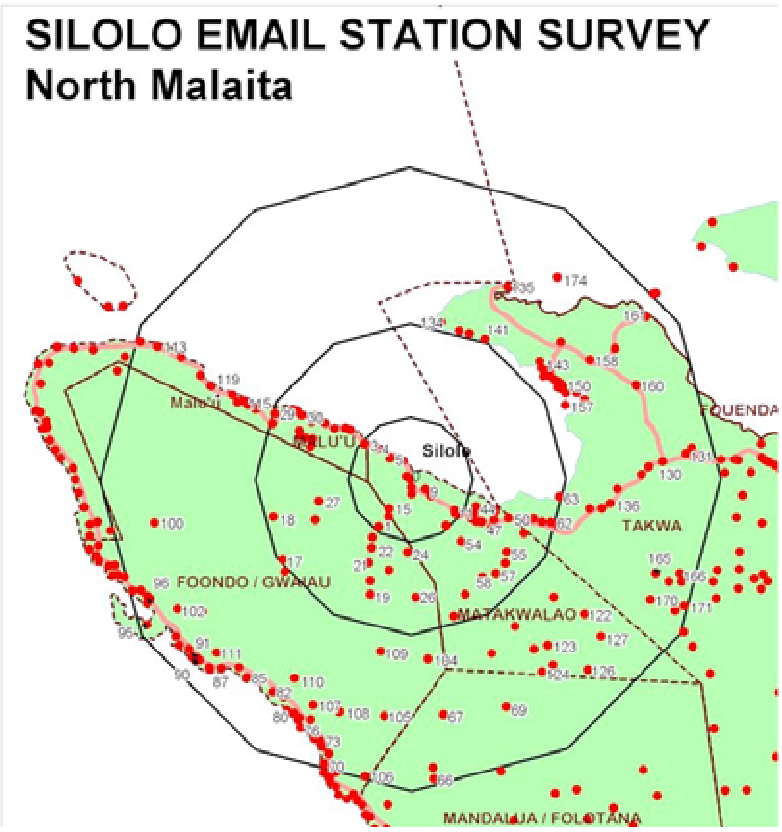
Hutuna


MATAHENUA
Bellona Island (Mungiki)
NGONGONA
MATANGI
KANGUA
TINGOA
TAHANUKU
KANAVA
MATANGI
LAVANGGU
KANGAVA
TEBAITAHE
NIUPANI
LUGHUGHI
Rennell Island (Munggava)
TENGGANO
HUTUNA
Lake
Tenggano
East Rennell World Heritage Site

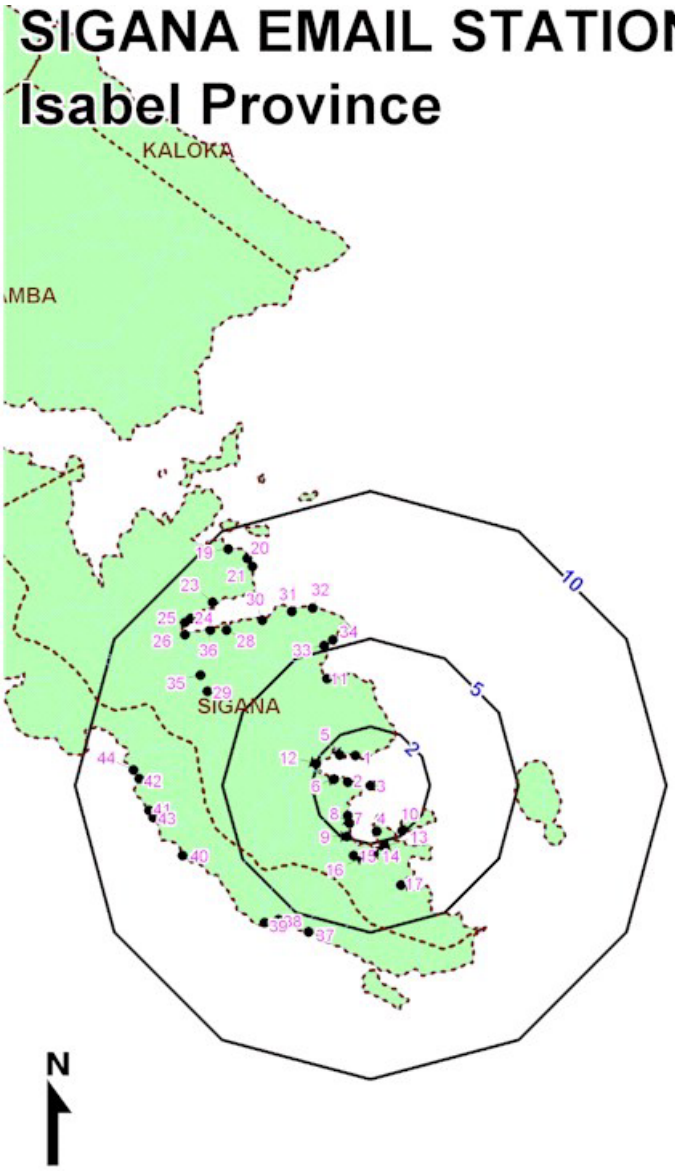

WEST TE NGGANO
13
12
7
14
6
5
15
10
8
11
4
9
2
3
1 Hutuna
2
5
10
Lake Tegano
EAST TE NGGANO
N
10
20
kilometers

Silolo

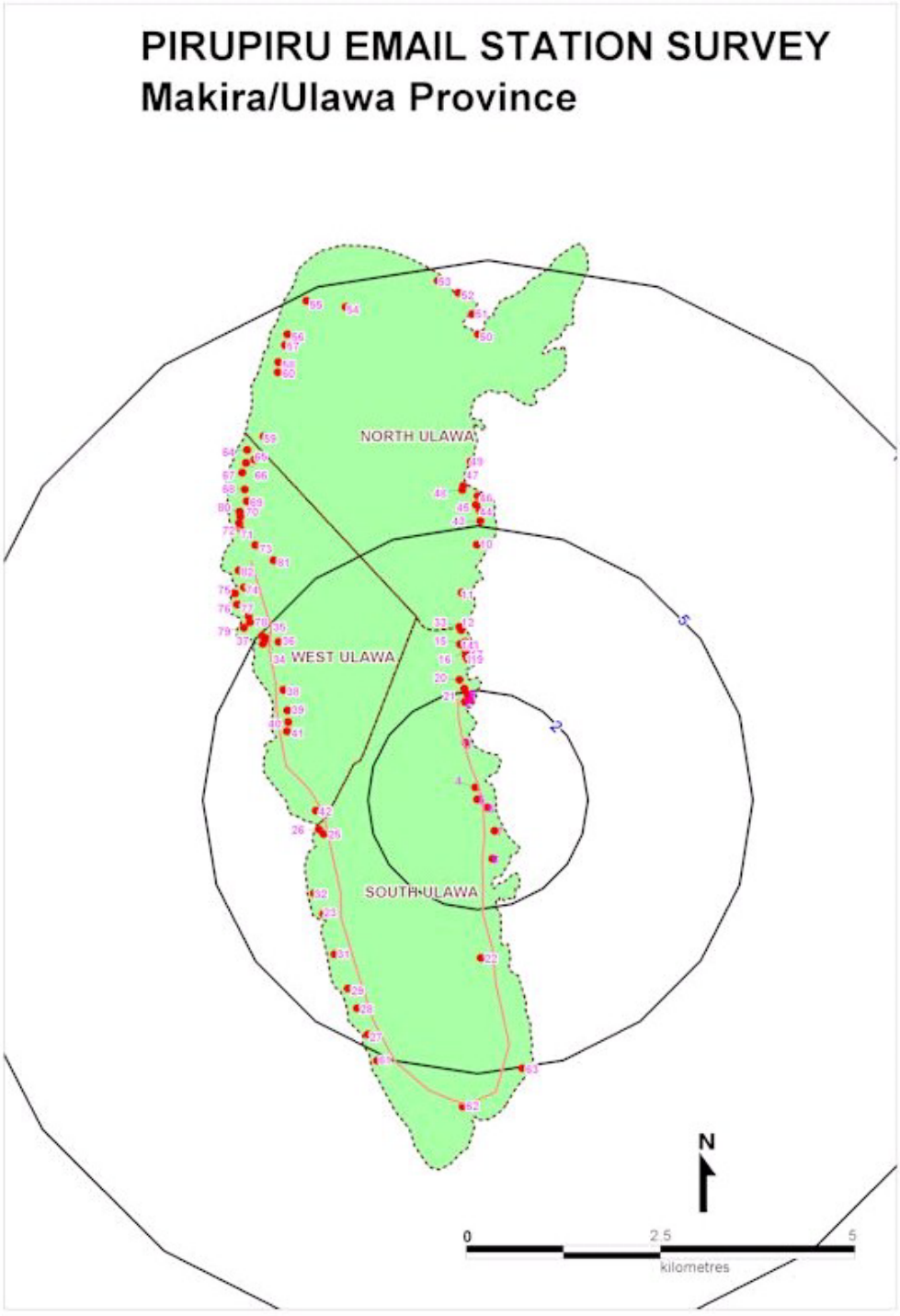

Expedia
MapPoint
PACIFIC OCEAN
PFnet Silolo
Malu'u
Coleridge Bay
Cape Ritters
Fiu Bay
Auki Harbour
Auki
ALITE ISLAND
MALAITA
Indispensable Strait
Takanakafo Bay
Sinalanggu Harbour
Fandindi Point


SILOLO EMAIL STATION SURVEY
North Malaita
Silolo
MALU'U
FOONDO / GWAIAU
MATAKWALAO
TAKWA
MANDALUA / FOLOTANA
FOUENDA

Sigana


SIGANA EMAIL STATION SURVEY
Isabel Province
KALOKA
MBA
SIGANA
10
5
2
N

Pirupiru


PIRUPIRU EMAIL STATION SURVEY
Makira/Ulawa Province
NORTH ULAWA
WEST ULAWA
SOUTH ULAWA
5
2
N
0
2.5
5
kilometres

APPENDIX 3: Sample Agreement of RDVA, PFnet Committee and Operators at each station

Definitions

People First Network (PFnet)

The People First Network is an Information and Communications Technology (ICT) project implemented by the Rural Development Volunteers Association.

Rural Development Volunteers Association (RDVA)

The Rural Development Volunteers Association is an association registered as an independent non-profit organization, but affiliated to the Rural Development Division (RDD) of the Ministry of Provincial Government and Rural Development (MPGRD). RDVA will work closely with RDD to implement rural development projects such as PFnet.

Donor

This facility is funded by ----------.

The (station name) Email Management Committee is a management body identified and appointed by the Community or Communities who will benefit from the Services provided by the Email Station. The Committee fully represents the Community and its members are leaders of each sector of the Community, such as Education (school), Health (clinic), Women, Youth, Church, and may include a representative of a project or NGO active in the area.

Committee members:

Note: All are in (station name) unless indicated otherwise.

The Email Station Operator

Under this partnership agreement the Email Operator is referred to as the OPERATOR. The Operator (or Operators) is (are) identified and chosen by the Community and should have some basic computing, secretarial/typing skills or attained a reasonable level of education (Form3 and up) and has the right attitude to learn new skills and must be trustworthy. The Operator is an employee of the Committee. The Chairman or a member should not be the operator. This allows independent decision making by the Committee in regards to disciplinary of the Operator and any matters arising from the stations operation. The Committee will nominate a Main Operator who will manage the assistant operators.

Nominated Operators:

Main Operator:

Assistant Operators:

The Agreement
This is an agreement between the Rural Development Volunteers Association (RDVA) represented by PFnet and the PFnet (station name) Email Management Committee (hereinafter called the Committee) on the installation and operation of a PFnet rural email station located at (station name). The signatories of this agreement shall be referred to herein as the Partners.

This agreement covers the location, security, roles and responsibilities of the Partners and operational management of the email station.

Duration

This agreement and Committee membership shall be in force for period of twelve months from _____ to _____, after which operations will be reviewed by the parties involved with the project.

RDVA/PFnet agrees to:

1. Supply and install the email station equipment,
2. Train the operator,
3. Hold a meeting to educate the Committee about the email station,
4. Hold public meetings to raise awareness about the service,
5. Provide technical support to the Operator by radio and other means,
6. Keep the station supplied with consumable items required for operations,
7. Publicise the service in Honiara,
8. Manage and advise the station operator,
9. Update and inform the Committee as necessary,
10. Guide and advise the Committee when it is called on to mediate in community consultations and/or information dissemination on behalf of development partners,
11. To supply monthly revenue disbursement information to assist the Treasurer and Operators to manage the revenue sharing.

The Committee agrees to:

1. Provide secure premises for the email station including mounting of the antenna
2. Identify/nominate suitably skilled persons to operate the email station at all times
3. Ensure only the designated Operator (s) and people authorized by the Committee (and agreed by PFnet) are allowed to access, use and operate the email facilities which include a Laptop, Printer, Trans-receiver, HF Modem and Solar Power System. (Donor may instruct RDVA to advise the (station name) Committee to utilize the equipment in other ways as it sees fit).
4. Agree leave with the Operator and nominate temporary replacement staff to cover absence of the Operator during leave.
5. Oversee & monitor the operation of the station to ensure that the Operator carries out the agreed duties,
6. Advice & caution the Operator as appropriate where services and duties are not carried out as agreed,
7. Monitor the public usage of the station and where appropriate promote and publicise the service to raise awareness maximize the public usage
8. Assist the Operator in collecting grassroots news reports to send to PFnet
9. Promote the station and ensure that all sections of the public have access
10. Monitor the security of the station and ensure that it is protected at all times from damage or loss
11. Notify the PFnet Manager of any problems and comment on the operations, and provide suggestion as how the service may be improved.

12. When a Committee member is travelling to Honiara and is able to visit the RDVA Office, he/she should contact the PFnet Manager to hold a face-to-face meeting to exchange information and ideas.
13. The Committee members & Operators are entitled to join RDVA and are encouraged to do so.
14. Encourage interest and raise awareness of school students of the email system and ICTs in general.
15. To act as intermediaries to help the community and its component groups to understand their information and communication needs, to help them interpret information sent to the community, and to help them to use the facility.
16. To promote the service to special groups like health workers, education workers, business people, women's groups, church groups, etc.
17. When called on, to hold public meetings on behalf of development partners with guidance from PFnet, to disseminate information and/or to consult the community and report back opinions and feedback to the development partners.

The Committee Treasurer will:

1. Hold the cash revenue of the station
2. Calculate the monthly allowance and pay the operator (PFnet will send summary sheet)
3. Calculate the share of revenues payable to the Committee and keep accounts (PFnet to confirm)
4. Calculate the share payable to RDVA and hold these funds until they can be safely transferred to PFnet management in Honiara on any immediate but secure means.

Location

The station will be located at (station name), in a building provided by ----------.

Services

The station will provide the following services:

1. Send email ($2)
2. Receive email (50c/additional page printed)
3. Typing letters and documents ($5/page)
4. Internet Searching using TEK (web search) requests ($5 per request plus $10 per hour browsing results with operator assistance, 30 minutes free)
5. Print out news reports received from PFnet ($3 for 6-page issue or 50c/page)
6. OBIS Services ($15.00 for online business information, $50 for web page adverts on Commerce website)
7. Message delivery notification (free – system is not guaranteed)
8. Printing documents (50cents/page or $3/page for colour)
9. Private Email accounts ($75 / month)

The email station will also be used to provide free community information including latest weather reports, and to collect and disseminate opinion and grassroots news via PFnet, free of charge.

Duties of Operator

1. The Operator will have the following duties:
2. Open the email station during agreed opening hours,
3. Provide the services as above,
4. Collect local news stories for PFnet and display news reports received from PFnet
5. Keep a daily log of email sent/received, other services and revenue
6. Send the daily log to the PFnet Manager by email every working day
7. Make a monthly report for the Committee and email a copy to the PFnet Manager
8. Manage cash and transfer to Committee Treasurer at regular intervals
9. Maintenance: look after PFnet equipment, keep it secure, update anti-virus whenever update disks are received from PFnet, inform PFnet in advance when consumables need to be restocked, etc.
10. Make sure that PFnet equipment and consumables, including the computer, paper, printer and radio are only used for Email Station operations. PFnet will not replace paper and ink that has been used for other purposes.

Opening hours

The Station will be opened for public use during hours which best suit the community. The Operator may be occasionally required to transmit and receive email out of these hours, including weekends for example if a large data file needs to be sent, or in an emergency, or at the discretion of the Operator and the Committee.

Operator Allowance

On the last day of each month, the Treasurer will calculate the Operator's allowance. This will be calculated from the total revenue for that month as follows:

Revenue is less than $300……100% of Revenue
Revenue is greater than $300……$300 plus 30% of surplus
(rounded to nearest dollar)

Examples:
Revenue = $731 ……Allowance = $300 + 0.3 x (731-300) = $429
Revenue = $345 ……Allowance = $300 + 0.3 x (345-300) = $314

Revenue = $215 ……Allowance = $215

There will be no paid leave granted to the Operator. If another person fills in for the Operator due to sickness or other absence, the monthly allowance will be shared according to the number of days worked. This allowance calculation will be reviewed and a new agreement made after three months.

Committee and RDVA Share

On the last day of each month, the Treasurer will calculate the Committee's share. This will be calculated from the total revenue for that month as follows:

Revenue is greater than $300……30% of surplus
(rounded to nearest dollar)

Examples:

Revenue = $731 ……Allowance = 0.3 x (731-300) = $129

Revenue = $345 ……Allowance = 0.3 x (345-300) = $14

Revenue = $215 ……Allowance = $0

The Committee is strongly advised to hold its share as a fund for future maintenance costs including equipment replacement or repair. *However, the Committee may use its discretion to use its share to help promote the services of the Email and enable the Committee to function.*

The RDVA will receive the balance (i.e. 40% of the surplus over $300) to be used for maintenance of the email Station Operations. All such revenue from rural stations is deposited in a maintenance fund.

Revenue Collection for PFnet

The Operator will hand over the cash from sales to the safe-keeping of the Treasurer. The Treasurer will write a receipt.

On the last day of each month, the Treasurer will pay the Operator the calculated allowance based on the month's revenues. The Treasurer will calculate (with advice from PFnet) and record the share payable to the sub-committee and the balance payable to RDVA. PFnet will send the monthly statistics and shares payable for all email stations, in a summary.

The Committee will hold the RDVA balance and transfer the funds as soon possible. The best way will to be deposit it in the NBSI in Gizo when it is convenient, or send with a reliable courier to PFnet by plane, and to advise PFnet by email when it is being sent.

The PFnet Maintenance Account details are:

Bank: NBSI
Name: People First Network (PFnet) Maintenance Account
Number: 01 909342 03026

The PFnet Manager will monitor the usage and revenues from Honiara. It is possible to verify the number of emails sent from and received by each Station, and these records should agree with the daily log sent by the operator.

Confidentiality

Because the operator has to type in the messages, she will be party to confidential information. The contents of messages sent by customers are not in any circumstances to be divulged. If the Committee or PFnet receives complaints that private information has been divulged and the indiscretion of the operator is deemed to be the cause, the Committee will consider what disciplinary action to take, which can include dismissal.

For this reason, the Committee ad Operators must discourage children and curious onlookers from entering the email room and observing the Operator whilst at work.

Messages received by the station are printed out and sealed by folding and stapling to be stored in a safe box awaiting collection. The operator does not need to, and will be required not to read these messages unless requested by the person it is addressed to.

Equipment Replacement and Repair

Where equipment fails under normal conditions, PFnet will try to replace the equipment using its maintenance fund. PFnet will also expect the Committee to contribute through its own savings

and through community contributions raised through fund raising, etc. However, this is dependant on the available budget and PFnet can make no guarantee. Therefore it is in the best interest of the community to protect and look after the facility. These procedures in this agreement have been designed to minimize the risks of equipment failure.

Loss, Theft and Malicious Damage

In the case of equipment being stolen, maliciously damaged or otherwise lost from use through non-accidental means nor wear and tear, it is the responsibility of (station name) Email Committee to

Report all such loss or damage to PFnet Manager using the quickest available means of communication, including the circumstances and items lost or damaged,

Report all losses to the Provincial Police,

Make all possible efforts to locate and restore stolen equipment,

Raise the replacement cost of any stolen and/or damaged equipment, including the cost of travel, and other installation expenses (PFnet will assist using funds from its maintenance account as budget allows)

PFnet will only consider assisting the Committee to restore the station following such losses when the police enquiry has been successfully completed and the culprits identified and punished, so that the threat of any repeat criminal activity is diminished. It will also depend on the positive outcome of a security assessment of the community locale.

Access

Under the partnership as laid down by this agreement the (station name) Email Station is a public facility allowing all people to have access to the email facility, including visitors. Access to the station must be provided at all times without prejudice or discrimination resulting from church affiliation, ethnic grouping or gender. The Committee should especially encourage women, young people and vulnerable groups to utilize the facilities.

Ownership and Conditions for Delivery of PFnet Services

The email station equipment has been donated to (station name) village by Japan to deliver email and other services. The equipment can only be removed or moved with agreement of the donor and Committee. However, connection to the PFnet network and thus to the Internet email will only be allowed if all the conditions in this agreement are met. RDVA reserves the right to disconnect PFnet (station name) if any of these conditions specified in this agreement are not met.

Reconnection of services in an event of any disconnections may only take place through a renegotiation process leading to the re-signing of this agreement.

Signing

The Parties herein agree to honour the duties and responsibilities outlines above and carry them out in the spirit of cooperation to ensure the success of the PFnet email Station and the benefits to the people of ----------.

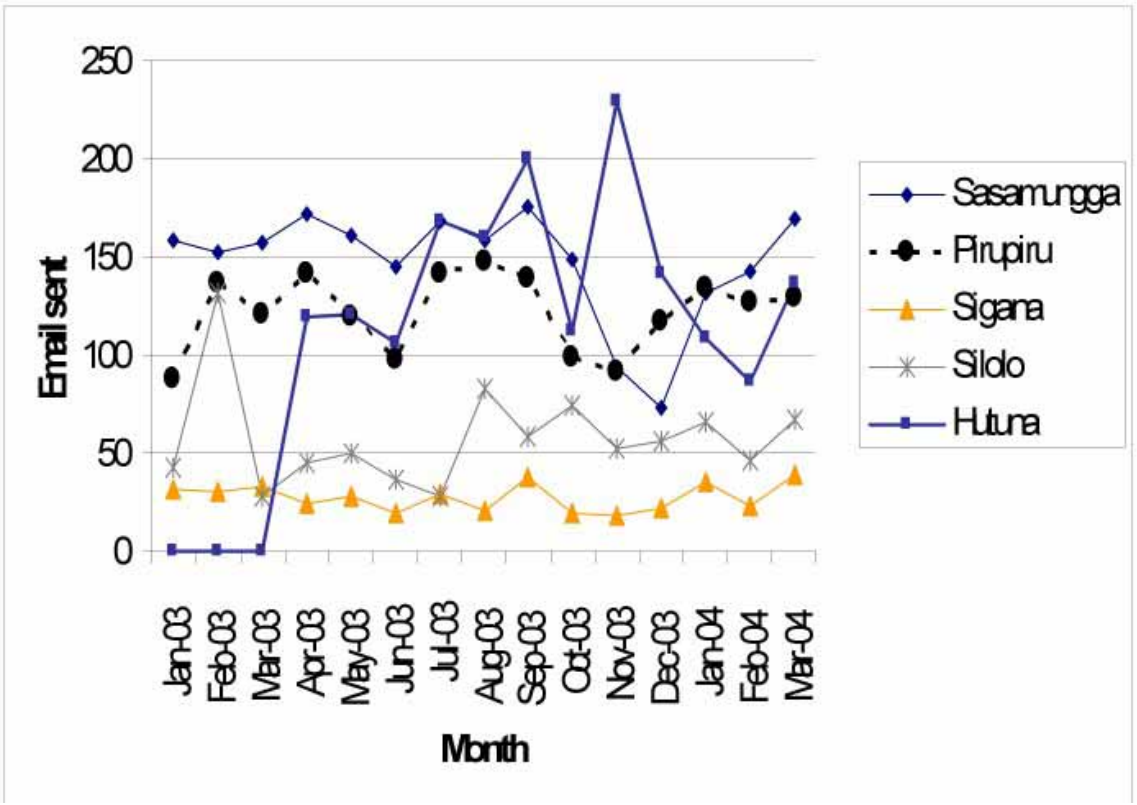
Date:

_____

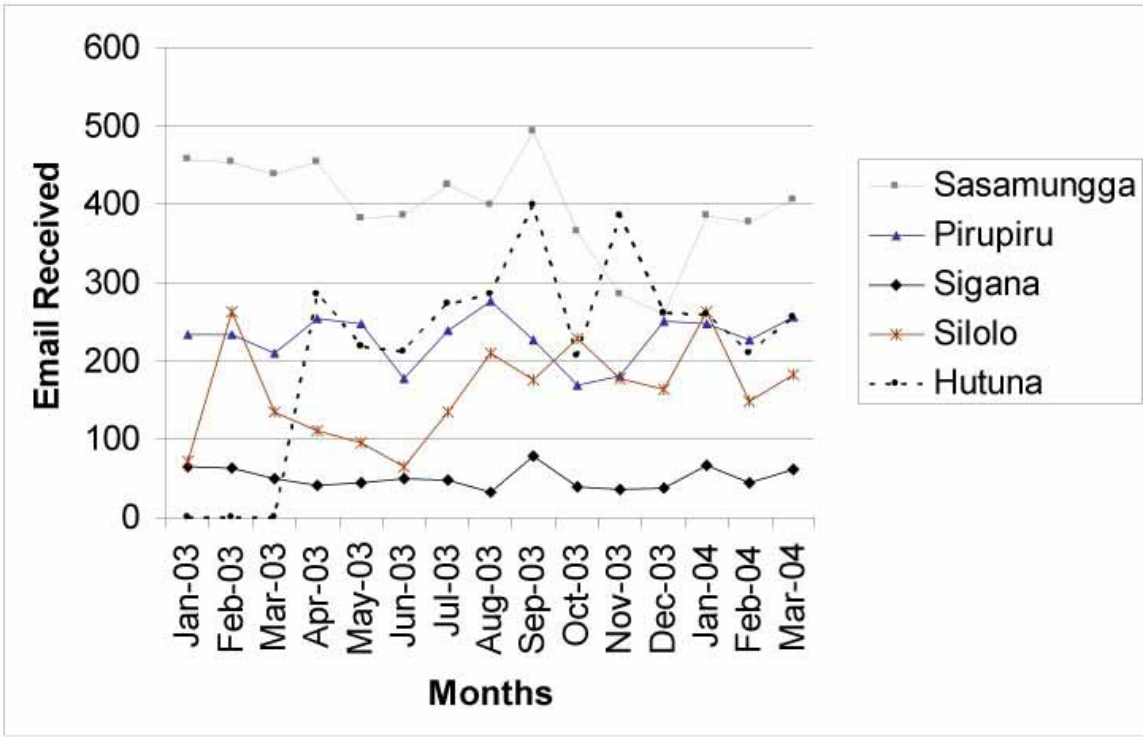
PFnet Technical Advisor, for RDVA

APPENDIX 4: Usage data (user profiles) from the daily reporting database

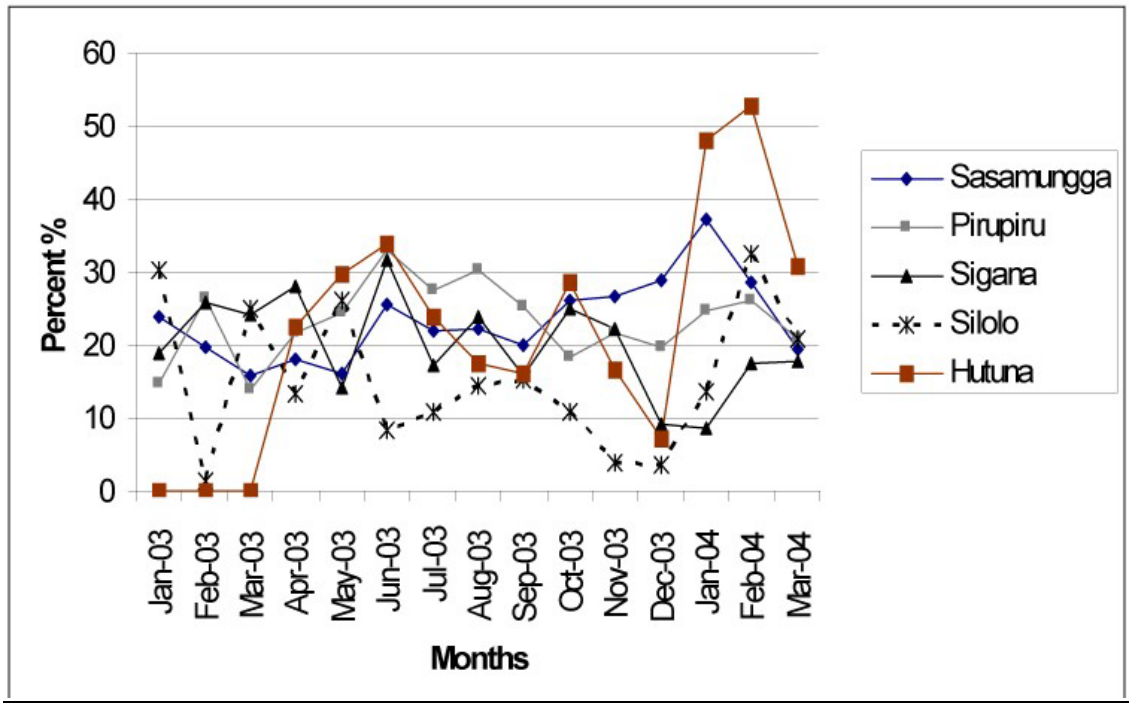
Emails sent from the community account of each station per month



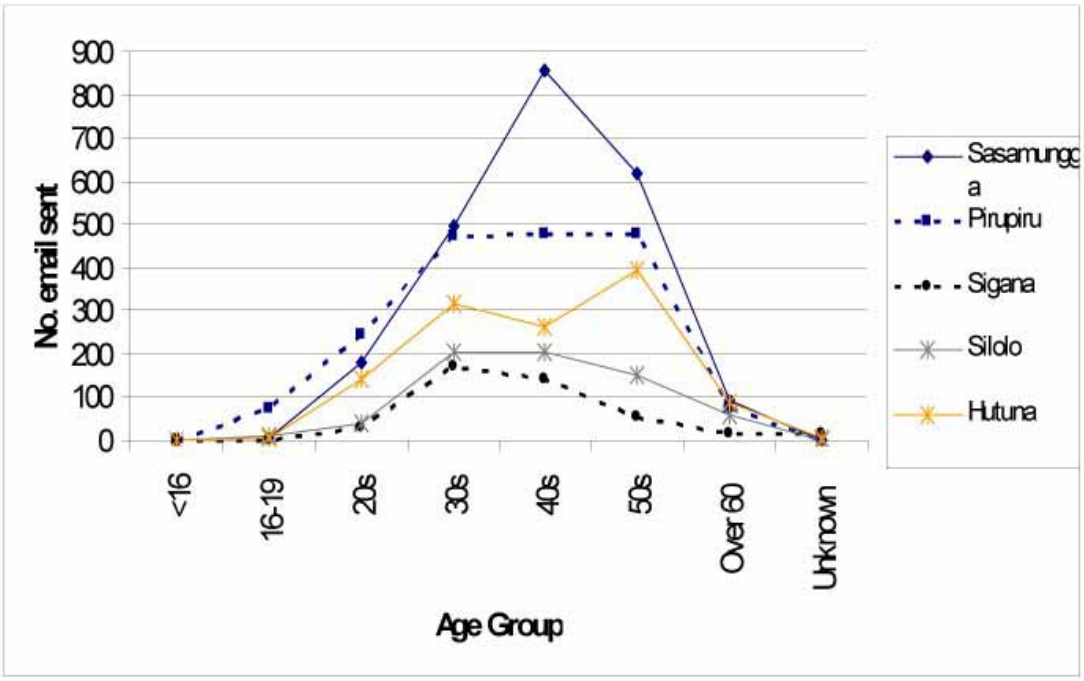
Emails received by the community account of each station per month



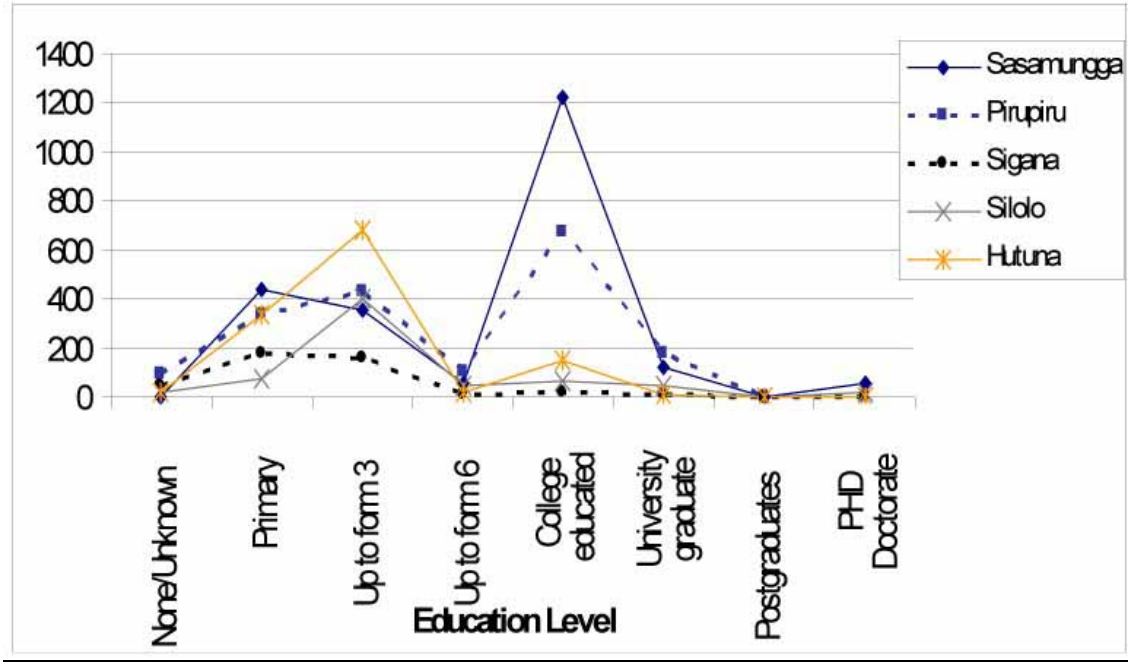
Usage by gender; percentage of emails sent by women



Usage by age group

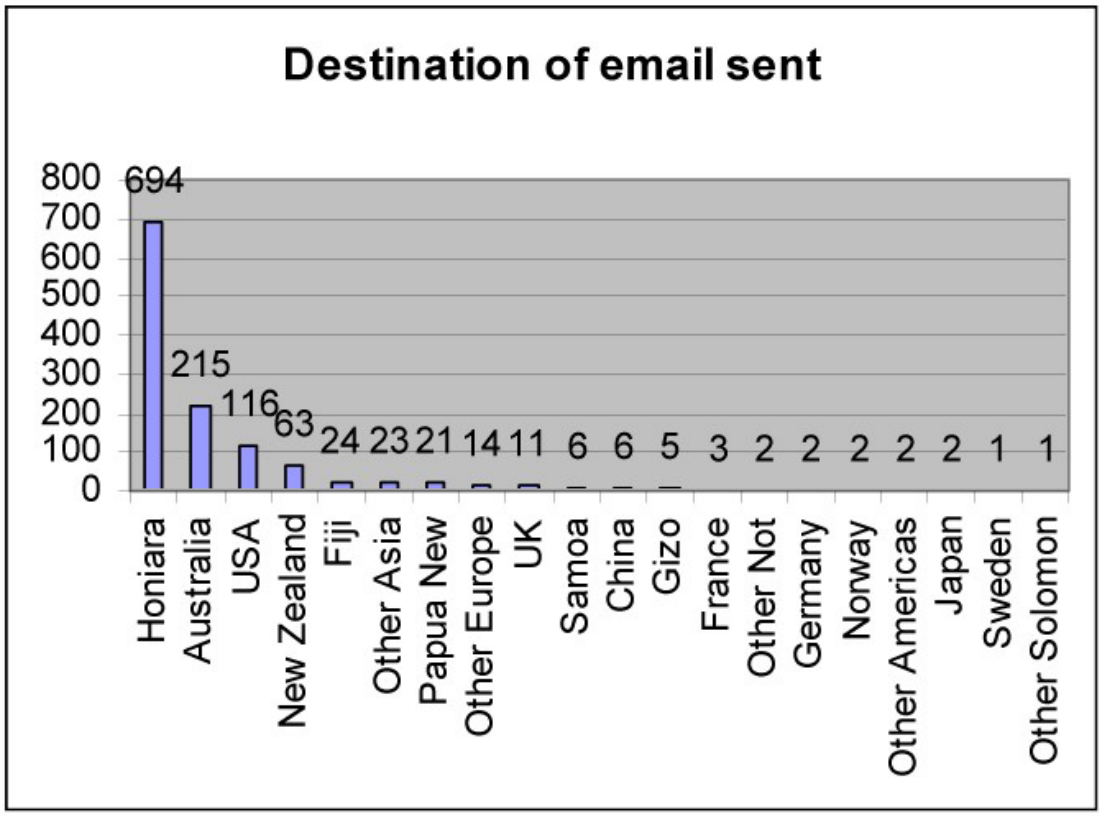


Usage by education level



Note 1: "College" is interpreted as including any post-school education except university, including non-formal or vocational institutions

Destination of emails sent



Reasons for sending emails (Sasamungga as example)