# Project factsheet information

<table>
<thead>
<tr>
<th><strong>Project title</strong></th>
<th>A Peering Strategy for the Pacific Islands</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grant recipient</strong></td>
<td>Telco2 Limited&lt;br&gt;27 Austin Street, Mount Victoria, Wellington 6011, New Zealand&lt;br&gt;+64 4 913 8123&lt;br&gt;<a href="http://telco2.co.nz/">http://telco2.co.nz/</a> <a href="http://pacpeer.org/">http://pacpeer.org/</a></td>
</tr>
<tr>
<td><strong>Dates covered by this report</strong></td>
<td>01 – 05 – 2015 / 15 – 09 – 2016</td>
</tr>
<tr>
<td><strong>Report submission date</strong></td>
<td>30 – 09 – 2015</td>
</tr>
<tr>
<td><strong>Country where project was implemented</strong></td>
<td>New Zealand</td>
</tr>
<tr>
<td><strong>Project leader name</strong></td>
<td>Jonathan Brewer</td>
</tr>
<tr>
<td><strong>Team members (list)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Partner organizations</strong></td>
<td>The University of Oregon’s Network Startup Resource Center.</td>
</tr>
<tr>
<td><strong>Total budget approved</strong></td>
<td>$30,000 AUD</td>
</tr>
<tr>
<td><strong>Project summary</strong></td>
<td>This project will catalogue demand, commercial arrangements, infrastructure, policies, and monopolies throughout the Pacific. It will educate stakeholders on the commercial, technical, and performance issues around overseas interconnections. The strategy proposed will help stakeholders to solve their own problems. The strategy is unlikely to call for peering in every country; few Island nations have the traffic to support them. It will instead try to inform stakeholders how regional cooperation can be of benefit to all.</td>
</tr>
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Background and Justification

Most telecommunications networks in the Pacific interconnect in Asia, Australia, or the United States. This has a profound impact on both the cost and the performance of regional traffic. It discourages regional interactions, and in particular erects barriers to research and education.

Many stakeholders in the Pacific do not fully understand the impact overseas interconnection has. Few look beyond the problems of their own country or organisation. This lack of understanding perpetuates cost and performance problems for all users. In some cases, it significantly lessens the impact of new submarine cable infrastructure.

Several cases illustrate the difficulties of the Pacific.

Most Samoan traffic between providers and universities routes via the United States. Technical workers at three providers and two universities are interested in establishing an exchange. No progress on an exchange has been made as managers do not recognise a business case.

Many students at the University of South Pacific (USP) in Fiji access campus resources from home via Vodafone. All traffic between Vodafone Fiji and USP routes via Australia. The overseas interconnection results in slow speeds and frustrations for students and network administrators. USP set up a temporary peering exchange with Vodafone in 2013 that vastly improved performance. Unfortunately the exchange was disestablished for political reasons.

Paupa New Guinea has two submarine cables connected to two different telecommunications providers. The providers do not have a local interconnection. A local Internet Exchange Point has had the support of local and overseas stakeholders since 2010. PNG’s regulator started investigating the issue in 2012. Still to this day there isn’t a local exchange point. Traffic between providers exchanges overseas.

Vanuatu was the Pacific’s only Internet Exchange success story. The Vanuatu Exchange launched around the same time as a new submarine fibre cable connected the country to Fiji. For a time, traffic between Vanuatu providers and government agencies stayed local to Vanuatu. Traffic from Vanuatu to Fiji however travels via Australia.

This project will catalogue demand, commercial arrangements, infrastructure, policies, and monopolies throughout the Pacific. It will educate stakeholders on the commercial, technical, and performance issues around overseas interconnections.

The strategy proposed will help stakeholders to solve their own problems. The strategy is unlikely to call for peering in every country; few Island nations have the traffic to support them. It will instead try to inform stakeholders how regional cooperation can be of benefit to all.

Project Narrative

Project Objectives

The project’s original objectives remain unchanged. They include a thorough examination and documentation of:

1. Physical and routed topology of the Internet in the Pacific
2. Demand from major users including commercial networks, education, and government
3. A matrix of stakeholders with ties across island nations, highlighting those with the most to gain
4. Analysis of benefits these to stakeholders of peering
5. Barriers to the efficient routing and exchange of traffic in the Pacific
6. A strategy for the establishment of peering exchanges
Project Partnerships

The University of Oregon’s Network Startup Resource Center (NSRC) has been a valuable partner to the project, allowing the project leader to combine project research while travelling to the Pacific to teach network engineering and to provide direct engineering assistance to educational institutions. The NSRC has also provided introductions to key stakeholders throughout the Pacific, including commercial, education, and government organisations involved in the development or regulation of telecommunications services.

The Pacific Islands Telecommunications Association (PITA) has been a valuable partner to the project, providing introductions to commercial carriers, and encouraging Pacific carriers to participate in the research through interviews and hosting of RIPE Atlas probe infrastructure.

The Pacific Islands Regulatory Resource Centre has been a valuable partner to the project, as a source, providing introductions, and providing office space for the project while the project leader was working in Fiji.

Although APNIC and ICANN were made aware of the project, they were not forthcoming in details on their Pacific activities and several opportunities for collaboration were missed. APNIC held trainings in Niue several weeks after the project leader visited Niue. ICANN held a series of trainings in Micronesia around two months before the project leader visited Guam for PacNOG18. These trainings would have been an ideal time for the project leader to attend and meet with stakeholders on Niue and in Micronesia, and explain to them the benefits of participating in the Peering Strategy project.

Involvement of Beneficiaries

Potential beneficiaries of the project include end users, governments, and carriers. More than 30 potential beneficiaries have agreed to be interviewed by the project leader, and have in aggregate provided more than 50 hours of time supplying background information.

Gender, Ethnic, Generation Gap

The Pacific is made up of a multitude of ethnic groups, all of whom seem to value participation from all ages of stakeholders. Ethnic or generation gap issues have had no impact on the project at all. From a gender perspective, it has been difficult to find women involved in the technical operations, management, or regulation of telecommunications providers. As this reflects the makeup of the telecommunications industry in Western nations, unclear whether or not a gender gap has had an impact on the project.

Adjustment of Activities

Development of tools and dissemination of project information has come slower than expected. Blogging about tasks and project updates has not been done on the internal project management website. That website has however expanded far beyond its original scope, and has become a resource now used by external parties such as the Pacific Islands Regulatory Resource Center.

Due to the timing of the grant disbursement, a planned visit to Tonga was not achieved. Instead a visit to Niue was substituted. Some trips have been less expensive than planned, and some more expensive. Overall, travel plans and spend on travel has been adjusted to suit the projects objectives.

Sensitivities around the recording of conversations have meant that proposed transcription services have not been used – instead typed notes have been taken of each interview. Additional in-person and Skype or Google Hangout interviewing has led to a vastly reduced telecoms budget.

Cable topologies, commercial arrangements, and educational partnerships discovered in early research has led to an increase in the amount of cloud servers for monitoring Internet latency. A server in Seoul was added to test claims by some carriers of transit supplied via Korea Telecom. A server in Mumbai was added to measure performance between India and Fiji, to investigate claims by Fiji National University of performance problems related to their Internet transit. Servers were added in Auckland, Seattle, and Los Angeles at major exchange points to determine how some Pacific carriers were engineering their traffic.
### Indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Baseline</th>
<th>Progress assessment</th>
<th>Course of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each of a set of countries in the Pacific was to be evaluated per the first four objectives, resulting in a matrix of stakeholders across the Pacific and an analysis of the benefits of peering for them.</td>
<td>At the start of the project, no significant work had been done to investigate the situations of the countries below: • American Samoa • Australia • Cook Islands • Federated States of Micronesia • Fiji • French Polynesia • Guam • Hawaii • Kiribati • Marshall Islands • Nauru • New Caledonia • New Zealand • Niue • Papua New Guinea • Samoa • Solomon Islands • Tonga • Tuvalu • Wallis and Futuna</td>
<td>Economics research on all of the Pacific markets has been done. Detailed investigations of telecommunications infrastructure has been carried out for all countries except: Kiribati, Nauru, Papua New Guinea, Tuvalu, Wallis and Futuna. In-person interviews have been carried out with all nine carriers in Pacific hubs Guam and Fiji, and with some providers in American Samoa, Cook Islands, French Polynesia, Hawaii, Niue, and Samoa</td>
<td>No significant changes are proposed. Participation in the PITA meeting and at PTC in Honolulu in January has lead to more interviews and more potential interviews with stakeholders, and higher penetration of RIPE Atlas probes.</td>
</tr>
<tr>
<td>A set of tools showing stakeholders the benefits of peering will be created as part of the project.</td>
<td>Before the start of the project, a few performance monitoring servers had been established in an ad-hoc and largely undocumented manner.</td>
<td>Fifteen servers are currently gathering data that will support the tools being created. All have been given standard configurations and security measures. Documentation on their configurations and commercial arrangements has been produced. An automated configuration system has been written allowing secure, automated addition of targets for the performance system. No aggregation of data from the servers is happening yet, and no single front-end server exists to share the collected performance data.</td>
<td>A website with information on the networks in the pacific has been created and will be released in November 2016. Data aggregation services and real-time data display on that website has been shifted into a new project funded by an operational research grant from APNIC.</td>
</tr>
<tr>
<td>A strategy for the establishment of peering exchanges</td>
<td>Prior to the launch of the project, some Pacific countries had been exposed to presentations and workshops around peering, including Vanuatu, Samoa, and Papua New Guinea.</td>
<td>Presentations about the present situation of peering in the Pacific have been given in Samoa, Tahiti, Niue, Fiji, Guam, and Hawaii, to a wide variety of stakeholders.</td>
<td>Many solutions to the problems encountered in the Pacific have been researched, documented and discussed in conference talks. While a strategy document is still important to the project, it is evident that communicating strategies will require the development of sets of training materials aimed at providers, regulators, and education users.</td>
</tr>
</tbody>
</table>
# Project implementation

<table>
<thead>
<tr>
<th>Project activities</th>
<th>Input</th>
<th>Outputs</th>
<th>Timeline</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish Confluence document management system instance.</td>
<td>System configuration.</td>
<td>Common document management store for all research materials and technical documentation.</td>
<td>August 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Improved Cable Latencies documentation.</td>
<td>Information gathering from vendors, maps, and online resources.</td>
<td>Cable latency charts used for benchmarking actual results.</td>
<td>October 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Airports and air routes of the Pacific.</td>
<td>Information gathering from online databases.</td>
<td>A traffic and efficiency metric for air travel in the Pacific, to compare data traffic to.</td>
<td>August 2015 – June 2016</td>
<td>Completed</td>
</tr>
<tr>
<td>Server security hardening and Smokeping update automation.</td>
<td>Configuration files, and scripts.</td>
<td>Secure servers and a process for updating all servers at once. Scripts stored in NSRC git repository.</td>
<td>October 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Interviews.</td>
<td>In-person or Skype interviews with stakeholders.</td>
<td>More than 30 sets of meeting notes and 15 emails stored in Confluence</td>
<td>May 2015 – June 2016</td>
<td>Completed</td>
</tr>
<tr>
<td>Kanban board.</td>
<td>Migrate reminders, paper notes, and emails into a coherent list of questions to ask for the project, and who to ask to get them answered.</td>
<td>Kanban board located in the administration section of the Confluence site</td>
<td>September 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Auckland for PicISOC meeting and NetHui.</td>
<td>Travel to Auckland. Presentation to PicISOC. Participation to PicISOC and NetHui.</td>
<td>Raise awareness of project and issues around peering in the Pacific. Find potential collaborators and interviewees.</td>
<td>July 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Samoa for PacNOG17 with NSRC</td>
<td>Travel to Samoa. Presentation to and participation in the PacNOG17 conference and training.</td>
<td>Raise awareness of project and issues around peering in the Pacific. Informal interviews with Samoa and American Samoa providers. Agreement to collaborate with PITA.</td>
<td>July 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Tahiti and Moorea with NSRC</td>
<td>Travel to French Polynesia. Meet with OPT, CRIOBE, University of California. Presentation to University of California.</td>
<td>Understand the telecommunications environment in French Polynesia – in particular how it affects research and education.</td>
<td>August 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Rarotonga</td>
<td>Personal visit to Rarotonga on which an interview with BlueSky CEO Adolfo Montenegro was conducted.</td>
<td>Understand the telecommunications environment in the Cook Islands, and how Telecom Cook Islands is being integrated into a regional network with BlueSky Samoa and American Samoa</td>
<td>August 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Australia for AusNOG</td>
<td>Travel to Australia. Meet with AARNet in Sydney before continuing on to AusNOG in Melbourne. Formal interview with AARNet. Presentation at the AusNOG conference. Informal interviews with Australian carriers.</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand Australian carriers relationships with the Pacific. Understand AARNet Pacific efforts.</td>
<td>September 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Niue</td>
<td>Travel to Niue. Meet with NZ High Commission, IUSN, Rocket Systems, Telecom Niue, AISCorp, IUSN end users. Formal interviews with all parties except Telecom Niue and AISCorp (informal interviews conducted)</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand the telecommunications environment in a satellite fed country.</td>
<td>September 2015</td>
<td>Completed</td>
</tr>
</tbody>
</table>

1 [https://kiwibrew.carto.com/viz/19ece3ca-7d86-11e6-ab30-0ee66e2c9693/map](https://kiwibrew.carto.com/viz/19ece3ca-7d86-11e6-ab30-0ee66e2c9693/map)
## Project activities

<table>
<thead>
<tr>
<th>Project activities</th>
<th>Input</th>
<th>Outputs</th>
<th>Timeline</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visit to Fiji</td>
<td>Travel to Fiji. Meet with PITA, PIRRRC, Telecom Fiji, Vodafone Fiji, Fintel, Digicel Fiji, Fiji National University, University of the South Pacific, Fiji Telecoms regulator (TAF)</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand the telecommunications environment in Fiji – in particular international transit issues. Agreement to work with PIRRRC including sharing of pre-publication project materials and background research.</td>
<td>October 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Meeting with Jules Maher in Wellington, NZ</td>
<td>Interview Jules in his capacity as advisor to the government of Niue and board member of Our Telkom, Solomon Islands</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand political difficulties in Niue between government owned telco &amp; private carrier funded by .nu.</td>
<td>November 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Meeting with Emanni Lui in Auckland, NZ</td>
<td>Interview Emanni in his capacity as owner of Rocket Systems, Niue</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand political difficulties in Niue between government owned telco &amp; private carrier funded by .nu.</td>
<td>November 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Guam for PacNOG18 with NSRC</td>
<td>Travel to Samoa. Presentation to and participation in the PacNOG18 conference and training. Formal and informal interviews with carriers from Guam, FSM, Palau, Republic of the Marshall Islands.</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand the Guam market in its context as a North Pacific hub for submarine cables.</td>
<td>December 2015</td>
<td>Completed</td>
</tr>
<tr>
<td>Visit to Hawaii for PITA Meeting &amp; Pacific Telecommunications Council.</td>
<td>Travel to Hawaii. Presentation to and participation in PITA Meeting, PTC, Pacific RANET planning meeting. Formal interviews with University of Hawaii (x2), Hawaii Pacific Teleport, Asia Development Bank. Informal interviews with carriers and regulators from multiple markets</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understanding of the Hawaii Internet market, in particular submarine fibre optic services, landing station access, and terrestrial transit market.</td>
<td>January 2016</td>
<td>Completed</td>
</tr>
<tr>
<td>Documentation and Mapping of Shipping Routes</td>
<td>Route maps from Asia Development Bank study on shipping in the Pacific</td>
<td>Determine how physical goods move through the Pacific for comparison with air traffic and data.</td>
<td>July – September 2016</td>
<td>Completed²</td>
</tr>
<tr>
<td>Documentation and Mapping of Submarine Cables</td>
<td>Multiple sources including US Govt nautical charts.</td>
<td>Determine how data moves through the pacific for comparison with air traffic and physical goods.</td>
<td>July – September 2016</td>
<td>Completed³</td>
</tr>
<tr>
<td>Visit to PNG for PacNOG19</td>
<td>Travel to PNG. Present to and participate in pacNOG19 conference and training. Formal and informal interviews with local carriers &amp; govt.</td>
<td>Raise awareness of project and issues around peering in the Pacific. Understand PNG market &amp; its connections to Australia &amp; SE Asia.</td>
<td>July 2016</td>
<td>Cancelled due to political unrest.</td>
</tr>
</tbody>
</table>

## Communications and Dissemination

Most of the activities described above involved the dissemination of project materials. By virtue of visiting many locations and attending a large number of meetings, people from a wide range of ages, ethnicities, and socio-economic profiles were connected with. No particular effort was made to target different gender groups.

The project has been communicated via multiple meetings and conferences, and via social media including Facebook and Twitter. A website is available at http://pacpeer.org/ and seven presentations have been published there.

² [https://kiwibrew.carto.com/viz/19ece3ca-7d86-11e6-abe0-0eed66e2c9693/map](https://kiwibrew.carto.com/viz/19ece3ca-7d86-11e6-abe0-0eed66e2c9693/map)
³ [https://kiwibrew.carto.com/viz/19ece3ca-7d86-11e6-abe0-0eed66e2c9693/map](https://kiwibrew.carto.com/viz/19ece3ca-7d86-11e6-abe0-0eed66e2c9693/map)
Project Management and Sustainability

Project administration has been achieved by taking advantage of a set of cloud-based software tools. Atlassian’s Confluence system has been used as a Wiki, document store, annotation tool, and Kanban board. Minutedock has been used for time tracking. Xero has been used to manage project finances.

Through meetings and communications with the Pacific Islands Telecommunications Association (PITA) and the Pacific ICT Regulatory Resource Centre (PIRRC) it has been generally agreed that the project principles need to live on after the project is completed. To this end, an interconnection committee has been discussed, and may be permanently created within PITA. The PIRRC plans to integrate project findings into training workshops aimed at regulators and regulatory staff in the Pacific. Through these two groups, stakeholders in provider and government spaces will be continually engaged on achieving project goals after the completion of the project.

In May 2016 a formal plan for integrating real-time data into the project was developed, and proposed to APNIC’s operational research grants program. Their funding, confirmed in August 2016, will allow systems developed to provide ad-hoc querying capabilities to be fully automated. The automated data will help users, operators, and governments make decisions with regards to the purchase, interconnection, and regulation of Internet services. Data systems are planned to be live on the existing PacPeer website within four months of the start of the new project.

Project Outcomes and Impact

<table>
<thead>
<tr>
<th>Project activities</th>
<th>Project Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latency Baselines and Monitoring System</td>
<td>All stakeholders will understand the performance of their local carriers to regional and world destinations. In the medium-term, this may lead to decisions by users to purchase one service over the other. It could lead to decisions by regulators to encourage or discourage carrier behaviours. Finally it could lead to carriers making architectural and commercial decisions that could benefit all stakeholders and regional interconnectivity. Stakeholders who have listened to or read presentation decks (greater than 80% of Pacific carriers) have gained visibility of latency issues.</td>
</tr>
<tr>
<td>Document Repository</td>
<td>The document repository assembled through this project could be a valuable resource for all stakeholders to understand technical, commercial, and regulatory challenges that have resulted in the state of Pacific interconnectivity in 2016. Its integration into PIRRC resources could create a unique permanent resource of materials relevant to the project’s goals. The Document Repository will be continued for at least another three years via an APNIC Operational Research Grant.</td>
</tr>
<tr>
<td>Stakeholder Interviews</td>
<td>Perspectives on networking and interconnectivity are often not shared even within small markets. Publishing mini case-studies based on stakeholder interviews could lead to greater understanding within markets, and realisation throughout the region that many interconnectivity problems are not market-unique, but common across small island developing states. No stakeholder Interviews or case studies have been published aside from anecdotes documented in slide notes published on the PacPeer website.</td>
</tr>
<tr>
<td>Presentations</td>
<td>Every formal presentation of the project material has raised awareness of the issues of peering in the Pacific and potential solutions. Through presentations at conferences, PITA and PIRRC have committed to continuing the project goals. Audience members have offered interviews and stories, contributing background material that otherwise would not have been available. Carriers have asked how they can do better, regulators have asked how they can participate, and funders such as the Asia Development Bank have agreed to open dialogue.</td>
</tr>
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</table>
Overall Assessment

The following table considers the project objectives and the extent to which they have been met.

<table>
<thead>
<tr>
<th>Project Objective</th>
<th>Extent Met</th>
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</thead>
<tbody>
<tr>
<td>Physical and routed topology of the Internet in the Pacific</td>
<td>Multiple static pictures of Internet topology in the Pacific have been captured and presented. A unified front-end to display dynamic and point-in-time pictures has been planned and will be built as part of a new project.</td>
</tr>
<tr>
<td>Demand from major users including commercial networks, education, and government</td>
<td>Interviews with stakeholders have captured and documented demand from commercial networks, education users, and governments for better local and regional interconnectivity.</td>
</tr>
<tr>
<td>A matrix of stakeholders with ties across island nations, highlighting those with the most to gain</td>
<td>A number of cross-island stakeholders have been identified. External research on Pacific markets and economies has introduced some surprising results into the project – ties between islands and OECD economies have been stronger than expected. As a result, the matrix will be expanded to show how connectivity between islands and their major trading partners functions.</td>
</tr>
<tr>
<td>Analysis of benefits these to stakeholders of peering.</td>
<td>Interviews have established immediate benefits of local and regional peering to a number of commercial, education, non-government organisations, and carriers.</td>
</tr>
<tr>
<td>Barriers to the efficient routing and exchange of traffic in the Pacific</td>
<td>Interviews and research have established a number of barriers to the efficient routing and exchange of traffic in the Pacific. Competitive access to cable landing stations and terrestrial transit at hub sites in Fiji, Guam, and Hawaii in particular have been established as key barriers. Commercial regulation established in Fiji in favour of its cable landing station operator has also been established as a key barrier.</td>
</tr>
<tr>
<td>A strategy for the establishment of peering exchanges</td>
<td>A number of strategies have been identified. Developing materials to communicate these strategies is a major focus of the project in its final months.</td>
</tr>
</tbody>
</table>

While users are experiencing problems due to routing inefficiencies, their carriers and governments do not necessarily understand user problems. Carriers understand "more capacity" to be the solution to most issues. Governments think “lower costs” is the solution for better performance for users. The lack of understanding by both governments and carriers of how efficient network interconnections can solve end user problems is the most important finding of the project to date – and educational materials will be developed to address it.

Any improvement to the efficiency of Internet connectivity in small island developing states has a flow-on effect to multiple areas of development. Should any stakeholders adjust their behaviour based on outputs of this project it should be considered a contribution to development.

In-person interviews – both formal and informal – have been of exceptional importance to the success of the project. While the initial project design called for telephone interviews, it was apparent shortly into the project that the culture of many Pacific island nations is more supportive of in-person interactions, certainly for first contacts.

Recommendations and Use of Findings

Stakeholders identified include end users, governments and regulators, and carriers. The desired change is an improvement in performance and cost for all stakeholders, achieved via more efficient network interconnections.

Today end users don’t know where to turn for information about telecommunications in the Pacific. If provided with appropriate resources and training, end users will be able to take into account the performance of their carriers when requesting services from their carriers or making purchasing decisions. With the assistance of organisations such as PicISOC the results of this project and its resources can be communicated to users.
Governments and regulators in the Pacific look to established markets and attempt to match their regulatory regimes, with the expectation that their own markets will respond in the same way. With the right information, governments will understand that markets in the Pacific need attention not required in continental markets. They might then cooperate on a regional basis on strategies to ensure Internet services are delivered in technically and cost-efficient manners. The PIRRC can help ensure governments and regulators have the information they need to cooperate and benefit their constituencies.

Carriers typically value profit above all other metrics, and the simplest equation of profit for carriers involves low-cost Internet transit. With education on purchasing and interconnection strategies, assisted by industry groups such as PITA, carriers might begin to work together to achieve efficiencies with transit and caching that they could not otherwise gain on their own. Such efficiencies will achieve the dual goal of improving performance for end users while also increasing profit margins.

Three distinct stakeholder groups require the creation of three different strategies in order to achieve the change the project wishes to bring about. With the assistance of three external organisations it is likely the project will succeed in its goals.

Bibliography


Brooks, D. F (2013NOV21). In the Appeal of Teleguam Holdings, LLC and its Wholly Owned Subsidiaries, GTA Telecom LLC; GTA Services, LLC; and Pulse Mobile, LLC. Guam: Office of Public Accountability.


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Kuerht, L. (2010). Justification for other than Full and Open Competition NTIA Award #NT10BIX5570053. IT & E Life in Motion, 1-3.


