Asia Pacific Network Information Centre (APNIC)

APNIC Member and Stakeholder Survey 2011



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Introduction

Background

APNIC is an independent, membership-based, not-for-profit organisation providing Internet addressing services to the Asia Pacific. APNIC has conducted five previous member surveys every two years to encourage Members to provide their views on the type and service level they have received as well as to suggest improvements so as to allow future development of the organisation, in meeting Members' needs.

In 2010, APNIC conducted its sixth biennial survey to gather views from Members and Stakeholders regarding the performance of the APNIC Secretariat as well as to provide feedback on matters important to reach the organisation's goals. As with previous surveys, the "APNIC Member and Stakeholder Survey 2011" was commissioned by the APNIC Executive Committee, and executed by independent consultants with the following objectives:

- To identify members' concerns in regard to existing services, as well as future needs as viewed by Members and Stakeholders.
- To maintain anonymity of all respondents.
- To reach the highest number of respondents to the online survey.

The following items were covered in the survey: APNIC General Services, Resource Distribution and Technical Services, Billing and Administration Services, APNIC Priorities, APNIC Public Services, IPv4 Depletion and IPv6 Deployment, Training, Education and Certification, Internet Governance and APNIC Representation. Appendix I has the full survey questions.

The questions were developed with inputs from a series of consultations in the form of focus group discussions in the following cities: Singapore, Hong Kong, Tokyo, Beijing, Sydney, Dhaka, Mumbai, Chennai and Delhi. Such discussions may inform the survey results because answers to questions may be probed. But because participants were not selected for representativeness, their findings cannot be taken as representative. In this report, some responses from the consultations are used in the analysis.

The survey, conducted from November 2 to 21, 2010 was completed with a total of 794 valid responses. This is an increase of 32% over the 601 valid responses in the previous survey. In terms of valid answers to specific questions, this was an increase of 30% to 60% over the previous survey. The number of stakeholder responses increased markedly, from 37 respondents in the 2009 survey, to 269 in the current survey. There was, however, a 7% decrease in the number of members' responses from 564 Member responses in 2009 to 525 Member responses in 2011. Keeping in mind that there may be more than one response from one Member, the decrease reflects a drop in the participation rate of Members from 27% (564/2,087) in 2009 to 21% (525/2,472) in 2010.

Although the survey reached 66% of APNIC member economies, the sample cannot be subject to statistical analysis for the most part. This is because strictly speaking the sample was self-selected and thus not truly random, which is a requirement for statistical tests. The margin of sampling error for the sample is about 3.5% at 95% certainty.

(Sampling error is the error that arises when one studies a part of (a sample from) a population. Such errors can be reduced by having a larger sample size and better control methods. All surveys of samples will have sampling errors. The 95% certainty is a benchmark convention used

in reporting research results to indicate how sure one is of the results. Using 90% (say 90%) would introduce less certainty while using a higher figure (say 99%) would introduce higher sampling errors.)

Disclaimer

This report contains information based on data gathered through focus groups consultation and online survey. The survey data contained in this report were submitted voluntarily by APNIC Members and Stakeholders through an online survey. A web link was sent to potential respondents via email. The consultants have attempted to assure the accuracy and reliability of the data contained in this report. However, the consultants make no representation, warranty or guarantee in connection with this report and hereby expressly disclaim any liability or responsibility for loss or damage resulting from use of this report.

This report has been prepared at the request of APNIC and the information is not to be used for any other purpose or distributed to any other party without APNIC's prior written consent.

It should be noted that to avoid duplication, the Summary of Results covers the key findings, analysis, conclusions and recommendations produced from the survey itself. What follows after the Summary, that is, the main body of the report, is not intended to be a longer version of the Summary. Instead, the main body of the report contains details such as the description of the survey development, process, analyses, results, conclusions and some recommendations. All comments made by respondents are captured in Appendix II with personal identifiers removed.

1. Summary of Results

1.1 Analysis of results

The survey questions were divided into two sections, one for "Members", namely those who are formally members of the organisation, and one for "Stakeholders", or non-APNIC Members who have an official or professional interest in the work of APNIC. It is noted that Stakeholders are self-selected, and there is no scrutiny as to the nature of respondents' interest or standing in APNIC matters.

It should be noted also that the open nature of the survey means that those from economies outside the Asia Pacific zone may also participate. These respondents were included in the analysis.

Overall, the survey found that APNIC Members were satisfied with APNIC's various services. APNIC Members and Stakeholders were in agreement with their assessment of APNIC's public services, respondents' preparation for IPv6, training, internet governance and APNIC's representation. An overview of the results provided by the respondents is outlined in the section below. Specific question details can be found in the body of this report.

In this survey, following a UN definition of Developed, Developing and Least Developed Economies, the term "Developed Economies" refers to: Australia, Canada, France, United Kingdom, Hong Kong, Japan, Korea, Netherland, New Zealand, Sweden, Singapore, Taiwan and United States.

"Developing Economies" refers to: India, China, Indonesia, Philippines, Malaysia, Pakistan, Thailand Vietnam, Sri Lanka, Mongolia, Papua New Guinea, Fiji, Cook Islands, Brunei, Macao, New Caledonia, American Samoa, Egypt, Greece, Guam, Federated States of Micronesia, Palau and Qatar.

"Least Developed Economies (LDEs)" refers to: Afghanistan, Bangladesh, Bhutan, Cambodia, Lao People's Democratic Republic, Maldives, Myanmar, Nepal, Samoa, Solomon Islands and Vanuatu.

The numbers and proportion of respondents in the above categories are 329 from Developed Economies, making up 41.4% of the total respondents, 370 from Developing Economies (46.6%) and 95 from LDEs (12%).

In the report, the results for each question is presented with the self-explanatory heading of the section and then followed by a diagram showing the question and the mean score on the right side of each bar to the question.

1.1.1 Section A: For APNIC Members only

Section A of the survey asked APNIC Members only to rate APNIC's existing general services, and to provide their opinion on the priority of various APNIC activities (both existing activities and potential new activities. Service-related questions were presented as propositions, requiring a numerical response between 1 to 10, with 1 being "Strongly Disagree" and 10 being "Very Strongly Agree". Questions on priorities required a response on a scale of 1 to 4, with 1 being Highest and 4 being Lowest. Some open-ended questions were made available to allow respondents to provide their views on the same matters.

1.1.1.1 APNIC General Services



The above chart shows that APNIC Members are generally satisfied with the services from and support by APNIC. "Overall services are good/excellent/satisfactory/fantastic" and "Staff are prompt, knowledgeable and helpful" were some of the comments from respondents. One respondent stated that APNIC was a well-run organisation that demonstrated good teamwork. The lowest mean satisfaction was to the question asking if APNIC should provide support in more languages than it currently does. Developing Economies (Egypt, Micronesia, Guam and Vietnam) and LDEs (Bhutan and Lao People's Democratic Republic) strongly favoured having more multilingual support.

Training and IPv6 guidelines were two key issues on Members' minds. About 25% of respondent said they wanted more APNIC training at different locations, in different delivery modes (face-to-face and online) and with a wider training curriculum; IPv6 was a training priority. IPv6 guidelines or a handbook for Members was requested for in the comments section.

Members also wanted security incident support, consulting over the Internet at reasonable cost, extension of the Helpdesk to 24/7 support through instant messaging chat services such as Gtalk or Skype after office hours, and an increase in the number of languages by Helpdesk support staff. Members also said they wanted regional helpdesks (eg. in India, Sri Lanka, Japan, etc. so Members could directly communicate with the region, and transfer fees in their local currencies), and helpdesk services in a more convenient time zone than Australia's (notwithstanding that the APNIC helpdesk is currently available 12 hours per day). In addition, some Members suggested that APNIC should have local offices for faster service, membership to government for free and generally less expensive APNIC membership fee.

Although 64% of the respondents said that no modification of APNIC services was needed or provided no comment to the question, others felt differently. Suggestions were made for APNIC to reduce the fees for IP ranges and the introduction of an IP de-allocation policy to track migration to IPv6; this could be done by halting the provision of IPv4 addresses so that Members take IPv6 addresses. Reduction of client response time and simplification of the digital certificate access mechanisms were among the suggestions; these are addressed in more detail in the Key Findings section of this report.





1.1.1.2 APNIC Resource Distribution and Technical Services

All questions except one achieved high mean scores. The question with the lowest mean asked if APNIC should provide consultancy services specific to individual members. Respondents from Developing and LDEs were more likely to want APNIC to provide such consultancy services on a user-pay basis; LDEs such as Afghanistan, Vanuatu and Laos had scores of 10.

In their comments, respondents from Developed Economies said they preferred APNIC to give priority to bettering its current performance, such as swifter response time, rather than to expanding its current scope of service.



1.1.1.3 APNIC Billing and Administrative Services

Respondents, particularly from Developing Economies, were satisfied with the services provided by APNIC Helpdesk as enquiries were generally handled appropriately and on a timely manner. MyAPNIC features were also being deemed adequate in supporting billing and account administration.

Most respondents rated the fee structure as reasonable but most (70%) also felt that fees should be reviewed regularly. Some 46% of respondents from Developing Economies and 9% from LDEs said that they would like the discounted membership fee for LDEs to be discounted further.





There was divergence on the fee payment cycle. About half favoured the status quo of an annual payment cycle; the other half was split between six-monthly and quarterly. Respondents from Developing Economies more were likely to choose a six-monthly and quarterly fee cycle than respondents from the Developed Economies. The LDEs preferred annual payment.

1.1.1.4 APNIC Priorities

Respondents were asked to rank the following questions relating to APNIC priorities. A scale of 1 to 4 was used for 1 being the highest and 4 the lowest. The mean scores are displayed on the right side of each bar.

Communication*



*Note: A low score means a high priority.

Members apparently had some difficulty in distinguishing the priorities of APNIC as they are very close in the final scores. Statistically-speaking, there are two groups of priorities: network engineering education and development of regional operator forums first and representing the

Asia Pacific region in Internet governance and expanding training activities in scope, geographical coverage and online options second.

Services



*Note: A low score means a high priority.

IPv6 deployment ranked higher, particularly with Developing Economies.

Technical



*Note: A low score means a high priority.

Routing and registry security improvements ranked high. R&D by APNIC was a close second. More distant was publication of statistics, analysis and news about the Internet. Consistent with the recurring theme that downplayed new services, the investigation of new technical services ranked low.

1.1.2 Section B: For all APNIC Stakeholders

Section B was open to all APNIC Stakeholders including APNIC members. In this section, respondents were invited to rate APNIC's public services, respondents' preparation for IPv6, training, Internet governance and APNIC's representation.

1.1.2.1 APNIC Public Services

Respondents were asked to rate the following questions relating to APNIC public services. The mean scores (on a 10-point scale) are displayed on the right side of each bar.

Policy Deployment



Generally, Members and Stakeholders felt that the APNIC Policy Development process was an effective way of developing resource management policy with respondents from Australia (13.7%), India (14.1%), New Zealand (6.4%) and Indonesia/Philippines (5.8%) being more likely to feel that way. There was no statistically significant difference in responses between Members and Stakeholders.

Respondents from Developing Economies (33%), and particularly the Stakeholders, were more likely to agree that APNIC needs a policy review and development process that allows policies to change more frequently.



Information Dissemination



There was a general level of satisfaction with information dissemination. Marginally lower ratings were given for remote participation options at APNIC meetings and the highest rating was for the APNIC website.

Respondents suggested including video materials as tutorials and to provide online chat with technical support so as to minimise response time. Ideally, support should be extended to 24/7 and in different languages.

Technical Services



In this sub-section, respondents recorded similar levels of agreement to both questions. Both the APNIC Reverse DNS and Whois Database were operating at a high level of quality, usability and reliability, particularly as felt by respondents from Developing Economies.

1.1.2.2 IPv4 Depletion Possible Roles for APNIC in Facilitating IPv4 Address Transfers



Overwhelmingly, respondents looked to APNIC for policies and guidelines for IPv4 transfers. This was also emphasized in focus group interviews. Most respondents want APNIC to play a referee role, ensuring fair play, rather than entering the market and being a player itself.

1.1.2.3 IPv6 Deployment State of Readiness of Member and Stakeholders' Organisations in IPv6 Deployment



IPv6 readiness was a problem still apparent in some focus group meetings. While awareness was generally reasonable high, in some cases it appeared that some Members and Stakeholders still had no idea how serious the challenge was likely to be.

A sizeable proportion of respondents (39%) said that their organisations had a formal plan for IPv6 deployment and most of these had trained staff. Among there was no significant difference between large and small organisations although larger organisations appeared to be more ready (25.3%) than smaller ones (24.32%); among these respondents, those from Developing Economies (57%) were more likely to have a formal plan for the deployment.

But only 19% of all respondents reported that their organisations had an IPv6 transition budget. This suggests that many plans for IPv6 deployment may exist only on paper.

A third (36%) of respondents said their organisations had received IPv6 allocation; of these, a little more than half of respondents in Developing Economies and LDEs as well as more than half of those in larger organisations seemed to have such a budget.

Respondents suggested the provision of training/seminars/workshops on IPv6 transition in different regions, languages to help IPv6 deployment and secondment of expert technical support staff with network operators in Developing Economies. Another suggestion was to provide more information about the practicality of IPv6 deployment and materials to help develop plans to deploy IPv6.

To enable respondents to make the decision to deploy IPv6 in the next 12 to 24 months, respondents said there was the need to have a better understanding of the cost information to upgrade current whole network infrastructure to support IPv6, including hardware requirements and risks involved. Respondents suggested that governments may also play a role in planning the framework and plan for the ICTs and IPv6 deployment.





APNIC is seen as having a central role in facilitating IPv6 deployment, particularly by respondents from Developing Economies. The three actions above were surfaced in the consultations. Other suggestions included training for vendors and Members as well as handholding, such as physically visiting sites to check on deployment. In addition, as total deployment cost had been raised by many participants during consultations as the biggest hurdle, respondents suggested reducing the cost of IP6 address space for current IP4 holders.



1.1.2.4 Training, Education and Certification

As in previous surveys, APNIC training continued to be viewed very positively as high quality and, generally, affordable. Demand for training continues to increase, especially regarding IPv6. In this survey, respondents felt that APNIC should establish more partnership, particularly with local trainers or training organisations to support training and education. Developing and LDEs wanted more training and account for the relative dissatisfaction with training costs. These group of respondents were likely to accept higher costs if the training led to industry-recognised certification of the APNIC courses.



APNIC's Online Training



While there were respondents from the Developed Economies who commented that training should be online, most respondents (74%) said that they had not accessed APNIC's online training. This matter warrants further investigation.

eLearning Content



Respondents, especially from the Developing Economies (39%) were generally satisfied with the contents of APNIC's eLearning, finding them relevant to their organisations.



Training Location

Respondents, particularly from smaller organisations, preferred training to be provided locally. Respondents from Developed Economies said they preferred training in the major cities.

1.1.2.5 Internet Governance

The issue of Internet governance was first raised in the 2004 survey. Respondents then strongly supported APNIC providing proactive representation to governments and other regional and global organisations. They added that APNIC should also be seen as co-operating with governments in order to foster better government relations. In recent years, governments have expressed an increasing interest in Internet Governance.

The Internet community, generally speaking, is suspicious and wary of government and reflected in the comments. This suspicion and wariness varies widely in Asia. The Developed Economies tend to be more so, as indicated in the comments. But both in the comments as well as during the consultations, Developing Economies are less so.



Overall, respondents were supportive of APNIC doing more to support specific regional Internet governance activities and satisfied with APNIC's level of engagement with the government (with those from Developed Economies being somewhat less supportive on average, than Developing Economies). This is because government can bring resources and other forms of support. Also, governments in the Developing Economies may be less informed and so need training and education, or else news laws to may be passed or existent laws enforced in such ways as to hurt the workings of the Internet.



In this context, it is understandable that respondents want APNIC to engage governments by sharing best practices with them and training officials but are less keen for government to participate in decision-making meetings, even if government do not participate in the final decisions.



Respondents viewed this mildly positively at 6.28 with 5 being about the midpoint. Overall, Developing Economies were more welcoming of governments. Compared with other economies, 18.6% from Australia and 13.4% from India tended to agree that a Government Advisory Committee, similar to ICANN's, be formed for APNIC.



Respondents, particularly from Developing Economies, felt that APNIC should play a more active role in the Internet Governance Forum (IGF), by acting as a liaison with respective governments, advocating and assisting with policy making to ensure good Internet governance.

1.1.2.6 APNIC Representation



Respondents, particularly from Developing Economies, recorded a high level of agreement that the APNIC Executive Committee election process is clear and transparent. There were comments, however, that pointed out problems in the election process and suggested improvements to the representation structure and election.



Respondents, particularly from the Developing Economies (46%) also said that the regional Internet community would benefit from more localised APNIC support; localised Helpdesk support and training were some of the activities that respondents said they were looking forward to.



Currently, there are six (6) economies that have a National Internet Registry (NIR): China, Indonesia, Japan, Korea, Taiwan and Vietnam. India has submitted a request for an NIR.

Interestingly, half (316) of the 618 valid responses said their economies did have a National Internet Registry (NIR) when actually they did not. The respondents from the following economies do not have an NIR but indicated that they did: Afghanistan, Bangladesh, Canada, Fiji, Micronesia, Hong Kong, India, Cambodia, Sri Lanka, Mongolia, Maldives, Malaysia, Netherlands, Nepal, New Zealand, Papua New Guinea, Philippines, Pakistan, Qatar, Singapore, Thailand and United States. It is likely that the term "NIR" was interpreted by these respondents to refer to their national ccTLD DNS registry, and this confusion should be noted by APNIC for future reference.



For respondents whose economies do not have an NIR, more than half (66.2%) felt that their economies did not require an NIR.

However, it should be noted that respondents from economies such as China (12%) Indonesia (3.4%), Japan (0.6%), Taiwan (0.6%) and Vietnam (1.7%) were not aware of the existence of an NIR in their economies.

During the consultations, participants for the most part were satisfied to let the status quo regarding NIRs remain. The comments section of the survey, however, saw a number of calls for the introduction of NIRs. To be sure, there were also a number of comments that reflected uncertainty regarding the role of an NIR. This is an area that would appear to require some education so that those considering an NIR can be aware of the pros and cons.

Conclusion

In general, APNIC Members and Stakeholders shared similar views on most issues. Overall, there is a high level of satisfaction with APNIC with a few pockets of exception. There are concerns about the Helpdesk, training and IPv6. The differences, where they exist, tend to be based on the state of the economy, between Developed, Developing and Least Developed Economies. The distinction would appear to lie not so much in the state of the economy as in the state of the Internet in the economy.

A couple of themes ran through the study. First, Members (and likely Stakeholders too) preferred improvements to the current system in preference to the introduction of new services. This conservative element ran so strongly that it might be perceived as hindering the development of innovations and new ideas. The reason for this conservatism may be due to the second theme of cost-control. Perhaps it is because Internet provision is now a commodity-type service and so the profit margins are slim. Cost-consciousness is particularly high in South Asia, where there were calls to reduce all manner of costs emanating from APNIC starting with membership dues and including training.

The following are key issues and their recommendations derived from the survey:

IPv6

A significant number of questions were raised around IPv6.

There are knowledge gaps that may be filled by APNIC in training both employees of APNIC Members as well as government officials. Some of the training is at the level of awareness-raising.



IPv4 transition to IPv6 poses many issues and challenges that for which Members and Stakeholders believe APNIC would be best positioned to address. First, it is suggested that developing more policies and guidelines to aid APNIC Members in the transition process. Respondents are most comfortable with APNIC acting as a referee rather than a player in the IP address market. The development of policies and guidelines is a priority area.

IPv6 deployment will likely be problematic for the near future because there is a sizeable pool of organisations that are not "with it": they either have no formal plan for deployment, or an unrealistic plan or they may not have properly allocated a budget for the job. Support and training for IPv6 deployment grow increasingly critical, and APNIC is being asked to assist in many ways (whether or not this is part of the organisation's core role or within its realistic capabilities).

Training

The extent of training needs in the region would indicate that training in general should move to be increasingly localised. The need for training is greatest in Developing and LDEs, where training needs exist at different levels and on a wide spectrum of issues. Some of the training could be useful for government officials, for example in understanding the mechanics of the Internet so that laws may be better promulgated. Some of the training are of a technical nature for the private sector in the Developing Economies to run an Internet business. And as has been indicated, some of the training should be of a policy nature both for operators and government officials. In these circumstances, a good local trainer would be the best person for those sessions.

Also local trainers should help to bring down costs.

To make the courses more attractive, certification of training should be explored.

LDEs value the training to such an extent that some among them are prepared to pay for the training.

The current financing model for training calls for subsidies for the participants, the question of the financial sustainability of the training should be studied.

The online training service should also be evaluated as there is low enrollment.

Helpdesk

Survey respondents provided a wide range of inputs, and expressed a wide range of expectations concerning APNIC's helpdesk service. A selection of specific requests is as follows:

Extending the hours of the Helpdesk should be studied to explore the possibility of being a 24/7 service. To do so, Helpdesk should be made more localized support services both online and offline. An escalation procedure needs to be developed to shorten the turn-around time for Helpdesk services. Instant messaging software such as Gtalk or Skype would be a welcome tool for many users. The website is seen as a useful tool, but could be could be improved if it included interactive online tutorials and support in a variety of languages. These are seen as a means to increase APNIC's current range of services.

Internet Governance

Members and Stakeholders are comfortable with the level of engagement of APNIC and governments and the IGF. They felt that engaging governments would help to ensure good Internet governance policies are adopted. Respondents felt that APNIC could step up its efforts on engaging with governments in the region; more interaction with government officials was preferred. Members and Stakeholders, however, drew the line at involvement of government in APNIC decisions and functions. Respondents noted that a line should be drawn at governments getting involved in APNIC's decision making.

National Internet Registry (NIR)

There is a lot of misunderstanding and confusion about what an NIR does. Clearing up the misperception and misunderstanding should probably be a first step in educating Members and Stakeholders on what an NIR does before deciding if an NIR is a necessity.



2. Methodology

The survey used two different methods: focus groups and an online survey.

2.1 Focus Groups

It is important that the survey questions be driven by the views of the Members as to what are currently relevant to their needs. Therefore, discussions were held in a cross-section of Asia Pacific cities to give small groups the opportunity to consider and put forward their suggestions.

A series of focus groups consultations were conducted with Members from selected countries: India (Mumbai, Delhi and Chennai), Bangladesh (Dhaka), Singapore, Japan (Tokyo), Hong Kong, China (Beijing) and Australia (Sydney). The meeting took place in the months of September and October 2010. These countries were selected as they represent economies with APNIC's highest customer base and geographically, they are spread out in the Asia Pacific region. The aim of these focus groups is to gather input from Stakeholders and APNIC Members as part of the preparation for the survey and final report. APNIC Members and Stakeholders were assured at each of the consultation meetings of the confidentiality of their comments by the consultants.

The focus groups proved to be useful as they provided insight into what information APNIC should attempt to elicit from its members. Questions were reviewed and revised. Important issues that surfaced during the meetings included IPv4 depletion and training. A strong message from Members particularly was that APNIC should step up efforts regarding both IPv4 depletion and training; further, the lack of information on post-IPv4 options was of serious concern. It was suggested that APNIC could play a more significant role in the transition to IPv6. Government relations were also seen as growing in importance. There was, however, little support for a government advisory group (GAC) modeled after that of ICANN's.

2.2 Survey Questionnaires Development

The survey questionnaires were developed based on the focus groups consultations. The survey was administered through the web programme *Survey Monkey*. An email was sent to all Members and to Stakeholders with the *Survey Monkey* website link. In all, there were a total of 1,099 responses.

The survey was divided into two sections. Section A was meant for APNIC Members only and it invited respondents to rate APNIC's existing general services on a scale 1 to 10 with 1 being Strongly Disagree and 10 being Very Strongly Agree. Questions on APNIC's priorities were rated on a scale of 1 to 4 with 1 being Highest and 4 being Lowest. Some open-ended questions were made available to allow respondents to provide their views on the same matters.

Section B was open to all APNIC Stakeholders including APNIC Members and it invited respondents to rate APNIC's public services, respondents' preparation for IPv6, training, internet governance and APNIC's representation.

A copy of the survey invitation email and the survey as presented to respondents are set out in Appendix II and I respectively.

2.3 Survey Promotion

Survey promotion was conducted so as to create awareness about the survey and to encourage participation. The promotion was delivered in the following modes: APNIC website, ICONS, APNIC social network sites, MyAPNIC, APNIC presentation and training slides, and a number of email announcements.

The survey promotion targeted at the following categories of Members and Stakeholders:

- APNIC Members,
- APNIC announcement mailing list,
- Relevant government agencies,
- APNIC past events participants (non-members), and
- Various Non-profit Organisations in the Asia Pacific region.

In order to encourage participation, those who responded by 9 November 2010, 24:00 (UTC+10) Brisbane time were entered for a draw for an Apple iPad. At the end of the survey, there were another two draws, each for a HTC Wildfire smart phone.

2.4 Confidentiality

To ensure confidentiality in the survey, the password was changed and retained by one of the consultants before the survey went live. Raw data for analysis were transmitted to APNIC Secretariat but in that instance all personal identifiable demographic were stripped away first. Participants in the survey cannot therefore be identified by their responses except by the consultants.

3. Respond Range and Sources

3.1 Respondents Demographic

Of the 1,099 responses received, 794 were valid; 305 had the unexplained defect of answering only the first question, a filtering question regarding their membership status. In the survey, some questions were not answered. A total of 525 (66%) APNIC Members and 269 (34%) Stakeholders completed the survey. Compared with the previous survey, there was a sharp sevenfold increase in responses from Stakeholders.



3.2 Organisation Size



The survey was well represented by Members of different company size.

3.3 Economy

The following chart outlines the economies of the 794 survey respondents. The responses were provided from 47 economies predominantly located within the Asia Pacific region. Australia (19.3%) accounted for the largest number of respondents, follow by India (13.5%).

ISO Code	Economy	Number of Responses	Percentage			
Developed Economies						
AU	Australia	153	19.3%			
NZ	New Zealand	58	7.3%			
HK	Hong Kong	41	5.2%			
SG	Singapore	23	2.9%			
ЈР	Japan	16	2.0%			
US	United States	15	1.9%			
KR	Korea, Republic of	10	1.3%			
TW	Taiwan	7	0.9%			
СА	Canada	2	0.3%			
SE	Sweden	1	0.1%			
FR	France	1	0.1%			
GB	United Kingdom	1	0.1%			
NL	Netherlands	1	0.1%			
	Sub-total	329	41.4%			
Develop	oing Economies					
IN	India	107	13.5%			
CN	China	52	6.5%			
ID	Indonesia	41	5.2%			
РН	Philippines	38	4.8%			
MY	Malaysia	26	3.3%			
РК	Pakistan	19	2.4%			
TH	Thailand	17	2.1%			
VN	Viet Nam	14	1.8%			
MN	Mongolia	13	1.6%			
LK	Sri Lanka	12	1.5%			
PG	Papua New Guinea	9	1.1%			
FJ	Fiji	7	0.9%			
СК	Cook Islands	2	0.3%			
MO	Macao	2	0.3%			
BN	Brunei Darussalam	2	0.3%			
NC	New Caledonia	2	0.3%			
QA	Qatar	1	0.1%			
GR	Greece	1	0.1%			
PW	Palau	1	0.1%			

EG	Egypt	1	0.1%
GU	Guam	1	0.1%
FM	Federated States of Micronesia	1	0.1%
AS	American Samoa	1	0.1%
	Sub-total	370	46.6%
Least D	Developed Economies		
BD	Bangladesh	34	4.3%
KH	Cambodia	21	2.6%
NP	Nepal	19	2.4%
MV	Maldives	7	0.9%
BT	Bhutan	3	0.4%
VU	Vanuatu	3	0.4%
LA	Lao People's Democratic Republic	3	0.4%
AF	Afghanistan	2	0.3%
WS	Samoa	1	0.1%
MM	Myanmar	1	0.1%
SB	Solomon Islands	1	0.1%
	Sub-total	95	12.0%
	Total	794	100.0%

*Note that some non-Asia-Pacific Stakeholder respondents may be Members of other RIRs.

4. Survey Key Findings

The following analysis presents a summary of the statistical and open-ended survey results. In the first section only APNIC Members rate APNIC's existing general services. Section B of the analysis was directed to both categories of respondents and they were asked to rate APNIC's public services, respondents' preparation for IPv6, training, Internet governance and APNIC's representation. Each section contains sub-section questions as categorized in the survey. A comparative study between the APNIC Members and Stakeholders will be discussed. Some open-ended questions were included to allow respondents to provide their views on the same matters in both sections, and these are also discussed.

The results for both sections are mainly outlined in a combination of three different scales: a scale of 1 to 10 with 1 being Strongly Disagree and 10 being Very Strongly Agree; a scale of 1 to 4 with 1 being Highest and 4 being Lowest; and a Yes/No. In the survey, where a respondent omitted any question or indicated "N/A", no score was recorded in the analysis. All comments from the open-ended questions are contained in the body of this report and in Appendix III.

4.1 Section A Findings – For APNIC Members Only

4.1.1 APNIC General Services Summary

For the four scaled-questions under this sub-section, a maximum score of 10 and a minimum score of 1 was recorded indicating a range of nine for the majority questions.



Responses regarding the overall services provided by APNIC recorded a maximum score of 10 and a minimum score of 2, a range of eight. The mean score for this question was high indicating that APNIC Members were satisfied with the overall services provided by the organisation; this was corroborated at the focus group discussions (FGDs) held with APNIC members and stakeholders in Beijing, Tokyo, Sydney and Hong Kong. However, there was some concern about the lack of information on existing services. The subsequent two questions recorded a maximum score of 10 and a minimum score of 1, a range of nine. The mean scores for these questions indicate that APNIC Members generally feel that the value they get from APNIC justifies the cost they pay for the service. A few respondents, however, felt the need to look at a restructure of APNIC pricing. Respondents were also satisfied with the level of communications that meets their needs. However, the some respondents indicated the desire for APNIC to provide support in more languages (without specifying which).

A.1.1 Overall, the services provided by APNIC are satisfactoryA.1.2 The value Members get from APNIC justifies the costA.1.3 APNIC communicates in a way that meets my needsA.1.4 APNIC should provide support in more languages than it currently supports					
	Mean	Standard Deviation	Number of Responses		
A.1.1	8.09	1.58	521		
A.1.2	7.45	1.90	523		
A.1.3	7.83	1.73	518		
A.1.4	6.36	2.44	515		

Comments by respondents:

Respondent comments were generally positive and highlighted the overall experience with APNIC as satisfactory. However, a small number of respondents noted that email as a form of communications is rather slow and support should preferably be rendered in multiple languages.

Some of the comments by respondents were summarized as follows:

- Overall respondents found that the APNIC services were good or satisfactory, with two respondents commenting on the service with the words "Excellent" and "Fantastic". Staff were rated to be polite, responsive and helpful;
- There was also one comment that APNIC was a well-run organisation. Another commented that APNIC demonstrated good team work;
- APNIC should conduct more training for members, particularly in the area of IPv6;
- MyAPNIC was useful but slow to access and unfriendly. Further improvement should be done to increase its performance;
- A few respondents indicated that the service procedures were complex and some documentation, especially the technical documentation with examples should be made available on the APNIC website;
- Creation of a online forum for Members to interact and discuss issues actively;
- Email communication was deemed to be delaying service respond time.

On what other services APNIC should offer, about 25% of the respondent wanted APNIC to provide more training at different locations and through a variety of delivery modes such as online and face-to-face. A wider training curriculum, particularly on IPv6 should be given the priority. IPv6 guidelines or a handbook for Members should also be made available. Security incident support, consulting on Internet setup at reasonable cost, extending the current Helpdesk support hours, online chat and increasing the number of languages by the Helpdesk support staff were also among other services that respondents hoped to be made available by APNIC. In addition, one respondent from India thought that APNIC should have local offices for the faster transfer of fees in local currency and training coordination. Free government membership and lower APNIC membership dues were also asked.

Although many respondents said that APNIC need not modify its services, others had different views. For instance, suggestions were made for APNIC services to reduce the fees for addresses holdings, while some respondents suggested the introduction of an address de-allocation policy to track migration to IPv6; this could be done by halting the provision of IPv4 addresses so that Members take IPv6 addresses instead. IPv4 run-out surfaced as a matter of priority for all participants at the focus group discussions; they felt that RIR's especially would consider it the

biggest priority issue. It should be noted that the consultant is not in a position to evaluate many such suggestions, or even in some cases to assess their validity; however they are described here for completeness.

Other comments by respondents are summarised as follows:

- Reduce client response time;
- Simplify the crypto certificate access;
- Discontinue the provision of IPv4 addresses;
- Make the APNIC resource update database more user-friendly;
- Create more address block sizes for allotment;
- Simplify/Modify second opinion request for address redistribution through MyAPNIC.

Generally, respondents viewed the following actions as necessary to improve the APNIC Helpdesk:

- A 24/7 support including weekends through instant messaging chat services such as Gtalk or Skype and other new communication channels. This would enable quick response times as opposed to waiting for email responses days later;
- The need to provide regional helpdesks (eg. in India, Sri Lanka, Japan, etc. so Members can communicate directly Help Desk), and/or provide helpdesk services in more neutral time zone than Australia's;
- The need to provide helpdesk support in more languages;
- Necessary identification of users and security measures should be in place during the support process;
- Simplify the Helpdesk documents, which are at the moment lengthy and complicated.

4.1.2 Resource Distribution and Technical Services Summary



A maximum score of 10 and a minimum score of 1 was recorded, a range of nine for most questions in this sub-section. Generally, Members had a high level of satisfaction over resource

distribution and technical services. The only exception, a relatively lower mean score, was recorded about APNIC providing consultancy services specific to member's needs. Australia (36%) ranked top among economies that did not think APNIC should provide consultancy services specific to member's needs. Respondents from Developing and LDEs (Afghanistan, Vanuatu, Lao People's Democratic Republic) were more likely to agree that APNIC should provide such consultancy services on a user-pay basis.

A.2.1 The procedure to obtain IPv4, IPv6 and ASNs is clear and straightforward A.2.2 APNIC resource allocation services (IPv4, IPv6 and ASNs) are adequate in response time and relevance				
	Mean	Standard Deviation	Number of Responses	
A.2.1	7.44	1.88	479	
A.2.2	7.63	1.75	478	

Comments by respondents:

Some Members (Bangladesh, India and Cambodia) suggested that basic training with the Members for managing addresses resource allocation and Internet resource management was highly desired. The use of the live chat feature was a possible means of delivering the training. APNIC should look into reducing the response time and provide a documented guideline on services such as the IPV6 subnetting. One respondent (Australia) also commented that the allocation of new addresses ranges, particularly IPv4, was taking a long time. FGD participants also felt that it was important to identify the plans for post IPv4 options for gaining and disposing of the addresses, especially 2-3 years post exhaustion. Furthermore, participants in Beijing felt that APNIC should play a key role in minimising routing problems, regardless of the transfer policies adopted.

A.2.3 The APNIC Helpdesk provides timely and appropriate responses to technical and service enquiriesA.2.4 APNIC should provide 24/7 Helpdesk operation for critical serviceA.2.5 APNIC should further extend Helpdesk hours beyond the current 12 hours				
	Mean	Standard Deviation	Number of Responses	
A.2.3	7.74	1.71	475	
A.2.4	7.79	2.25	477	
A.2.5	7.47	2.31	470	

Comments by respondents:

While most respondents viewed the Helpdesk as satisfactory, some respondents commented that the procedures and documentation can be a little difficult and APNIC should try to reduce the current response time to two to four hours, extend Helpdesk support hours and make available real-time chat with Helpdesk. Technical services should be continuously available and improved based on the current trends in networking. Some technical documents in non-technical languages are highly desired by non high-tech users.

A.2.6 MyAPNIC features to support resource request and resource management are adequate				
	Mean	Standard Deviation	Number of Responses	
A.2.6	7.42	1.82	475	

Comments by respondents:

Respondents generally indicated positive experiences with the support from MyAPNIC. Even so, a few respondents (Australia, China, India, Hong Kong and New Zealand) said that MyAPNIC tools were unresponsive and that MyAPNIC needed some improvement in contents and accessibility.

A.2.7 APNI basis	C should provide o	consultancy services specific to	individual Member's needs on a user-pays
	Mean	Standard Deviation	Number of Responses
A.2.7	6.83	2.40	476

Comments by respondents:

One respondent (Hong Kong) worried that APNIC may not be able to remain neutral and possibly become biased towards profit making.

A.2.8 routab	APNIC should lity/reachability issu	spend ues	more	effort	informing	network	operator	communities	on
	Mean		Star	ndard De	eviation		Number of	Responses	
A.2.8	7.67		1.93	3			472		

Comments by respondents:

Limited comments were received but one respondent suggested that APNIC should keep Members informed of issues relating to routing for better performance. APNIC should also extend its effort in informing network operators on reverse DNS, mail issues, SPAM etc.



4.1.3 Billing & Administration Services Summary



A maximum score of 10 and a minimum score of 1 was recorded, a range of nine for most questions in this sub-section.

A.3.1 The APNI enquiries	C Helpdesk provides	s timely and appropriate response	es for billing and administration
	Mean	Standard Deviation	Number of Responses
A.3.1	7.76	1.72	466

Comments by respondents:

The relatively high mean score for this question indicated that in general, respondents were satisfied with the response time and quality of responses to billing and administration enquiries by members. Nevertheless, one respondent from Indonesia thought APNIC should consider automating administration and billing procedures, in order to speed up the process for end-users.

A.3.2 The APNIC fee structure is reasonable and justified				
	Mean	Standard Deviation	Number of Responses	
A.3.2	6.96	2.03	469	

Comments by respondents:

Respondents were generally keen for APNIC to structure its fees based on the size of companies and the possibility of a lower fee. High fees for some APNIC services had also formed a barrier for smaller entities to take up those services. Respondents (India and Singapore) also suggested APNIC to consider billing in local currencies; it should be noted, however, that billing complexity either by time and currency conversions would have cost implications. FGD participants in Sydney highlighted the fact that although fees were of no concern, the procedures involved were generally designed to make things easy for APNIC staff and not necessarily for members.

A.3.3 APNIC fees should be reviewed on a fixed regular schedule				
	Mean	Standard Deviation	Number of Responses	
A.3.3	7.40	1.92	464	

Comments by respondents:

The high mean score indicated that respondents preferred that APNIC review its fees on a fixed regular schedule.

A.3.4 APNIC provides a 50% discount for Least Developed Countries. This should be further lowered			
	Mean	Standard Deviation	Number of Responses
A.3.4	6.98	2.44	463

Comments by respondents:

There were limited comments made by the respondents. Most respondents who thought that the overall fee structure could be further reviewed were from Developing Economies (46%) especially India and LDEs. There was no difference in opinions between the big and small organisations.

A.3.5 MyAPNIC features to support billing and account administration are adequate				
	Mean Standard Deviation Number of Responses			
A.3.5	7.57	1.74	465	

Comments by respondents:

Limited comments were received from respondents. There was no significant difference in opinion by size of organisations. Individual respondents commented that transferring between addresses ranges from one company to another or merging addresses ranges under two different companies was quite difficult.



APNIC should allow Members to pay their fees in the following cycle:



About half the respondents thought that the current annual fee cycle was appropriate. A little over a third would prefer have either half-yearly or quarterly. Respondents from Developing and LDEs preferred six-monthly and quarterly fee cycle. APNIC Members highlighted a critical issue in APNIC's current schedule of billing. Some Members said that they needed a longer notice period to effect payment because of challenges with tax/legal/government issues as well as a long internal process of fee payment within the companies that resulted in delay in payment of APNIC fees. Respondents from small to medium organisations (India, Singapore, Australia, Japan and China) were of the view that notifications of APNIC's invoices need to be sent with sufficient notice.

4.1.4 APNIC Priorities

The following are the rankings by Members of priorities APNIC to focus upon.

4.1.4.1 Communication



*Note: A low score means a high priority.

Respondents suggested that priority to be given to support network engineering education in the Asia Pacific region, and the least priority to be given to expanding training activities in scope, geographical coverage and online options. The differences are minor and are statistically indistinguishable from each other.

A.4.1.1 Expand APNIC involvement in the support and development of regional operator forums A.4.1.2 Represent the needs of the Asia Pacific Internet community (including governments, regulators and technical organisations) in Internet Governance				
A.4.1.3 Expand to	raining activities in	scope, geographical coverage, and	l online options	
A.4.1.4 Support n	ietwork engineering	g education in the Asia Pacific reg	ion	
	Mean	Standard Deviation	Number of Responses	
A.4.1.1	2.42	1.15	392	
A.4.1.2	2.46	1.15	402	
A.4.1.3	2.48	1.04	386	
A.4.1.4	2.41	1.12	418	

Comments by respondents:

One respondent (Indonesia) commented that awareness and knowledge updates from APNIC would be important in light of the rapid changes in technologies.

The FGD participants in Sydney felt strongly about APNIC's training activities. They thought that training should be two-fold, one focusing on the use of APNIC's resources, and the other on best practice and new skills in ISP operation. Of course they felt APNIC should be involved in both aspects of training but focus on the latter more heavily. Training by APNIC needed to be kept under review so as to maintain relevance, cost containment and avoid duplication of efforts.



4.1.4.2 Services

*Note: A low score means a high priority.

Respondents gave the top priority APNIC supporting IPv6 deployment; fewer saw the urgency to provide more educational materials regarding APNIC services.

Participants at the focus group discussions in the four locations (Beijing, Hong Kong, Sydney and Tokyo) commended APNIC's role so far in IPv6 deployment, although participants in Hong Kong were of the view that APNIC should do more to get others to shoulder some of the assistance/information and cost burden. In Beijing, participants felt that APNIC should provide more information on IPv6 success stories, with details on all aspects of IPv6 deployment. The

Japanese participants thought that APNIC should do whatever possible to help or facilitate those economies who had not prepared themselves for the transition yet.

A.4.2.1 Streamline resource requests and allocation processes A.4.2.2 Support IPv6 deployment A.4.2.3 Enhance the reliability and availability of APNIC services				
A.4.2.4 Provide m	ore educational ma	terials regarding APNIC services		
	Mean	Standard Deviation	Number of Responses	
A.4.2.1	2.48	1.09	393	
A.4.2.2	1.85	1.04	406	
A.4.2.3	2.64	0.98	403	
A.4.2.4	2.82	1.10	414	

Comments by respondents:

Respondents said service delivery should be kept simple, while focusing on keeping Members and the network up-to-date on latest information. It was also recommended for APNIC to provide monthly/quarterly statistics reports on Internet usage behavior, trend patterns and geographic capabilities to understand the end-users who use addresses.

Among some of the suggestions was the need to provide an escalation contact for registered members, more educational materials regarding APNIC services, and Asia-oriented psychology training to non-Asia based staff.

One Australia respondent commented that APNIC should not compete in the commercial service provision markets, but should limit its commercial activities to those directly related to the fundamental addressing services it provides.

4.1.4.3 Technical



*Note: A low score means a high priority.

Respondents ranked routing and registry security improvements as the top priorities under Technical and ranked of low importance in APNIC investigating new technical services. There is

a need for APNIC to monitor technical changes taking place which could impact Internet operators in the Asia Pacific (and globally).

 A.4.3.1 Do more research and development activities, such as network monitoring and measuring A.4.3.2 Publish statistics, analysis, and articles about Internet development and use A.4.3.3 Routing and registry security improvements A.4.3.4 Investigate new technical services 			
	Mean	Standard Deviation	Number of Responses
A.4.3.1	2.25	1.13	406
A.4.3.2	2.40	1.06	401
A.4.3.3	2.17	1.01	400
A.4.3.4	3.00	1.07	398

Comments by respondents:

Although APNIC live chat was deemed to be a great tool, an Australia member commented that sometimes the response was not quick enough.

4.2 Section B Assessment - For all APNIC Stakeholders

4.2.1 APNIC Public Services

4.2.1.1 Policy Development



The differences between APNIC Members and Stakeholders mean scores were marginal indicating both APNIC Members and Stakeholders had a high level of agreement over policy deployment.

B.1.1.1. The APNIC Policy Development Process is an effective way of developing resource management policy.				
	Mean	Standard Deviation	Number of Responses	
Member	7.07	1.85	433	
Stakeholder	7.33	1.98	264	

Comments by respondents:

Respondents noted that more initiatives were needed to encourage public participation and to increase awareness especially on IPv6 migration. Individual respondents also noted that APNIC should keep in mind localized issues when developing global level policies and to approach governments for their points of view or give space for government representation through an advisory committee. In that way, APNIC's policies could become a guideline for government in drafting law, government regulation or minister regulation related to resource management policies. A new challenge for APNIC is to get sensible dialogues with governments without surrendering control. On the other hand, APNIC could use governments to disseminate policies or information about resource management. The positive aspect of APNIC's policy development is that (i) it could focus locally, and (ii) when it is not about a local matter, it would mean that the region speaks as one strong voice. A few respondents from Developing economies (Sri Lanka, India and Pakistan) noted the importance of involving a wider community in policy development.

B.1.1.2. The APNIC frequently.	needs a Policy D	evelopment Process that a	llows policies to change more
	Mean	Standard Deviation	Number of Responses
Member	6.35	1.96	428
Stakeholder	6.71	2.31	259

Comments by respondents:

Respondents' comments indicated the need for more flexibility; policies should be reviewed and revised regularly, but not in such a way that Members cannot keep up. Any changes in policy should be circulated to members.

4.2.1.2 Information Dissemination



APNIC Members and Stakeholders recorded the lowest mean score in the easy use of remote participation options at APNIC meetings, indicating that APNIC Members and Stakeholders did not think the technical support was sufficient for remote participation. Also the variation in Internet speeds in some countries may have affected the remote option.

B.1.2.1. The content and to attend.	d activities of A	PNIC Meetings are at a level of	f importance and interest that I want
	Mean	Standard Deviation	Number of Responses
Member	6.81	2.23	432
Stakeholder	7.25	2.22	263

Comments by respondents:

Few comments were received for this question. Generally, responses were positive with some respondents from the LDEs (Nepal, Cambodia and Bangladesh) indicating the need for APNIC to provide more information on member countries and to send regular email updates.

B.1.2.2. The remote p archived media) at AP	articipation option NIC Meetings are	s (video and audio streams, liv easy to use.	e session transcripts, chat rooms and
	Mean	Standard Deviation	Number of Responses
Member	6.76	1.96	426
Stakeholder	7.21	1.95	259

Comments by respondents:

A respondent from Papua New Guinea linked the difficulty in remote participation to the slow Internet connectivity in developing member economies. Apart from that, an Indian respondent urged APNIC to consider using local associations and NGOs in various economies for outreach activities.

B.1.2.3. The APNIC website is easy to use.				
	Mean	Standard Deviation	Number of Responses	
Member	7.01	2.12	430	
Stakeholder	7.46	1.97	261	

Comments by respondents:

Respondents urged APNIC to reduce the technicality of messages for non-IT readers and to provide these messages in local languages of members. A respondent from Nepal commented that the video and audio were not functioning properly. In addition, APNIC could consider making use of new channels for communication: social media, micro blogs, online messaging, and provide video and audio streams for learning.

B.1.2.4. The APNIC website helps me understand the activities of APNIC.				
	Mean	Standard Deviation	Number of Responses	
Member	7.27	1.97	428	
Stakeholder	7.56	2.00	261	

Comments by respondents:

Respondents recorded the need for APNIC to provide better search tools online; it is hard to find information on the website following the recent website update. Information to be produced in PDF format was desired.

4.2.1.3 Ways to Improve APNIC's Website

Comments by respondents:

Respondents suggested the inclusion of video materials as tutorials and to provide online chat with the technical support as to minimize the response time. Ideally, the support should be extended 24/7 and in different languages.

Some other suggestions made by respondent include:

- Inclusion of country chapters;
- Consider mobile web services;
- Easy and fast access to the site and documents repositories;
- Minimise the use of jargon and simplify the language (less technical terms).

4.2.1.4 Technical Services



APNIC Members and Stakeholders had a strong level of agreement that the technical services were of high quality, usability and reliability.

B.1.3.1. The APNIC Whois Database operates at a high level of quality, usability and reliability.			
	Mean	Standard Deviation	Number of Responses
Member	7.63	1.90	431
Stakeholder	7.64	1.97	266

Comments by respondents:

Respondents commented that the Whois database was not up-to-date. APNIC must find a way to encourage ISPs to keep it updated with correct information. Whois service should implement an automatic referral for more specific blocks allocated to/by an NIR so that users do not have to re-query the NIR's Whois database directly. On top of that, the creation of Person Object is problematic; APNIC no longer sends email once the Person Object details are filled up. Once addresses register in the APNIC database, these addresses should be also available in RADb.

B.1.3.2. The APNIC Reverse DNS service operates at a high level of quality usability and reliability.			
Mean Standard Deviation Number of Responses			
Member	7.64	1.92	428
Stakeholder	7.62	1.93	260

Comments by respondents:

Limited comments were received but a respondent noted a possible improvement to the way RDNS is setup, as it was quite confusing after using the much simpler service of ARIN's.

4.2.2 IPv4 Depletion

When free IPv4 address pool gets depleted and organisations can no longer get IPv4 addresses from the Regional Internet Registries, and the transfer of address space is unavoidable. While APNIC has adopted a policy that allows proper registration of address transfers, the transfer process itself is currently left to the industry players.

This survey question examined the role that APNIC Members and Stakeholders think APNIC should play in facilitating IPv4 transfers. The role of developing policies and guidelines for transfer was seen as the most important role that APNIC should be playing in facilitating IPv4 address transfers. More Stakeholders gave greater importance to it than APNIC Members.

Possible roles that Members would like APNIC to play in facilitating IPv4 address transfers



Comments by respondents:

Respondents commented that APNIC should play an active role in facilitating migrations to IPv6 by mediating the transfer of IPv4 resources, ensuring that IPv4 addresses are transferred more on a per-need basis introducing some transparency and standardization to the trading of addresses process, and ensuring that addresses are sold at reasonable and affordable rates. APNIC should also engage in more awareness initiatives for general public and encourage the use and deployment of IPv6. Best practices of countries that have successfully transferred from IPv4 to IPv6 could be reported and shared with members.

4.2.3 IPv6 Deployment

APNIC's efforts to support IPv6 deployment have been focused on: simplifying and streamlining IPv6 address distribution, implementing full IPv6 compliance within APNIC's own services, awareness rising (to industry, governments and others) and technical trainings.

APNIC Members and Stakeholders shared two similar results from this question. Both recorded the highest mean score in their selection of "My organisation has a formal plan for IPv6 deployment" and the lowest mean score for "My organisation has an IPv6 transition budget". More than half (57%) of the respondents from developing and a 12% from LDEs said they had a formal plan for the deployment of IPv6. Larger organisations were seemingly but not significantly more ready for IPv6 transition than smaller organisations. But of those who said their organisations had a plan, only 19% said they had a transition budget, suggesting that most plans were either informal or unrealistic or impracticable.



4.2.3.1 State of Readiness of Your Organisation in IPv6

4.2.3.2 Ways APNIC can help customer uptake of IPv6

Comments by respondents:

The most frequent comment by respondents was the suggestion for providing training/seminars/workshops in different regions and languages. Secondment of expert technical support staff with network operators from developing countries was also desired (Papua New Guinea, Member). Greater awareness among industry was necessary (eg. APNIC could develop a Flash animation about IPv6 and publish it on popular sites such as Google, Yahoo, MSN, Facebook; or through media interactions) (Mongolia, Stakeholder); APNIC could also lobby network hardware manufacturers to update older hardware to IPv6 (Australia, Member). Guidelines and best practices for overlay and migration should be provided (Nepal, Stakeholder), apart from only providing more information about the practicality of IPv6 deployment and materials to assist with developing a plan to deploy IPv6 (Australia, Member). APNIC may also consider coordinating with regulatory agencies to deploy IPv6 (Nepal, Stakeholder) and arrange an IPv6 transit provider for new clients who want to deploy IPv6 (Bangladesh, Stakeholder). Respondents also suggested an increase in the content hosted on IPv6 hosts (India, Stakeholder) and a reduction in billing of IPv6 address space. Further promotion of offerings of assistance would be welcome (India, Member).

4.2.3.3 Ways APNIC can help overcome the hurdles of IPv6 deployment

Comments by respondents:

Respondents recorded the need to train vendors and Members with access and to share best practices of how corporate entities/countries performed the IPv4 to IPv6 transition. Raising awareness was suggested along with the need to:

- Enforce development projects to cater/implement IPv6 ready products and deadlines for larger organisations to implement IPv6 (Maldives, Stakeholder);
- Dual stacking (IPv4/IPv6) should be considered (India, Member);
- Stop allocating IPv4 addresses (Thailand, Member);
- Technical meetings with vendors such as Cisco, Juniper, Extreme, Force-10, Brocade, etc will accelerate the deployment of IPv6 (Indonesia, Member);
- Develop applications for IPv6 (China, Stakeholder);
- Issue a white paper giving both technical details of service providers who have already migrated to IPv6, who have partially using IPv6 and new service providers who want to start using IPv6 (India, Member);
- Set up an IPv6 backbone network (China, Stakeholder);
- Network equipment vendors should provide software upgrade for old equipment, and enable IPv6 without additional cost (Thailand, Member);
- Minimise the cost of IP6 address space for current IP4 holders (Australia, Stakeholder);
- The standards surrounding IPv6 need to stop being revised every three months (Australia, Member).

4.2.3.4 Information required by Stakeholders to make decision to deploy IPv6 in the next 12-24 months

Comments by respondents:

If Stakeholders are to make a decision to deploy IPv6 within the next 12-24 months, it is important that APNIC assists by providing information on costs required to upgrade the existing network to support IPv6, technical information (IPv6 inter- and intra-routing architecture, DNS configuration information, addresses range allocation, and killer applications for IPv6) on transition and deployment, and the risks involved. Stakeholders would also benefit from the provision of free allocations for testing purposes as it would help understand the requirements for deploying IPv6. Further training and awareness on IPv6 deployment, as well as case studies of success cases and best practices from countries that have already transitioned from IPv4 to IPv6 would be useful.

4.2.3.5 APNIC facilitates IPv6 rollout/uptake

During the focus groups consultation, there were suggestions that APNIC should play a role in facilitating IPv6 rollout/uptake by sharing best practices, providing the necessary training and creating awareness.



In general, both APNIC Members and Stakeholders agreed that APNIC should play a significant role in facilitating the IPv6 rollout/take up. Some, however, felt that APNIC's role was purely to allocate the resource and that it should not get further involved. On training, one respondent wrote that technical training should come from vendors and/or organisations that provide qualifications, and since APNIC could not do these things, APNIC should cease all direct training and should only support and/or coordinate training provided by others.

B.3.5. Creating awaren	ness		
	Mean	Standard Deviation	Number of Responses
Member	8.19	2.22	425
Stakeholder	8.32	2.09	238

Comments by respondents:

Respondents recorded the need to enforce deadlines on Members to move to IPv6 and to liaise with governments and other Stakeholders to promote the uptake of IPv6 allocations.

B.3.5. Provide training				
	Mean	Standard Deviation	Number of Responses	
Member	8.37	2.10	425	
Stakeholder	8.11	2.37	238	

Comments by respondents:

No elaborated comments were provided by the respondents but generally respondents suggested conducting training sessions and using social media so people get more familiar with IPv6.

B.3.5. Sharing best practice				
	Mean	Standard Deviation	Number of Responses	
Member	8.62	2.00	416	
Stakeholder	8.47	2.09	236	

Comments by respondents:

The following were suggested on what APNIC could do to share best practices:

- Provide public statistics on adoption by country and other relevant literature;
- Certify hardware vendors and service providers who provide IPv6 products/services;
- Provide a small address pool for free allotment to existing IPv4 customers to enable testing. This will increase confidence in the deployment of IPv6;
- Fund open source implementations of important IPv6 software such as DHCPv6.





APNIC Members (63.89%) and Stakeholders (36.11%) recorded the highest mean score for the question asking about whether APNIC should establish more partnerships to support training and education for members' needs. Respondents recorded the lowest mean score for APNIC training costs, indicating that APNIC Members and Stakeholders, particularly from the

developing and least developed countries, were not satisfied with the costs charged for APNIC training.

B.4.1. I am satisfied with the quality of APNIC training			
	Mean	Standard Deviation	Number of Responses
Member	7.16	1.87	408
Stakeholder	7.21	2.12	228

Comments by respondents:

Respondents were generally satisfied with the training provided by APNIC but one respondent (Nepal, Member) wanted APNIC to conduct a training needs analysis before finalising the training contents and to increase the variety and scope of their trainings. They also thought the APNIC training team needed more "real world" experience.

On the other hand, one Stakeholder from Australia commented that APNIC should focus on its role as the allocator of address space and stop providing training. Other respondents from Australia and United States, mainly Stakeholders, felt that APNIC had no real expertise in providing technical training and attempts to provide technical training could interfere with APNIC's ability to assist Members coordinate the access of appropriate technical training from vendors or institutions providing technical qualifications, which would be more beneficial to its members.

B.4.2. I am satisfied with the cost of APNIC training				
	Mean	Standard Deviation	Number of Responses	
Member	6.77	2.05	410	
Stakeholder	6.58	2.28	226	

Comments by respondents:

One respondent suggested a reduction in cost for training and that training should be arranged in leading cities of every member nation.

B.4.3. APNIC should establish more partnerships to support training and education for organisations in need				
	Mean	Standard Deviation	Number of Responses	
Member	7.62	1.96	407	
Stakeholder	7.87	2.13	230	

Comments by respondents:

Respondents commented that APNIC should not compete with commercial training organisations, but should train only in matters that directly relate to APNIC services. Partnerships with commercial organisations are an alternative for providing training.

B.4.4. APNIC training and education services are helping our staff to enhance their technical capabilities			
	Mean	Standard Deviation	Number of Responses
Member	7.28	2.06	405
Stakeholder	7.36	2.29	225

Comments by respondents:

Few comments were received for this question but generally respondents felt that APNIC training and education services were helping their employees enhance their technical capabilities.

B.4.5. APNIC should offer courses that lead to an APNIC Certification				
	Mean	Standard Deviation	Number of Responses	
Member	7.28	2.40	414	
Stakeholder	7.53	2.44	230	

Comments by respondents:

Respondents were in high level of agreement that APNIC should offer courses that lead to an APNIC Certification. Respondents, however, also commented that Certification should be last on the list of APNIC's priorities. APNIC should focus training from its involvement in the Internet community. The certification would be a good option to build the knowledge base of recipients to further their skills with interest knowing that a result of such training should be recognised throughout the Asia Pacific region as well as other groups such as RIPE, AFNIC, etc.

One individual respondent (Maldives, Stakeholder) commented that he/she did not receive certification at his/her last training attended.



It appeared that less than 25% of APNIC Members and Stakeholders were actually accessing APNIC online training. Limited sign-up opportunities and high training costs were issues faced by the respondents from the Developing Economies (Indonesia, Member and Cook Islands, Stakeholder). One respondent (India, Stakeholder) also commented that APNIC should circulate the training information to all and not limit it to APNIC Members only.





APNIC Members and Stakeholders have the same level of agreement about the relevancy of APNIC eLearning contents to their organisations.



APNIC Members and Stakeholders shared two similar results from this question. Both recorded the highest mean score in their selection of "Local" and the lowest mean score for "AP wide e.g. APRICOT". Attending training locally is far preferred.

4.2.5 Internet Governance

Governments have an increasing interest in Internet Governance (which includes addresses distribution). Various forums have been established to accommodate this interest such as IGF, ICANN GAC, as well as inclusion of Internet related topics in existing forums such as ITU, United Nations, APEC TEL, etc.



B.5.1. Should governments in the Asia Pacific Region be more involved in APNIC?			
	Mean	Standard Deviation	Number of Responses
Member	6.07	2.92	420
Stakeholder	6.85	2.92	235

Comments by respondents:

While respondents felt strongly about government involvement and APNIC's involving the governments by keeping them aware of APNIC matters, some respondents from a mix of developed (particularly from Australia) and Developing Economies commented that Internet governance should be isolated from governments. One respondent (Nepal, Stakeholder) said that very often governments were bureaucratic in technical decision making. FGD participants in all locations felt that government relations were of growing importance and APNIC should engage with them further; it was noted, however, that the level of engagement with governments would have to be customized based on the different needs and levels of development in each country.

B.5.2. APNIC's current level of engagement with governments in Asia Pacific region is fine.				
Mean Standard Deviation Number of Responses				
Member	6.56	2.03	413	
Stakeholder	6.70	2.18	231	

Comments by respondents:

Respondents suggested APNIC should be a regular liaison with governmental policy makers and should engage in an advisory role for governmental information technology roadmaps. APNIC also could play a role as partner between government and Internet industries. APNIC could facilitate training for government covering in more detail the technical aspects of APNIC activities, as well as conduct more initiatives to share APNIC issues to the government within the region.

In a focus group meeting, one ISP association member said that APNIC is seen as a trusted source on technical information and so should be encouraged to play that role. Government's in

that country arrested an ISP sysadmin because traffic passing through the company carried pornography. Had APNIC been able to give technical information explaining how the Internet works, perhaps the sysadmin might not have been arrested.

B.5.3. APNIC should do more to support specific regional Internet Governance activities.			
	Mean	Standard Deviation	Number of Responses
Member	7.02	2.20	415
Stakeholder	7.63	2.22	230

Comments by respondents:

One respondent (Indonesia, Stakeholder) commented that APNIC could encourage each country in Asia Pacific Region to establish its local IGF.



APNIC Members and Stakeholders recorded the lowest mean score on encouraging more government officials to participate at APNIC's decision-making meetings.

B.5.4. Engagement with Governments

Comments by respondents:

Respondents felt strongly about governments' involvement and intervention. Some suggested that APNIC should stay the mediator between industries and governments, and others suggested that governments should be treated like any other user group. Others stated that if governments were to be included, then civil society groups should be too.



B.5.5. There are suggestions that a Government-Advisory Committee, similar to ICANN's, be formed APNIC. Do you agree?

	Mean	Standard Deviation	Number of Responses
Member	6.08	2.50	416
Stakeholder	6.63	2.68	234

Comments by respondents:

Respondents agreed that government involvement was necessary but only to a limited extent. Government's role was important to facilitate APNIC's work. There were also concerns of privacy and worried over APNIC ability to remain independent. Many felt that over-involvement of governments would result only in delaying the deployment of policies and hinder innovation, coordination and cooperation among members. If governments were to be involved, the terms of reference would have to be clearly defined so that there was no mixing of politics in techrelated decisions. If a GAC-like entity is formed, then it should mainly play a role in educating government officials on APNIC core missions, and as a platform for sharing best practices. FGD participants in Beijing, Hong Kong and Japan showed no signs of support for a GAC; those in Sydney felt that it was better to encourage the participation of existing government members, than give them a separate formal role as a GAC.

It was said that APNIC could tap on governments as a means to do policy dissemination to reach out to people who do not know about resources management, in order to increase people's knowledge and skills in the ICT field.



B.5.6. If the Internet Governance Forum (IGF) continues, APNIC should play a more active role.			
	Mean	Standard Deviation	Number of Responses
Member	6.99	2.02	411
Stakeholder	7.54	2.22	228

Comments by respondents:

Respondents were of the opinion that APNIC should play a role as liaison to establish a closer relationship with respective governments. APNIC could provide papers and advocate safe Internet governance and policy development for the region as well as collate and share best practice experiences, and help in policymaking. APNIC could balance the role of ICANN and IGF as a key ASO member of ICANN, make sure that "user groups" in a country are well represented and not limited to comments and opinions given by the country's IT ministry. APNIC could plan APNIC meetings alongside with IGF, participate in workshops arranged in collaboration with IGF and be present in any IGF meeting/training/conference and encourage Members to attend.

4.2.6 APNIC Representation



B.6.1. The APNIC Executive Committee election process is clear and transparent.			
	Mean	Standard Deviation	Number of Responses
Member	7.11	1.93	413
Stakeholder	7.11	1.98	228

Comments by respondents:

Respondents particularly from the Developing Economies (44%) were generally positive about this but one Australian stakeholder respondent commented that the vote counting was unclear, and the vote structure was "bizarre" for a membership organisation. Additional improvements desired by some of the respondents included: introduction of online voting (Bangladesh and Philippines, both Member), reduced terms for EC members (Indonesia, Stakeholder), providing for "Economy"/"Sub-Regional" representation India (Member), introduction of a point based system (Pakistan, Member), publishing of EC members' credentials (Philippines, member) and the implementation of the Election Review Panel (Australia, Stakeholder).

NIRs voting as a block should be replaced by a process where NIR recipients vote individually. Voting by block size should be abolished in favor of a more egalitarian voting process and a better representation of the LDEs (India, New Zealand and Papua New Guinea (all Members)).



B.6.2. The regional Internet Community would benefit from more localised support.				
	Mean	Standard Deviation	Number of Responses	
Member	7.34	1.86	411	
Stakeholder	7.52	2.12	229	

Comments by respondents:

Respondents urged local more helpdesks to be established and to improve call support. There were also suggestions that APNIC play a role to accept complaints from NIR community that were not satisfied with their NIR. APNIC should re-evaluate the NIR status based on the quality of services and regularly conduct a symposium to familiarise on the scope/responsibilities of every entity of the Internet.



With regards to a NIR, 316 out of 618 in total respondents to this question indicated that their economies do have such an entity. Out of these 316, 57% were from the Developing Economies and 16% from the LDEs.

B.6.3. National Internet Registry availability in each economy

Comments by respondents:

No comments were received.





Some 67% of respondents had no NIRs in their economies and felt that there was no need for one. Respondents from China and India contributed to the two highest percentages, 19% and 13% respectively.

However, it should be noted that there were respondents from economies such as China (12%) Indonesia (3.4%), Japan (0.6%), Taiwan (0.6%) and Vietnam (1.7%) who were not aware of the existence of an NIR in their economies.

B.6.4. National Internet Registry needs in each economy

Comments by respondents:

Some of the respondents thought that there was a need for an NIR in their economies, and suggested that the NIR's role be limited to providing technical and training support. Looking after legal issues and providing a cost effective resource allocation service could be another area of the NIR's role. NIRs should be neutral and free from government intervention.

One respondent (United States, Stakeholder) stated that NIRs should do no more than act as a translation service and local agency for APNIC, while some respondents (Australia and Philippines, both Stakeholders)found no need for NIR stating that APNIC services were good enough. The latter also suggested the following: i). NIR Members should all be considered as APNIC Members and have a direct vote in APNIC corporate governance, without the option for the NIR to control those votes via a proxy, ii). NIRs should not have any local decision making ability, and they should do no more than act as local voices for APNIC, iii). All NIRs should be audited by APNIC on an annual basis, and the results of those audits (not the details, the results) should be published prominently for public review and comment.



5. Issues for In-Depth Exploration

The findings from the survey provide insight into APNIC Members and Stakeholders views of how APNIC can improve their existing services, especially with regards to the transition from IPv4 to IPv6, and training. The results give in-depth information as well as suggestions on very specific technical and administrative issues that will be of immense use to streamlining APNIC's functions. APNIC Members and Stakeholders seem to be of similar views on most issues, with few discrepancies recorded. The findings and relevant suggestions will be discussed in more detail below:

Facilitating Transition from IPv4 to IPv6

APNIC Members felt that APNIC's current priorities should be to increase support of network engineering education in the Asia Pacific region, further the deployment of IPv6 and improve routing and ensure registry security. There were a few suggestions calling for the introduction of addresses de-allocation policy to discourage the use of IPv4 and encourage the uptake of IPv6.

Like APNIC Members, Stakeholders thought that APNIC should play a role in facilitating IPv6 deployment, by developing policies and guidelines for the transfer of addresses to aid APNIC Members in their transition process. Stakeholders were also of the view that APNIC could play a increasing awareness of need IPv6, perhaps providing role in the for training/seminars/workshops in different regions and languages to support the uptake of IPv6. Cost was seen as the most significant obstacle to most respondents, and many organisations did not have an IPv6 transition budget. There were requests to reduce the cost of IPv6 address space for current IP4 holders as it would encourage more transitions. There were also requests to provide detailed cost information for the upgrading of existing network infrastructure to support IPv6, including hardware requirements and risks involved.

Localised Services

APNIC Members are generally satisfied with the general services provided by APNIC. Most respondents were concerned that APNIC should focus on improving its current functions rather than expanding its current scope of service. In line with this, it was indicated that the organisation should improve its services and functions, by way of providing more localised support (in terms of language). There were also requests for training and workshops, increasing of the current Helpdesk support hours (to 24/7 support), security incident support, and consulting on Internet setup, all at localized or at least regional levels. Real time Helpdesk support was underscored by the need for assistance to be made available at all times and not only during Australian working hours. An escalation procedure needs to be developed to shorten the turnaround time for Helpdesk service.

Costs and Fees

There was also concern over payment of fees with further requests for reducing fees for addresses ranges, and calls for removing APNIC Membership charges for governments.

Although, most respondents were satisfied with the training provided, agreeing that it was relevant to their organisations, the costs of APNIC training was of concern to some. Stakeholders felt that APNIC should establish partnerships to support more training and educational programmes. Apart from that, APNIC should act more sensitively in collecting payments from members.

Government Relations

APNIC's government relations in the Asia Pacific region were deemed to be satisfactory, and respondents were in favour of APNIC doing more to support specific regional Internet Governance activities, and working with governments to promote best practices. However, very few Stakeholders felt that there was need for government officials to participate in APNIC's decision-making meetings; respondents also did not feel strongly about forming a Government Advisory Committee (GAC) similar to ICANN's. On the other hand, respondents were of the opinion that if the Internet Governance Forum (IGF) continues, then APNIC should play a more active role.

With regards to an NIR, half of all respondents stated that they had such an entity in their country, while those that did not felt that there was no need for one.

Website and Information Dissemination

With regard to information dissemination, Stakeholders felt that the website was the best means for understanding APNIC and the organisation's activities. The remote participation options used at APNIC meetings were rated lower, but the problems with these tools may be attributed to variances in Internet connectivity among participants at these meetings. Although general consensus was that the website was useful, it could be improved if it included interactive online tutorials and support in a variety of languages. Respondents also felt that APNIC's Reverse DNS and Whois Databases were operating at a high level of quality, usability and reliability.

Stakeholders felt that APNIC's Policy Development process was an effective way of developing resource management policy.

Generally, Developing Economies are asking for attention in many areas that would require a greater share of APNIC's resources to be allocated.

6. Conclusion

When comparing the two most recent surveys (2007 and 2009) with the current survey under discussion (2011), it is evident that the focus remains on three main areas: the surveys are aimed at eliciting information on existing services, future allocation of resources and, IPv6 readiness and deployment. Existing services include a look at APNIC's performance on the general and technical services they provide, and communication and information dissemination (via website, policy, etc). Although much of the survey has remained the same over the years, the 2011 survey deviates slightly in structure and includes a new section on billing and administration services, replaces the "future allocation of resources" with a section that focuses more specifically on APNIC's priorities.

The survey findings from all three years consistently show that the services provided by APNIC are generally above average and well received. The suggestions provided by respondents are also consistent, with calls for more training, more localised initiatives, and the need for more action on IPv6 deployment. While APNIC has been addressing these member concerns over time, it must be noted that given the diversity within its network, the organisation cannot heed every suggestion and recommendation made as they may be in conflict with each other, may not fit into APNIC's overarching mission, or may not be achievable within available resources.