

# APNIC EC Meeting Minutes

Face-to-Face meeting, Colombo, Sri Lanka

Sunday, 2 October 2016, 9:30 – 17:15 (UTC+5:30)

**Meeting Start:** 9:30 (UTC+5:30), Sunday, 2 October 2016

## Present

Gaurab Raj Upadhaya (Chair)  
Rajesh Chharia (Secretary)  
Jessica Shen  
Kam Sze Yeung  
Kenny Huang  
Paul Wilson  
Roopinder Singh Perhar

Craig Ng  
Richard Brown  
Sanjaya  
Connie Chan

## Apologies

James Spenceley (Treasurer)

## Agenda

1. Opening of meeting and declaration of quorum
  2. Agenda bashing
  3. Declaration of interests
  4. Review of minutes of last meeting and record of circular resolutions passed since the last meeting
  5. Matters arising from the last meeting
  6. Chair update
  7. Secretariat report
  8. NIR membership options analysis
  9. Financial reports
  10. IANA transition update
  11. APNIC Survey update
  12. APNIC Foundation update
  13. NRO Number Council election procedures
  14. Risk Register
  15. 2017 budget outlook
  16. Preparation for APNIC EC Retreat
  17. Any other business
  18. Next EC meeting
-

## Minutes

### 1. Opening of meeting and declaration of quorum

The Chair of the Executive Council welcomed all attendees and noted that James Spenceley sent his apologies.

The Chair declared the meeting open at 9:30 (UTC+5:30) on Sunday, 2 October 2016, and noted that a quorum was present.

### 2. Agenda bashing

The Chair called for comments on the agenda. There were no changes to the agenda.

### 3. Declaration of interests

The Chair asked the EC members to review the Register of Interests (attached), and declare any potential conflicts of interests, and for any such declaration to be recorded in the minutes.

Craig Ng explained the reason for disclosure to ensure that the EC members are aware of their obligations to disclose any conflicts of interest that they may have, and to ensure they effectively manage those conflicts of interest as representatives of APNIC.

Gaurab Raj Upadhaya declared that he is the Chairman of Nepal Internet Exchange (NPIX).

Rajesh Chharia noted that he will email the Secretariat the additional company names with which he is associated.

*Action item 2016-08: RC to advise Secretariat of additional interests to be declared.*

*Action item 2016-09: The Secretariat to update the Register of Interests.*

### 4. Review of minutes of last meeting and record of circular resolutions passed since the last meeting

The following circular resolutions (which require the agreement of all EC members who are entitled to vote on the resolution) were passed by the EC during the period between the last EC meeting and this meeting, and are recorded in these minutes for completeness.

On 7 July 2016, the EC resolved that APNIC 42 will be relocated from Dhaka, Bangladesh to Colombo, Sri Lanka.

On 19 August 2016, the EC resolved to adopt the minutes of the EC meeting of May 2016 and the minutes of the EC meeting of 7 July 2016.

It was noted that the EC should also formalise its consent to enter into the IANA IPR Community Agreement, along with the other RIRs.

**Resolution 2016-19:** The EC resolved to ratify and affirm APNIC's execution and entry into the IANA Intellectual Property Rights Community Agreement (IANA IPR Community Agreement) together with the other RIRs, ICANN (on behalf of the Names Community), the Internet Engineering Task Force (for the Protocol Parameter Community) and the IETF Trust. A copy of the agreement is published on the IETF Trust's website at: <http://trustee.ietf.org>.

Motion proposed by Gaurab Raj Upadhaya, and seconded by Rajesh Chharia.  
Passed unanimously.

## **5. Matters arising from the last meeting**

The following matters were completed:

- Action item 2016-03:** The EC will provide feedback on the survey questions to the Secretariat
- Action item 2016-04:** The Secretariat to put the current risk register on the EC twiki
- Action item 2016-05:** The Secretariat to liaise with Roopinder Perhar on WH&S reporting requirements
- Action item 2016-06:** The Secretariat to arrange APNIC's WH&S consultant to report to the EC during the EC meeting in Brisbane in November 2016
- Action item 2016-07:** The Chair asked the EC members to fill out the EC travel plan by the end of May 2016

There were no outstanding actions from previous meetings.

## **6. Chair update**

The Chair advised that he gave the opening address at the APNIC staff conference that was held in Brisbane back in July when he was in the region. It gave him an opportunity to share his personal journey and experiences with APNIC staff.

The APNIC Staff conference was a comprehensive three-day program for staff to learn from and be inspired by the experiences of others.

The Chair advised that the contract renewal with Paul Wilson has been concluded and completed. He is now a full-time employee of APNIC Pty Ltd, and is not on a rolling contract.

## **7. Secretariat report**

The DG spoke to the Secretariat report (attached).

On the subject of whois development, there was a discussion on how the membership is using the APNIC Whois Database. It is suggested that we add more details of whois usage to future reports.

The DG spoke to the slides that will be presented to the APNIC Member Meeting (AMM) (attached).

The EC considered the draft AMM agenda for APNIC 42 (attached). The Chair asked the Secretariat to draft a statement about the IANA stewardship transition to be made at the AMM.

**Resolution 2016-20: The EC resolved to approve the draft agenda for the APNIC Member Meeting of 5 October 2016.**

Motion proposed by Rajesh Chharia, and seconded by Jessica Shen.  
Passed unanimously.

**8. NIR membership options analysis**

Michael Hiller of KPMG joined the meeting via Webex for this agenda item, and gave an update on the current NIR membership options analysis.

*[Kenny Huang arrived and joined the meeting at 11:30]*

The EC discussed their views on the options presented, and agreed to allocate a substantial block of time to further discuss this issue at the EC retreat in Brisbane.

**9. Financial reports**

Richard Brown presented the Monthly Financial Report and the Investment Fund Management Report for August 2016 (attached). The EC considered and discussed the report, noting that it remains on track to report a strong position at the end of the financial year. The EC also noted that APNIC is solvent and able to meet all current debts.

The current projected operating surplus for 2016 is AUD 2.34M, which is 68% higher than the budget forecast. Revenue is tracking at 4% over budget, due to strong membership growth, and expenses are tracking at 1% under budget forecasts.

As of 31 August 2016, APNIC had a total of 5,809 Members serving 54 economies.

**10. IANA transition update**

The DG advised that the transition has happened, and the Service Level Agreement (SLA) for the IANA Numbering Services is in place and is active. One aspect of the SLA is the Review Committee. The Review Committee comprises representatives from each of the regions who will serve to ensure that the IANA Numbering Services Operator maintains the service level defined in the SLA.

**Resolution 2016-21: The EC resolved to appoint the two community-elected NRO Number Council Members as APNIC's representatives to the IANA Numbering Services Review Committee, with their term commencing on 1 January 2017 and expiring on 31 Dec 2017, and further appoint an APNIC staff member designated by the Director-General as the third, non-voting member of the Review Committee.**

Motion proposed by Gaurab Raj Upadhaya, and seconded by Roopinder Perhar.  
Passed unanimously.

The DG provided a short update on the ICANN CCWG workstream 2 that focuses on addressing accountability issues beyond the IANA Stewardship Transition.



The EC discussed how the new structure of the Post-Transition IANA (PTI) and various bodies supporting it would work. The EC asked the Secretariat to continue to inform and educate the community about the new system in a coherent way.

#### **11. APNIC Survey update**

Brenda Mainland joined the meeting for this agenda item and spoke to the APNIC Survey Report presentation (attached).

The EC discussed the positive results overall and noted the areas for further improvement. It was agreed that as usual, the EC would publish a response to the survey that would identify the priorities revealed by the survey, and direct the Secretariat as to their implementation.

#### **12. APNIC Foundation update**

Duncan Macintosh joined the meeting for this agenda item, and gave an update on the APNIC Foundation (attached).

Duncan advised that the APNIC Foundation was incorporated in Hong Kong on 28 September 2016. The EC discussed the board selection process and criteria of the APNIC Foundation.

#### **13. NRO Number Council election procedures**

The EC was briefed on the procedures to be followed for the conduct of the APNIC 42 NRO NC election (attached).

**Resolution 2016-22: The EC resolved to appoint Mr Rohana Palliyaguru as Election Chair, Mr George Kuo and Ms Connie Chan of the APNIC Secretariat as Election Officers, and Mr Pubudu Jayasinghe and Mr Tuan Nguyen as Election Tellers, for the APNIC 42 NRO NC election.**

Motion proposed by Gaurab Raj Upadhaya, and seconded by Roopinder Perhar.  
Passed unanimously.

#### **14. Risk Register**

The EC reviewed the current status of the APNIC Risk Register.

#### **15. 2017 budget outlook**

Richard Brown presented an overview of the 2017 budget outlook and baseline budget forecast to the EC (attached).

The EC will receive additional detailed 2017 budget projections before the next meeting in November at which the 2017 budget will be presented for approval.

The Property Sub-Committee noted that the property market is currently not very stable. There are options being examined and considered for APNIC's future accommodation requirements, but no decision yet as to how those will be satisfied.

## **16. Preparation for APNIC EC Retreat**

The Chair advised that the draft agenda for the EC Retreat is available on the EC wiki. A strategic planning review will be included as part of the agenda. He noted that certain strategic issues that were raised in the Survey will also be covered during the strategic planning session.

The Chair suggested the EC members arrive in Brisbane by Wednesday morning, 23 November 2016 at the latest.

## **17. Any other business**

- a. EC travel schedule

The EC reviewed the conference attendance for the rest of this year. The Chair reminded that it was important to have EC representation at the RIR meetings.

## **18. Next EC Meeting**

The next EC meeting will be held in the APNIC office, Brisbane, 24-25 November 2016.

**Meeting adjourned at 17:15 (UTC+5:30), Sunday, 2 October 2016.**

### **Attachments:**

- A. Register of interest**
- B. Secretariat report**
- C. AMM presentation**
- D. AMM draft agenda**
- E. [Confidential material redacted]**
- F. August 2016 financial report & presentation**
- G. August 2016 investment report**
- H. 2016 Survey report**
- I. 2016 Survey appendix A**
- J. 2016 Survey appendix B**
- K. 2016 Survey appendix C**
- L. 2016 Survey results presentation**
- M. 2016 Focus Group and Interview Report**
- N. APNIC Foundation update**
- O. NRO NC election procedures**
- P. [Confidential material redacted]**
- Q. 2017 budget outlook**

# Agenda Item 3

## Declaration of Interests

## **EC Register of Interests**

### **Declaration of interests of EC members**

This register records the interests of EC members, which may conflict with the EC members' duties to APNIC. This register is accurate as at 12 April 2016.

Gaurab Raj Upadhaya declared that he currently holds the following positions:

- Employee of Limelight Networks as Director, Network Strategy and Interconnect
- Director of the Nepal Research and Education Network (NREN)

James Spenceley declared that he currently holds the following positions:

- Executive Director of Vocus Group Ltd
- Also see JRS Directorships (updated 15 Dec 2015)

Jessica Shen declared that she currently holds the following positions:

- Employee of CNNIC as Director of IP Operation, under the Ministry of the Cyberspace Administration of China

Kam Sze Yeung declared that he currently holds the following positions:

- Member of the HKNOG Program Committee
- Employee of Akamai Technologies, Inc

Kenny Huang declared that he currently holds the following positions:

- Member of IP Committee of TWNIC
- Board of Director, ISOC Taiwan Chapter
- Member of the Advisory Council of DotAsia Organization
- Director of Mind Extension Inc.

Rajesh Chharia declared that he currently holds the following positions:

- President of the Internet Service Providers Association of India (ISPAI)
- Director of the National Internet Exchange of India (NIXI)
- CEO of CJ Online Pvt. Ltd

Roopinder Perhar declared that he currently holds the following positions:

- Employee of Netplus Broadband Services Pvt Ltd
- Member of the Internet Service Providers Association of India (ISPAI)

Paul Wilson declared no conflict of interests.

# Agenda Item 7

## Secretariat report

# APNIC Secretariat Report October 2016

Draft v 1.4

**CONFIDENTIAL**

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# 1 Introduction

This report is provided to the APNIC Executive Council for the quarterly face-to-face meeting in Colombo, Sri Lanka on 26 October 2016. It also provides source material for Secretariat presentations during APNIC 42.

## 2 Services Area

APNIC Services Area is responsible for delivery of key services, including:

- o Membership administration and support
- o Internet resources delegation and registration

This Services report includes activity highlights and KPIs that support APNIC's strategic goals. Statistics included for Services area are as of 31 August 2016, therefore note that data for Q3 covers only 2 months: July and August 2016.

### 2.1 Membership administration and support

#### 2.1.1 Membership Statistics

APNIC Membership has seen a stable quarterly growth of around 250 new Members.

|                      | Q1   | Q2   | Q3*  |
|----------------------|------|------|------|
| <b>New members</b>   | 288  | 271  | 135  |
| <b>Total members</b> | 5502 | 5567 | 5824 |

Table 1 – Membership growth 2016

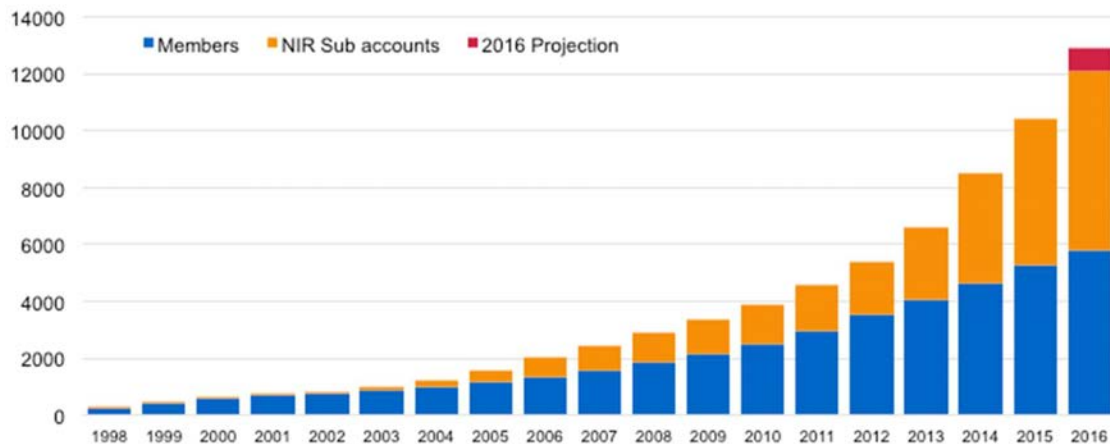


Figure 1 - Total membership

#### 2.1.2 Membership Industry type

During 2016 APNIC has worked with RIPE NCC to agree on a common list of member industry type. This list was implemented in APNIC's system in August 2016 and in the recent APNIC Member survey. APNIC Members are in the process of updating this information and it is expected that the updated data will be available for reporting in the Q4 2016.



The new categories are:

- Internet Service Provider
- Telecommunications/Mobile Provider
- Internet Exchange Point (IXP)
- Data centre/Cloud services provider
- Hosting/ Domain name registry/registrar
- Non-profit/NGO/Civil society
- Internet technical community
- IT services/Vendor/Consultancy
- Government department/agency/ Regulator
- Academic/Educational/Research Institute
- Banking/Financial services organization
- Other

### 2.1.3 Services Projects

| Projects  | Overview  | Status   |
|---|---|--|
| <b>Services Roadmap 2016 planning</b>                   | Selected Member Service projects are tracked and published on APNIC's website<br><a href="https://www.apnic.net/services-roadmap">https://www.apnic.net/services-roadmap</a>  | Completed  |
| <b>Statistics web page improvement</b>                  | APNIC released a revamped statistics page in Q3. This provides easy and quick access to statistics on IPv4, IPv6 and AS numbers with improved interface and graphs.<br><a href="http://www.apnic.net/stats">www.apnic.net/stats</a> | Completed  |
| <b>MyAPNIC improvement</b>                              | Merger and acquisition transfer handling<br>Authorised contact management<br>Reverse DNS management<br>ROA and route management<br>MyAPNIC portal restyle<br>MyAPNIC video guides   | Completed<br>Completed<br>Completed<br>Completed<br>Completed<br>Completed |
| <b>APNIC Registration Management System improvement</b> | IP de-aggregation management<br>Inter RIR transfer invoicing  | Completed<br>Completed   |
|   | Member account closure and reactivation management  | In progress  |

**Table 2 – Member Services Projects 2016**



Figure 2 – APNIC new statistics web page

### 2.1.4 Instant Feedback

Instant Feedback was deployed to seek members' feedback on Helpdesk support in 2015 as a pilot project. Members are invited to answer a very short survey after a service interaction.

| Service         | Q1   | Q2  | Q3* |
|-----------------|------|-----|-----|
| Helpdesk        | 99   | 38  | 65  |
| HM consultation | 8    | -** | -** |
| Online chat     | -*** | 6   | 48  |

Table 3 - Instant feedback submissions

\*\*No face to face HM consultation held in Q2 & Q3

\*\*\*Online chat feedback started from late Q3

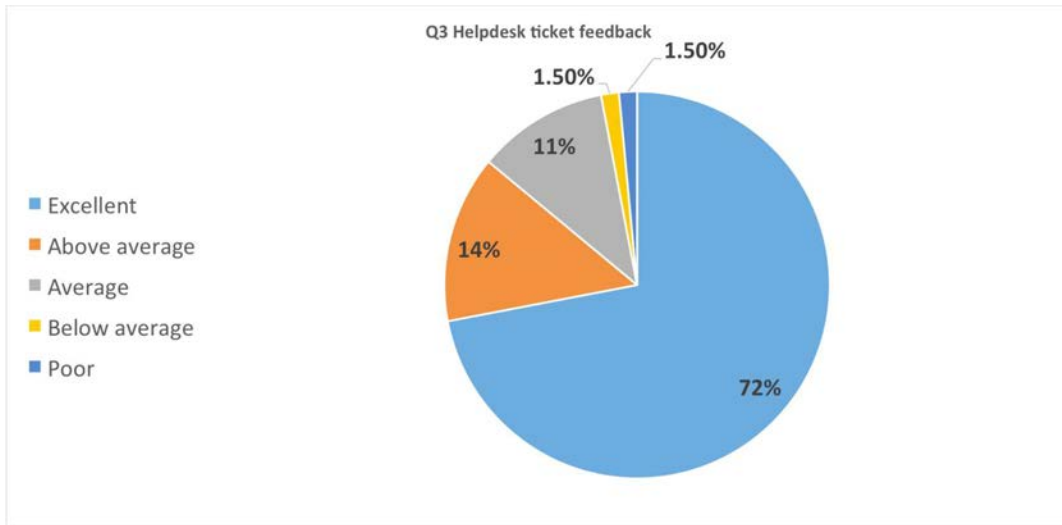


Figure 3 - Instant feedback: APNIC Helpdesk

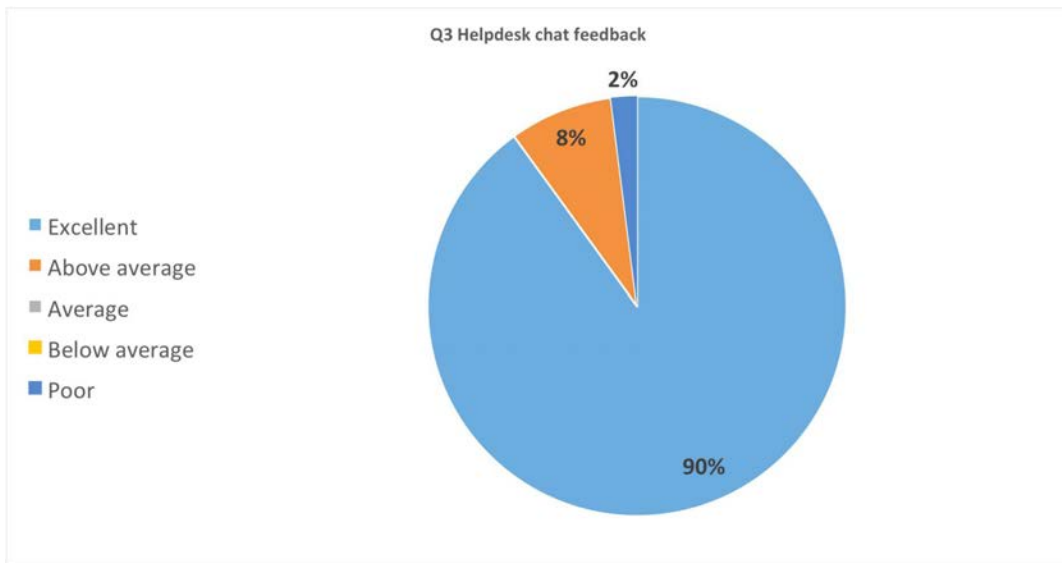


Figure 4 - Instant feedback: Online Chat

Only 1 online chat session rated poorly, as the issue could not be resolved at the time. The Member Services team later followed up and resolved the issue via a helpdesk ticket.

Throughout Q3 to Q4 2016, APNIC will deploy Instant Feedback to cover the following services interactions:

| Services interaction                                     | Status      |
|--|-------------|
| New member application                                   | In progress |
| Existing member resource request                         | In progress |
| IPv4 transfer  | In progress |
| Membership renewal                                       | In progress |
| Online chat  | Completed   |
| Other (non-member application/historical resource claim) | In progress |

Table 4 – Instant Feedback Channels

## 2.2 Internet resources delegation and registration

### 2.2.1 IPv4, IPv6 and ASN delegations

The following table shows the number of delegations for each resource during 2016. In Q2, the Services area processed larger volume of IPv4 and IPv6 requests.

IPv4 delegations in Q2 were almost double of that in Q1, but a much higher percentage was delegated by NIRs.

| Resource              | Q1                    | Q2                     | Q3*                   |
|-----------------------|-----------------------|------------------------|-----------------------|
| IPv4 (103 /8)         | 594<br>(APNIC 47.25%) | 1165<br>(APNIC 28.19%) | 550<br>(APNIC 49.44%) |
| IPv4 (recycled space) | 132<br>(APNIC 42.25%) | 306<br>(APNIC 23.43%)  | 49<br>(APNIC 82.35%)  |
| IPv6                  | 228                   | 421                    | 366                   |
| AS numbers            | 302                   | 441                    | 201                   |

Table 5 - Resource Delegations 2016

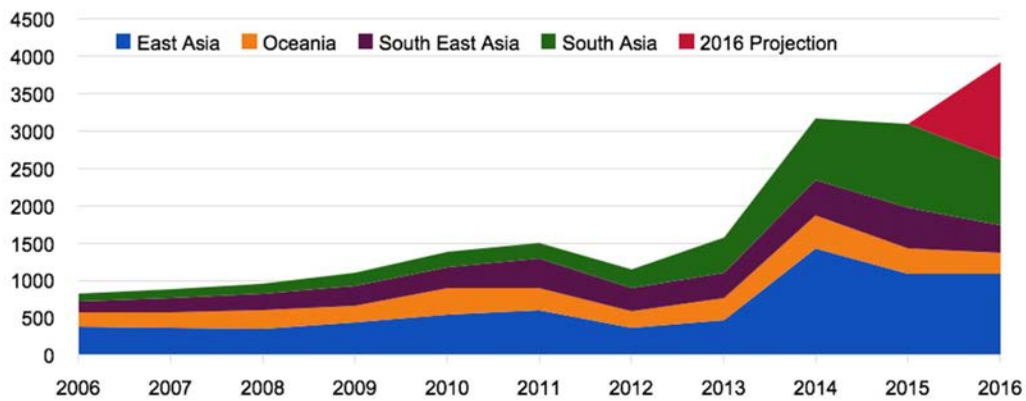


Figure 5 - Annual IPv4 delegations

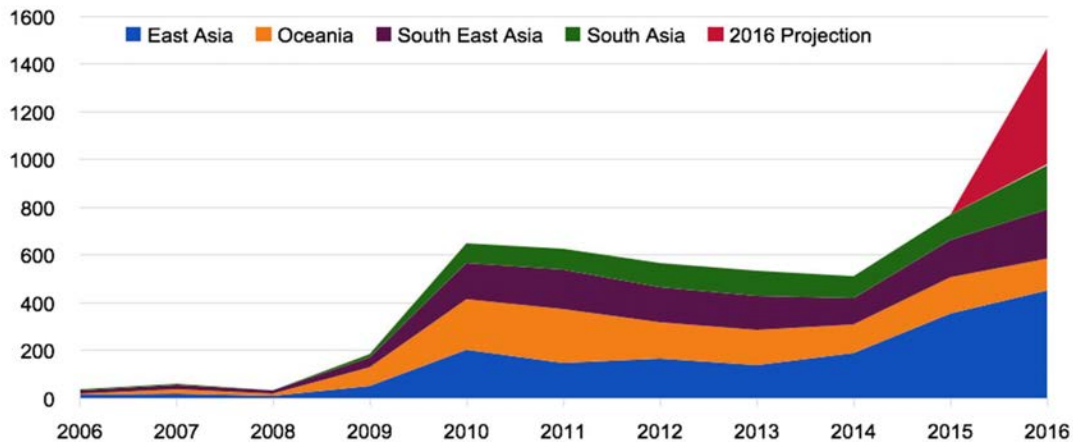


Figure 6 - Annual IPv6 delegations

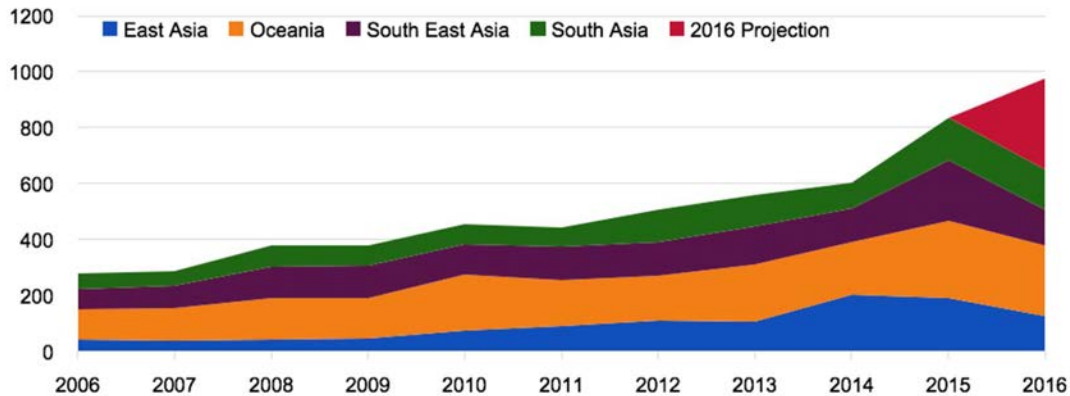


Figure 7 - Annual ASN delegations

### 2.2.2 Available IPv4 addresses (103/8)

APNIC is currently delegating IPv4 addresses from its last /8 (103/8), and also from the 'recycled' pool. With justification, every member is entitled to receive a maximum of a /22 from each of these pools.

| Resource          | Q1   | Q2   | Q3*  |
|-------------------|------|------|------|
| Delegations (/24) | 1921 | 3972 | 2074 |
| Remaining         | 59%  | 48%  | 45%* |

Table 6 - Available IPv4 address space

At the current consumption rate of around 1000 /24s per month, the remaining pool of 29574 /24s would last until February 2019 (2.4 years from now).

### 2.2.3 Waiting list for IPv4 recycled addresses

APNIC exhausted its recycled space on 9 June 2016. Requests for recycled IPv4 addresses have since been put on the waiting list. APNIC has a system to return terminated addresses weekly into the recycled pool and requests on the waiting list are fulfilled accordingly as well.

As of 1 October 2016, there are 60 entries on the waiting list, for a total of 233 x /24 IPv4 blocks.

### 2.2.4 Member resource type holding

APNIC started tracking the proportion of Members holding specific resource types, from Q3 2016.

| Resource type | Q1 | Q2 | Q3* |
|---------------|----|----|-----|
| IPv4 (103/8)  | -  | -  | 65% |
| IPv4 Recycle  | -  | -  | 27% |
| IPv6          | -  | -  | 48% |

Table 7 - Member resource type holding (% of member holding particular resource type)

### 2.2.5 IPv4 transfer activities

IPv4 blocks may be transferred due to merger/acquisitions or market transfer.

Market transfers can be made within the APNIC region, or to and from other RIR regions. Currently, ARIN and RIPE are the two regions that have the compatible inter RIR transfer policy.

| IPv4 Transfers     | Q1 | Q2 | Q3* |
|--------------------|----|----|-----|
| Merger/acquisition | 11 | 19 | 19  |
| Market transfer    | 72 | 54 | 44  |
| - Intra RIR        | 56 | 46 | 28  |
| - Inter RIR        | 16 | 8  | 16  |

Table 8 - IPv4 Transfers 2016

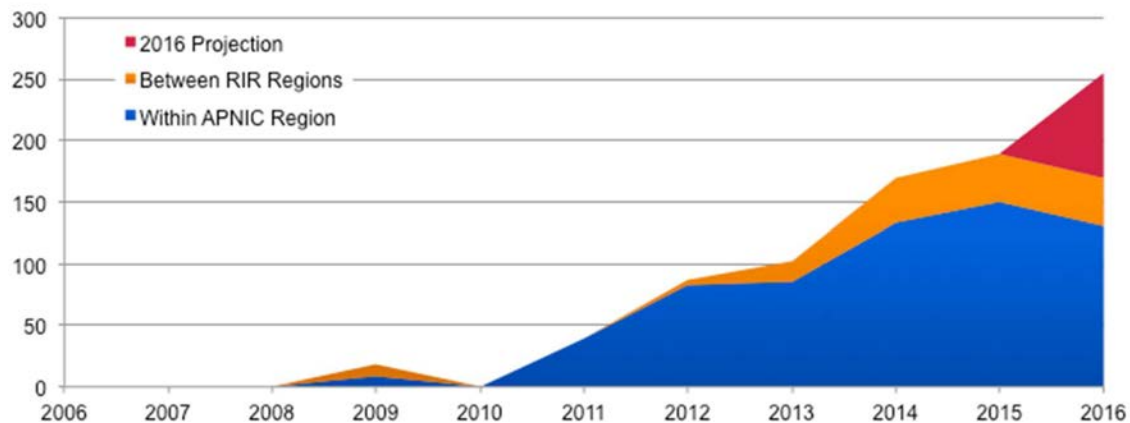


Figure 8 - Annual IPv4 transfers

As of 31 August 2016, a total of approximately /11 of IPv4 addresses have been transferred to APNIC from ARIN. /19 from APNIC to ARIN and /15 from APNIC to RIPE region.

| Inter RIR market transfer | Q1   | Q2   | Q3*  |
|---------------------------|------|------|------|
| ARIN to APNIC             | 4049 | 4992 | 1056 |
| RIPE to APNIC             | 0    | 0    | 0    |
| APNIC to ARIN             | 14   | 20   | 2    |
| APNIC to RIPE             | 60   | 0    | 392  |

Table 9 - Inter-RIR transfer volume 2016 (number of /24)

Services staff are tracking transfers of “last /8” address blocks, and reporting these during APNIC meetings.

|                    | Q1 | Q2 | Q3* |
|--------------------|----|----|-----|
| Market transfer    | 20 | 22 | 14  |
| Merger/acquisition | 12 | 26 | 17  |

Table 10 - Transfers of 103/8 space

## 2.2.6 Whois Data Quality Improvement

APNIC Whois data quality improvement focus on the cleaning up invalid registration information such as organisation details, contact person, email addresses, phone numbers and addresses for APNIC delegated resources.

### 3 Communications & Events

#### 3.1 Communications

##### 3.1.1 APNIC Blog

Blog activity has increased steadily during 2016, including articles published and readership.

| 2016         | Q1     | Q2     | Q3*    |
|--------------|--------|--------|--------|
| <b>Views</b> | 32,595 | 38,988 | 33,778 |
| <b>Posts</b> | 70     | 84     | 62     |

Table 11 - APNIC Blog activity level 2016

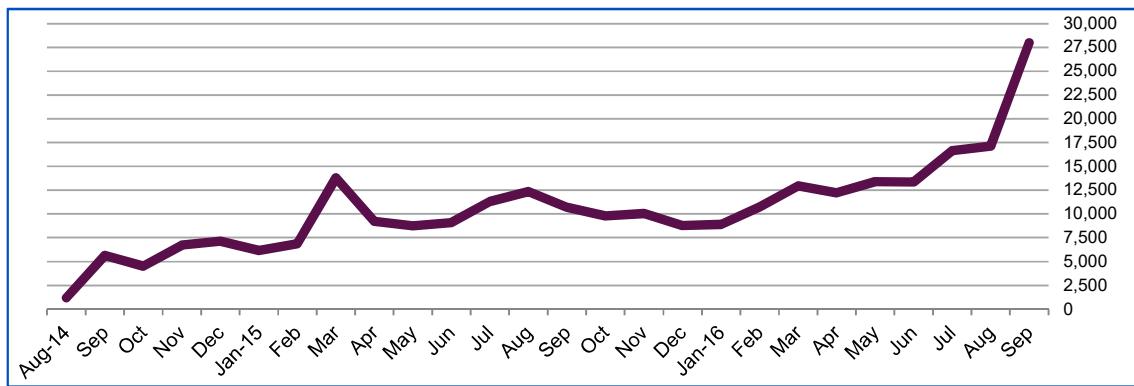


Figure 9 - Monthly APNIC Blog views

- The APNIC Blog experienced its biggest two months of readership ever in July and August 2016, with August the largest ever month recording 17,125 views. The blog is averaging 13,170 views per month in 2016 to date.
- Content in this period included 30 Guest Posts from the APNIC community, one of the highest months ever, as community engagement with the blog continues to grow.

##### 3.1.2 Social Media

|                   | Q1      | Q2      | Q3*     |
|-------------------|---------|---------|---------|
| <b>Facebook</b>   |         |         |         |
| Organic Reach     | 134,719 | 178,704 | 119,675 |
| Likes             | 11,898  | 20,263  | 21,768  |
| <b>Twitter</b>    |         |         |         |
| Followers         | 5,416   | 6,059   | 6,330   |
| RT/Likes/Mentions | 1,173   | 1,205   | 565     |
| <b>YouTube</b>    |         |         |         |
| Views             | 9,639   | 5,270   | 2,576   |
| Minutes           | 77,451  | 32,552  | 16,820  |
| <b>Slideshare</b> |         |         |         |
| Views             | 89,799  | 74,303  | 31,152  |
| <b>LinkedIn</b>   |         |         |         |

|           |        |        |        |
|-----------|--------|--------|--------|
| Reach     | 35,847 | 34,965 | 21,128 |
| Followers | 1,601  | 1,689  | 1,749  |

**Table 12 - APNIC Social Media activity 2016**

### 3.1.3 Website

- A new, responsive conference program design was developed and deployed for APNIC 42. The new program layout has been designed with mobile devices in mind and improvements based on community feedback.
- The APRICOT 2017 website was developed and deployed during Q3. <https://2017.apricot.net/>
- Work is continuing on a redesign of the IPv6 pages, and APNIC also intends to upgrade its website Content Management System (CMS) in 2016. Both projects will be completed by end Q4.

## 3.2 Events

### 3.2.1 APNIC 42

- The location for APNIC 42 was changed to Colombo, Sri Lanka, in July, requiring a new venue to be secured as well as new sponsors and local supporters.
- Despite the significant disruption to the meeting arrangements, APNIC 42 is on track with strong registrations for the training workshops and excellent ongoing support from the new Sri Lankan hosts and former Bangladeshi hosts.

### 3.2.2 APRICOT 2017

- APRICOT 2017 will be held in Ho Chi Minh City, from 20 February – 2 March.
- Preparations for the meeting are on track, with keynote speakers Tim O'Reilly and Avi Freedman secured to present.

### 3.2.3 Future conferences

- Preparations for APNIC 44 in Taichung, Taiwan, are at an early stage and a venue selection site visit is planned for Q4.
- The location of APNIC 46 was chosen by the EC as Noumea, New Caledonia, and announced to the community in August.

### 3.2.4 APNIC Regional Meetings

- With SANOG 28, Mumbai, India (1-9 August 2016) – while not officially branded as an ARM, APNIC provided ARM-level support to SANOG 28. Paul Wilson, Byron Ellacott, Vivek Nigam, Adli Wahid, Fakrul Alam, Sunny Chendi and Dinesh Bakthavatchalam presented at the conference, which attracted 200+ attendees.
- Fakrul, Adli and Jessica Wei also participated in the workshops (following the conference) as trainers. A Member Gathering session, including representatives from APNIC's Member services and finance teams, was held on the morning of SANOG 28.
- The final regional meeting in 2016 will be held in Fiji (November, with PACNOG 20).



### **3.3 Other**

- Tony Smith participated in a three day NRO Communication Coordination Group (CCG) meeting held at ICANN 56, where communication representatives from the five RIRs met to discuss joint activities, share plans and best practice, and coordinate communication support activities for the NRO and ASO.
- APNIC's communication transparency initiatives in 2015-16 were recognised by the Holmes Report SABRE Awards with APNIC shortlisted as a finalist in the 'Community Relations' category.

## 4 Technical Area

### 4.1 Software

#### 4.1.1 Core Registry improvements

Status of projects/activities:

- Core “Pool Service” service design complete and currently being integrated
- ARMS integration with “Pool Service” in progress
- Planned completion date: Dec 2016

#### 4.1.2 MyAPNIC/ARMS roadmap development

This activity relates to the ongoing improvements to our MyAPNIC member portal, and related Resource Management System. The following features/improvements have been deployed or are in the process of being deployed this year:

Status of features/improvements:

- Route/ROA Management – Initial release deployed
- IPv4 delegations – Initial release deployed
- Merger and Acquisition Transfers – Initial release deployed
- Bounced emails (ARMS) – Work in progress, scheduled completion date: Dec 2016.

#### 4.1.3 WHOIS development

This activity relates to the upgrade of the WHOIS master to Version. 4.

Status of projects/activities:

- The RDAP code (provided by APNIC) has been integrated into the new WHOIS codebase
- Organisation object rules are currently being incorporated
- Object rules have been finalized.
- Planned completion date: March 2017

### 4.2 Infrastructure Services

#### 4.2.1 Network and Systems Architecture Improvements

Status of projects/activities

- Completed an independent assessment of the configurations of APNIC’s existing network Switch and Router environment. The results are being reviewed and will be incorporated and prioritized as part of the ongoing network infrastructure improvements.
- Completed an internal review of the APNIC network. Currently implementing improvements that were identified during the review.

## 4.2.2 Monitoring improvements

Status of projects/activities

- Internal review completed and gaps identified
- Migrating final checks from Zenoss to Sensu
- Zenoss decommissioning in progress

## 4.2.3 Archiving improvements

Status of projects/activities

- Gather requirements from stakeholders – work in progress

## 4.3 Web and Systems

### 4.3.1 CRM

Status of projects/activities

- Identified the top three CRM candidates (Salesforce, ZOHO, SugarCRM)
- Currently in final evaluation phase with the three CRM's presenting final demonstrations

### 4.3.2 Internet Directory

Status of projects/activities

- Initial release completed with a soft launch on 1 September 2016
- Gathering feedback for product roadmap

### 4.3.3 CMS

Status of projects/activities

- Engaging in vendor demonstrations. Vendor evaluation to follow.
- Planned completion date: December 2016

## 4.4 Information Analysis and Visualisation

### 4.4.1 “WHOWAS” – Historical WHOIS

APNIC is undertaking the development of a public historical information service to enable retrieval of historical Internet Number Resource registration information.

Status of projects/activities:

- Historical service API system implementation in test, extending the RDAP result format
- Pilot user interface for searching and interpreting results available
- Other RIRs and RDAP stakeholders informed of intent
- Historical service code base publicly available
- Planned completion date for API – December 2016

#### 4.4.2 IDN and EAI support on APNIC systems

Status of projects/activities

- APNIC has been involved with the ICANN Universal Acceptance Steering Group's work on case studies

#### 4.4.3 Slideware Maker

Status of projects/activities

- Code has been updated to modularize to each slide-type, documented, and redeployed.
- Slides for resource assignment data are in development

### 4.5 Information/Cyber Security

#### 4.5.1 Information Security Management System (ISMS)

Status of projects/activities

- As part of staff awareness and risk register definition, an ISMS in-house workshop was held to define and review the risks and gaps that currently exist.
- The various areas are creating and/or updating policies as defined in the workshop.
- An independent Cyber Security health check was conducted. A number of improvements were identified which will be incorporated into the gap analysis.

#### 4.5.2 IS Security-related improvements

Status of projects/activities

- Identified and upgraded a vulnerability with the F5 Load Balancers.
- An independent vulnerability assessment was completed. Corrections are currently being implemented after which a follow-up assessment will be done to ensure that all corrections were correctly applied.

#### 4.5.3 Security incident report summary

The following list summarizes the security incidents that APNIC has experienced since the previous Secretariat Report. (An incident report is available for more detailed information)

|                            |  |
|----------------------------|--|
| Date:                      | 27/06/2016   |
| Type of attack:            | SQL injection  |
| Systems/Services affected: | Submissions System   |
| Remediation:               | Code review and vulnerability updates<br>System test for all known vulnerabilities |
| Date:                      | 16/07/2016   |
| Type of attack:            | DDoS   |
| Systems/Services affected: | <a href="http://www.apnic.net">www.apnic.net</a>                                   |
| Duration:                  | 3 min  |
| Remediation:               | Implement Cloudflare for DDoS mitigation (work in progress)                        |

Date: 06/08/2016  
Type of attack: DDoS  
Systems/Services affected: [sec3.apnic.net](http://sec3.apnic.net) (Japan-based DNS secondary server)  
Duration: Flapping intermittently for 1 hour 3 min  
Remediation: Project proposal to review all current remote sites (Japan and HK) in terms of architecture and vulnerabilities

#### **4.6 Collaboration work with other RIRs**

APNIC and RIPE NCC have defined a new joint project for 2017, under the existing Cooperation MoU. The project will implement the RIPE Forum software and its integration into the APNIC mailing lists.

## 5 Strategic Engagement

### 5.1 External Relations

- All APNIC external engagements are reported in the APNIC blog and sometimes followed by extended blogposts about these events. The “event wraps”, as these reports are called, are available here: <http://blog.apnic.net/category/events/>

#### 5.1.1 ER Highlights – Q2 and Q3 2016

##### 5.1.1.1 NOGs

- In Q2 and Q3 2016 APNIC provided sponsorship and staff participated in BDNOC, TWNOG, IDNOG, AusNOG, HKNOG, and SANOG in India.
- In August, APNIC staff also attended the inaugural Nepal Network Operators Group meeting, NPNOC 0.5.

##### 5.1.1.2 IPv6

- APNIC continued its partnership with the ITU Asia-Pacific Centre of Excellence to deliver an ‘Internet and IPv6 Infrastructure Security’ workshop in Bangkok, TH. This workshop included 42 participants from 10 regional economies.
- The partnership with the ITU also included a Direct Country Assistance on IPv6 transition in Cambodia. Since this visit, the government of Cambodia has confirmed increased efforts to promote IPv6 deployment in the country.
- In May, APNIC partnered with the Infocomm Development Authority of Singapore (IDA) to host a workshop with the 10 member nations of the ASEAN Telecom Regulators’ Council (ATRC) to discuss and develop IPv6 deployment strategies in government networks.
- In June, Paul Wilson spoke at a Mobile Security Forum during GSMA Mobile World Congress in Shanghai, one of the largest mobile industry events in Asia. The topic of his presentation was IoT Security. He spoke about IPv6 for IoT and also about the importance of equipment manufacturers to become part of the Internet and Security ecosystems.
- APNIC staff have also worked to support the Internet Governance Forum (IGF) IPv6 Best Practices Forum by encouraging regional contributions to the effort.

##### 5.1.1.3 Collaboration

- APNIC has continued its close collaboration with the ICANN APAC Hub, including splitting coverage of the APT preparatory processes for the 2016 World Telecommunication Standardization Assembly (WTSA) and 2017 World Telecommunication Development Conference (WTDC).
- In collaboration with ISPAI and ICANN, APNIC organized a round-table meeting to discuss Internet Governance for the Indian technical community, on the sidelines of the SANOG 28. This meeting was participated by 33+ senior management from Indian ISPs/Telcos.

- APNIC partnered with LACNIC to participate in APEC TEL 53 in Tacna, Peru. LACNIC staff delivered an update on IPv6 across the APEC economies. APNIC participated remotely in TEL's Security and Prosperity Steering Group (SPSG).
- APNIC, ISOC, ICANN, and RIPE developed and coordinated the '*Getting the Logical Infrastructure Right: Enabling Sustainable E-commerce Growth with IPv6*' panel discussion at UNCTAD's E-Commerce Week in Geneva.
- At the I-star meeting held in Copenhagen in May, the first for ICANN's new CEO Göran Marby, the group of leaders shared updates on the implementation of the IANA stewardship transition. They also discussed future collaboration on emerging issues such as "Internet of Things" and the international policy debates over cybersecurity.
- APNIC contributed to the collective efforts of the Internet Technical Advisory Committee (ITAC) at the OECD Ministerial Meeting on Digital Economy, including working with the NRO to organize the '*Getting the Ball Rolling: IPv6 adoption since 2008*' session.
- APNIC supported two capacity building initiatives: the Asia-Pacific Internet Governance Academy (APIGA), organized by ICANN and KISA at Yonsei University in Seoul; and the Asia-Pacific School of Internet Governance, lead by Prof. Kilnam Chon, at the Asia Institute of Technology in Bangkok. These efforts are focused towards enabling a new generation of ICT professionals to participate in Internet governance discussions, including IP addressing policies.

#### **5.1.1.4 Incident Response in the Pacific**

- In May, APNIC staff provided mentorship to stakeholders in Tonga to help establish CERT.to as the first national CERT in the Pacific. Paul Wilson gave a remote keynote speech at the launch event, which was attended by the Prime Minister and Deputy Prime Minister.
- APNIC has since been invited to participate in efforts in Vanuatu as they explore the viability of establishing a national CERT.
- At PACNOG 19 in Fiji, APNIC will deliver an incident response workshop in collaboration with FIRST.

#### **5.1.1.5 Security Outreach**

- APNIC has been actively participating and providing training on a wide-variety of security efforts across the region. More details can be found in section 6.2: Development Area.
- In addition, APNIC staff actively engaged with the Public Safety community, including presentations at the *Southeast Asia Cybercrime Workshop for Prosecutors and Judges* in Malaysia and the *International Symposium on Cybercrime Response* in South Korea. APNIC also participated at the ICANN GAC Public Safety Working Group and has continued strong engagement with INTERPOL's Global Complex for Innovation in Singapore.
- In July, Paul Wilson joined the first annual meeting of the Global Forum on Cyber Expertise (GFCE) as a member of the Advisory Board. The Advisory Board provides strategic guidance and advice to the GFCE and has since developed terms of reference to guide their work.

## 5.1.2 APNIC External Engagements

| Completed & Planned External Engagements 2015-2016 |            |                           |
|--|------------|---------------------------|
| Subregion  | 2015       | 2016<br>(Planned to Date) |
| S Asia   | 40         | 28 (30)                   |
| SE Asia  | 73         | 38 (49)                   |
| E Asia   | 34         | 14 (22)                   |
| Oceania  | 28         | 22 (33)                   |
| Global   | 37         | 27 (34)                   |
| <b>Total</b>                                       | <b>212</b> | <b>129 (168)</b>          |

Table 13 – External Engagement Volume

| Completed & Planned External Engagements 2015-2016 |            |                           |
|--|------------|---------------------------|
| Category   | 2015       | 2016<br>(Planned to Date) |
| ● APNIC  | 13         | 4 (5)                     |
| ● Coordination                                     | 26         | 14 (19)                   |
| ● Development                                      | 7          | 10 (10)                   |
| ● Government                                       | 16         | 8 (10)                    |
| ● Internet Governance                              | 10         | 5 (9)                     |
| ● Member Outreach                                  | n/a        | 8 (10)                    |
| ● Membership Development                           | 9          | 7 (9)                     |
| ● NOG  | 19         | 10 (13)                   |
| ● Security   | 23         | 19 (25)                   |
| ● Technical  | 6          | 6 (8)                     |
| ● Training/TA                                      | 83         | 38 (50)                   |
| <b>Total</b>                                       | <b>212</b> | <b>129 (168)</b>          |

Table 14 – External Engagement Categories





## 5.2 IANA Stewardship Transition

### 5.2.1 Implementation

- In June, the RIRs and ICANN signed the Service Level Agreement (SLA) for the IANA Numbering Services. The SLA will have no effect but only with the transition if it occurs.
- On 12 August, ICANN [informed NTIA](#) that all the necessary tasks called for in the transition proposal would be completed by the end of the contract term. On 16 August, NTIA [informed ICANN](#) that “barring any significant impediment”, it will allow the IANA functions contract to expire.
- In August, three agreements concerning the IANA Intellectual Property Rights (IPR) were made available for public comment. The IPR include the IANA trademark and associated domain names, and they will be transferred to the IETF Trust. These agreements will be signed upon successful completion of the IANA Stewardship Transition. These agreements are:
  - IANA IPR Assignment Agreement, which transfers the IPR from ICANN to the IETF Trust.
  - IANA IPR License Agreement (model) to allow PTI to use the IPR. This model will provide the basis for three license agreements, one each for the names, numbers, and protocol parameters.
  - IANA IPR Community Agreement, explaining the rights and obligations of the IETF Trust and each operational community with regards to the IPR.
- A [hearing](#) at the US Senate titled *Protecting Internet Freedom: Implications of Ending U.S. Oversight of the Internet* was held on 14 September. Senator Ted Cruz lead an inquiry, in which Larry Strickling and Göran Marby testified, among other US industry experts. The Republican Senator spoke against the transition while most witnesses testified in favor of it.
- At the US Congress, attempts were made to add Budget resolution prohibiting funding for NTIA, preventing IANA stewardship transition to occur. However this was not successful.
- On 29 September an application was made to the US District Court in Texas, to issue an injunction against NTIA proceeding with the IANA transition; however this was rejected on 30 September.
- On 1 October the NTIA announced that the IANA contract had expired, effectively completing the transition of IANA stewardship.

## 6 Development Area

### 6.1 APNIC SIGs

Travel support for APNIC SIG Chairs is being provided from APNIC42 as scheduled.

A Joint sitting of all three SIGs is to be held (during the Policy SIG) at APNIC42 to discuss a proposal to revise the election procedures for SIG Chairs.

#### 6.1.1 Policy SIG

Status of projects/activities

- Prop-116 to prohibit the transfer of IPv4 addresses in the final /8 block is currently under discussion on the mailing list and will be discussed for consensus at APNIC42.
- A community discussion on initiatives to improve whois data quality generated only a handful of emails. However, this activity will continue and a 90-minute discussion will take place at APNIC42. Local LEAs (with support from the US FBI) will participate.
- The Secretariat will provide updates on whois data accuracy initiatives, trends in the transfer/M&A market, and proposed RPKI trust anchor changes during APNIC42.

#### 6.1.2 NIR SIG

Status of projects/activities

- Following the resignation of Toshio Tachibana from the SIG Chair position, an election will be held during APNIC42.
- There has been no ongoing discussion about changing the format of the SIG meeting. However, a new Chair may raise this issue.

#### 6.1.3 Cooperation SIG

Status of projects/activities

- The APNIC42 meeting will include reports on the Asia Pacific Internet Governance Academy, the IPv6 Best Practices Forum at the IGF, an IANA transition update, and an overview of Internet Governance activities in the Pacific Sub-Region (TBC).
- The Chair and Co-Chair remain in place. An election for both positions is due at APNIC 43.

## 6.2 Training

### 6.2.1 Key Metrics

| Q2              | Face to Face                   | eLearning       |
|-----------------|--------------------------------|-----------------|
| Courses         | 15                             | 34 classes held |
| Locations       | 11 cities in 11 economies      | N/A             |
| Participants    | 576                            | 206             |
| YouTube channel | 35,222 views + 335 subscribers |                 |

| Q3*             | Face to Face  | eLearning       |
|-----------------|---|-----------------|
| Courses         | 10  | 23 classes held |
| Locations       | 6 cities in 5 economies                             | n/a             |
| Participants    | 306   | 135             |
| YouTube channel | (as at 05 September) 22,022 views + 215 subscribers |                 |

Table 16 – Training in 2016

## 6.2.2 Highlights

- A major upgrade to the APNIC training lab has been completed. The upgrade converted the training lab to a live multi-home ISP network. Open BGP Monitoring (OpenBMP) tools have been set up in the lab to analyse global routing updates regularly including recent RPKI deployment status'. The setting up of a prototype IXP network is now underway.
- After the successful launch of the “Community Trainer” program in April this year, seven community trainers have delivered ten APNIC training courses so far with strong positive feedback from the participants. APNIC certification of these community trainers is underway.
- The development of new Software Defined Networking (SDN)/Network Function Virtualisation (NFV) training materials is underway. A contracted Subject Matter Expert (SME) will provide a one-hour eLearning course and a one-day tutorial on SDN with a hands-on demo added to the APNIC training curriculum by October. A five-day SDN/NFV hands-on training course will be added next year.
- An update and peer review of the Internet Resource Management (IRM) course has been completed. The IRM course now reflects recent policy changes, updated statistics and new features added to MyAPNIC.
- An upgrade of the security course is underway by adding more hands-on materials including more community-based security tools such as flowsonar, team cymru bogons filter, DDoS mitigation tools etc.
- An update of the Routing and MPLS courses is also underway to make them multi-vendor based. Juniper and Huawei equipment is being added to the Cisco equipment in the training lab.
- The development of the APNIC Academy online is underway. The testing of a Moodle online platform has been successfully completed. IRM self-paced training units have been published on Moodle and work is underway with external consultants to provide proper instructional design and interactive activities. The development of a CERT security course is also underway. By the end of the year there will be two self-paced courses in the APNIC Academy. Three new web courses have also been added to APNIC online live training and the YouTube channel.
- From April to September, five technical papers were developed and delivered to nine conferences (bdNOG5; BKNIX Peering Forum; Vanuatu ICT Day; IDNIC OPM Batam; IoT Spotlight Communicasia 2016; IDNOG3; SANOG 28; HKNOG 3.0; Y4IT in Manila).

## 6.3 Technical Assistance

### 6.3.1 TA Summary

| Q2                          | Dedicated TA Session                                   | TA Demo at Conference   | E-mail & Skype TA   |
|-----------------------------|--|---|---|
| <b>Number of Activities</b> | 4  | 4   | 4   |
| <b>Locations</b>            | Thailand ITU: 1<br>Cambodia ITU: 1<br>Indonesia: 2     | Thailand BKNIX: 1<br>Indonesia APJII OPM: 2<br>India SANOG28: 1 | Nepal: 1<br>India: 1<br>New Caledonia: 1<br>Bangladesh: 1   |
| <b>Topics</b>               | IPv6 Deployment<br>IXP<br>Routing Registry RPKI & RPLS | Routing Registry<br>Automation (RPKI/RPSL)                      | ISP Setup Advise<br>RPKI/RPSL<br>MPLS<br>Security BCP, RPKI |

| Q3*                         | Dedicated TA Session            | TA Demo at Conference                                      | E-mail & Skype TA                             |
|-----------------------------|---------------------------------|--|---|
| <b>Number of Activities</b> | 2                               | 3  | 3   |
| <b>Locations</b>            | Timor-Leste: 1<br>Bangladesh: 1 | Timor-Leste: 1<br>Sri Lanka APNIC42: 1<br>Malaysia MyIX: 1 | India: 1<br>New Caledonia: 1<br>Bangladesh: 1 |
| <b>Topics</b>               | IXP<br>Security, RPKI           | IXP Setup<br>Routing Registry<br>Automation (RPKI/RPSL)    | RPKI/RPSL<br>MPLS<br>Security BCP, RPKI       |

Table 17 – TA in 2016

### 6.3.2 Highlights

#### 6.3.2.1 TA capacity building

- RPKI implementation in the training lab was completed. The setup was completed of a dynamic analysis tools (OpenBMP) to monitor RPKI implementation across the AP region. Using this facility, RPKI TA demos have been done at several technical conferences.
- IXP manager software implementation in the training lab is underway for completion by October. APNIC will be able to do open source, software service tool demos for IXPs using this software.
- Several best current operational practices are being implemented in the training lab including BCP 38, prefix aggregation for CIDR report etc. These will be demonstrated at TA demo sessions at technical conferences.

#### 6.3.2.2 TA outreach activities

- Seven TA outreach activities have been completed at IXP peering forums and NOG conferences. The TA team are discussing with interested member to implement RPKI & RPSL in their network.
- TA service description completed on Routing Registry Automation (RPKI & RPSL).

- TA service description is underway on IPv6 deployment, IXP manager and Routing optimization/Prefix aggregation for CIDR report.
- TA website update is underway.

### **6.3.2.3 TA service delivery**

- Four TA service deliveries have been completed with ITU in Bangkok on IPv6 deployment and with ITU in Cambodia on IPv6 deployment.
- Two sessions have been completed in Indonesia with IndoSat and PT. Centra Global Investama to deploy RPKI and RPSL in their networks.
- In Timor-Leste an IXP setup TA service is being developed.
- In Bangladesh there will be a TA service delivery session with Bank Asia

## **6.4 Security**

After moving from Technical Services at the beginning of the year, Security specialist Adli Wahid increased his engagement with the Development section particularly in technical training.

### **6.4.1 Key Metrics – Q2 & Q3 2016**

- Security events attended and presentations given by Adli: 12 events attended, 13 presentations given
- Communities engaged by Adli: APNIC members, Law Enforcement Agencies (LEAs), CERTs, Inter-Governmental (APECTEL, ITU)
- Countries visited by Adli: 12
- Security Events Supported: Two (RISE Thailand, FIRST-APNIC TC @ SANOG)
- Security blog posts: Six (including guest blog posts from security community)

### **6.4.2 Highlights**

- Tonga CERT establishment: Provided training and mentoring and assisted them to reach out to various security organisations
- Delivered 4-hour tutorial (E-Learning) on Security & Incident Response for technical community in Afghanistan.
- Organised APNIC as a community sponsor for the 1<sup>st</sup> Regional Information Security Event (RISE Underground Economy) in Bangkok, Thailand. The event focused on Cybercrime and brought together CERT/CSIRT representatives from industry and LEAs. The conference was organized by Team Cymru and supported by INTERPOL.
- FIRST Annual Conference in Seoul, Korea. Myanmar CERT and Bangladesh CIRT were two new teams in the Fellowship program. Adli retained his board position responsible for fellowships, outreach and 2018 conference planning.
- Adli also collaborated with SANOG, ISPAI, & FIRST to organize the FIRST Technical Colloquia at SANOG28 in Mumbai, India

## 6.5 Community Development

### 6.5.1 IPv6

- Asian Information Superhighway (AP-IS) and IPv6
  - APNIC is contributing to The Asian Information Superhighway initiative of The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the regional development arm of the United Nations for the Asia-Pacific region.
  - IPv6 has been included under “Initiative 5: Policy and regulations for leveraging existing infrastructure, technology and inclusive broadband initiatives” of the AP-IS Master Plan.

### 6.5.2 NOGs

- APNIC continues to provide systems support via the use – for example - of the APNIC-funded fellowship system to SANOG and also APRICOT
- APNIC has also sponsored the following NOG events:
  - National
    - HKNOG3.0
    - JANOG37
    - IDNOG03
  - Sub-regional
    - SANOG28
    - PACNOG19
  - Upcoming
    - BTNOG 2016
    - JANOG38
    - PACNOG20
    - MMNOG2016
    - PKNOG

### 6.5.3 Organisational sponsorships and support

APNIC has sponsored or supported:

- APJII OPM 2016
- RISE 2016
- APAN 42
- APIGA 2016
- IPJ

APNIC also provides annual membership contributions to APT, PTC, and ISOC

### 6.5.4 Fellowships

APNIC contributed AUD10,000 to the APrIGF 2016 fellowship program with 50% funding for women and 50% for applicants from developing economies in the AP region.

APNIC will bring 53 fellows to APNIC42 in Colombo. It's the first time to have community contributions to the APNIC Fellowship program and community members were invited to join the committee with 50% committee members from APNIC staff and 50% from the community.

### 6.5.5 Infrastructure

- Root servers: In partnership with Verisign, a J root is being deployed in Brisbane and hosted by APNIC.
- IXPS: APNIC is providing support to APIX to organise a meeting at APNIC42 and has supported the Pakistan community for the launch of PKIX in Islamabad, Karachi and Lahore.
- Anchors and Probes: Soon anchors in Papua New Guinea, Myanmar, and Vizag in India will go live. Work is underway with PCH in Sydney and interested organisations in Queensland for more deployments. Probes continue to be distributed at every training event and other events in the region.

## 6.6 The APNIC Development Program

### 6.6.1 APNIC Foundation

- In early September, the Foundation's incorporation documents were formally submitted for government approval by the Hong Kong law firm of Oldham, Li & Nie.
- In August, Price Waterhouse Coopers Hong Kong were appointed as company secretary for the Foundation.
- Che-Hoo Cheng and Duncan Macintosh were appointed initial Board members of the Foundation during the setup phase.
- A draft Foundation Board appointment process was prepared for consideration by the EC

### 6.6.2 The APNIC Development Program

#### 6.6.2.1 Funding support

- In June, the ITU continued to support its IPv6 collaboration with APNIC, providing funding for activities in Thailand and Cambodia.
- In May, the Japanese International Cooperation Agency (JICA) continued its funding support for APNIC's involvement in its security training programs in South East Asia. The next training activity is in October.
- In June JICA expanded its support for APNIC's security training, providing USD20,000 in funding for the development of online training materials for CERTs.
- In August the US Department of Justice provided funding for Craig Ng to present to a "Cybercrime Workshop for Southeast Asian Prosecutors and Judges".
- Funding discussions also continued with the World Bank, Asian Development Bank, Huawei and the China Internet Development Foundation



**6.6.2.2 The Asian Information Superhighway initiative (AP-IS)** of The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP):

- APNIC was invited to the Second Session of the Working Group of ESCAP's Asian Information Superhighway initiative held in Guangzhou. IPv6 has been included under "Initiative 5: Policy and regulations for leveraging existing infrastructure, technology and inclusive broadband initiatives" of the AP-IS Master Plan.
- The Master Plan will be presented for endorsement to ESCAP's Committee on Information and Communications Technology & Science, Technology and Innovation in October.

**6.6.2.3 Under the Global Connect Initiative** of the US Government, APNIC is also continuing engagement with the World Bank, the IEEE, and the US State Department.

### 6.6.3 ISIF Asia

**6.6.3.1 Status of IDRC and Sida funding:**

- IDRC grant of CAD399,500 for 2015-2017 grant received. Reports due January 2017.
- Final reports (project and financial) for the Sida funding (2012-2015) were submitted and approved. This ends this round of Sida support for the Seed Alliance, ISIF Asia included.
- Internet Society grant of USD70,500 for 2016-2017 received. Reports due January 2017.

**6.6.3.2 New funding awarded**

- AUD441,000 in grants has been awarded for 10 grants over 9 economies, as follows:
- **APNIC Internet Operations Research Grants (AUD115,000):**
  - Realistic simulation of uncoded, coded and proxied Internet satellite links with a flexible hardware-based simulator. The University of Auckland, New Zealand.
  - Rapid detection of BGP anomalies. Centre for Advanced Internet Architectures (CAIA), Swinburne University of Technology.
  - A Peering Strategy for the Pacific Islands. Telco2 Limited, New Zealand.
- **Internet Society Cybersecurity Grant (AUD56,000)**
  - Developing Tonga National CERT to the Department of Information & ICT under the Ministry of Meteorology, Energy, Environment, Climate Change, Information, Communication, Disaster Management (MEIDECC), Tonga.
- **Community Impact Scale-up Grant (AUD50,000 grant plus AUD25,000 mentoring program under IDRC funding)**
  - Equal Access to the Information Society in Myanmar, the Myanmar Book Aid and Preservation Foundation, Myanmar.
- **Technical Innovation Scale-up Grant (AUD50,000 grant plus AUD25,000 mentoring program under IDRC funding)**
  - Khushi Baby, India
- **Technical Innovation Small Grants (4 grants of AUD30,000 funded under APNIC contribution)**

- My Community Reader: a Mobile-First Distributed Translation Tool and Reader for Ethnic Minority Languages. The Asia Foundation, Thailand.
- UAV-Aided Resilient Communications for Post Disaster Applications: Demonstrations and Proofs of Concept. Ateneo de Manila University, Philippines.
- Legalese. Legalese Pte. Ltd. Singapore.
- Deployment of Collaborative Modern HoneyNet to improve Regional Cybersecurity Landscape (CMoHN). Institute of Systems Engineering, Riphah International University, Pakistan.

## 7 Business Area

### 7.1 Activity Based Costing

All financial expenses are allocated to the define Activity codes set out in the 2016 Budget submission, at the end of August, these costs are tracking in line with budget estimates. More details are included in the finance report.

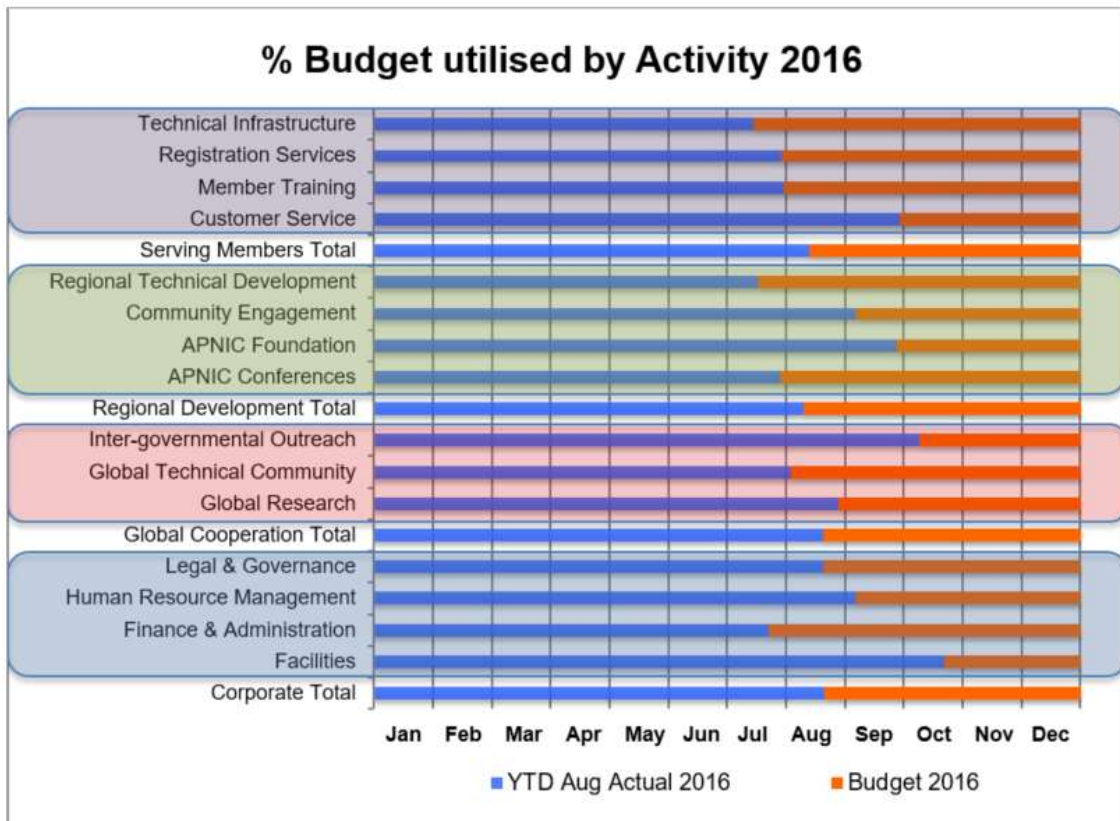


Figure 10 – Activity Budget 2-16

### 7.2 Billing Improvements

#### 7.2.1 Credit Card Security

- 3D secure was implemented in May allowing Account holders to utilise dual factor authentication for credit card payments.

#### 7.2.2 Flexible Billing Options

- The flexible Billing projects nearing completion with pilot trails for recurring credit card and Quarterly and 6 monthly invoicing will commence in Q4.

### **7.3 Quality Management**

- The recent audit against the quality standard AS/NZS ISO9001:2016 Quality Management System went smoothly, resulting in the continuation of our accreditation.
- Our auditor has been involved with APNIC for a number of years now and commented how pleasing it was to see the continual growth and maturity in the business from a quality customer service delivery perspective.

### **7.4 APNIC Survey**

- The APNIC survey ran from 5 July to 5 August 2016. The total number of valid responses was 1175. The report is in the final editing stage and will be presented to the EC and the Membership in Colombo.

### **7.5 Facilities Review**

- The Business Area continues to review APNIC's future facilities requirements. Since the last update there have been a number of inspections of potential properties, and organised a workshop to help the Leadership team better understand the options that APNIC should consider.
- A design firm has been engaged to undertake a review of APNIC's current premises to determine the viability of expansion to meet future needs, a report will be available by the next EC retreat.

### **7.6 KPMG – NIR Analysis**

- The Business team continues to assist KPMG in their NIR analysis project that is being undertaken on behalf of the EC. A report detailing the key findings from the first stage of the report will be presented to the EC at this EC meeting for consideration.

### **7.7 Business Continuity Planning**

- Business Continuity Plan has recently undergone an internal review.
- An escalation hierarchy was introduced in the event there is an incident that warrants a structured response guided by the BCP. This hierarchy provides a common language and scalable response according to the degree of impact from an incident.

### **7.8 Risk Management**

- Recently we have introduced an enterprise wide framework for managing organizational risks. This framework provides a common language and structured methodology for all areas of the business to consistently interpret risks within their areas of responsibility.
- Supporting tools include standardized measures of consequence, for example what constitutes an insignificant to catastrophic situation within our business across areas such as safety, reputation, fraud, financial etc. Additionally, risk assessment tools for projects/major activities and formal risk treatment plans to consistently manage extreme to high risks.

### **7.9 Final Report – Seed Alliance**

The final report for the Seed Alliance was submitted and approved in August. This grant program in conjunction with FIRE (AFRINIC) and FRIDA (LACNIC) commenced in Oct 2012.

## **8 Human Resources (confidential)**

**[Confidential material redacted]**

# APNIC Secretariat Report

APNIC 42, Sri Lanka  
APNIC Members Meeting  
5 October 2016

# APNIC's Vision

A global, open, stable and secure  
Internet that serves the entire Asia  
Pacific community

# APNIC Activities



Serving APNIC Members



Supporting Regional Internet  
Development



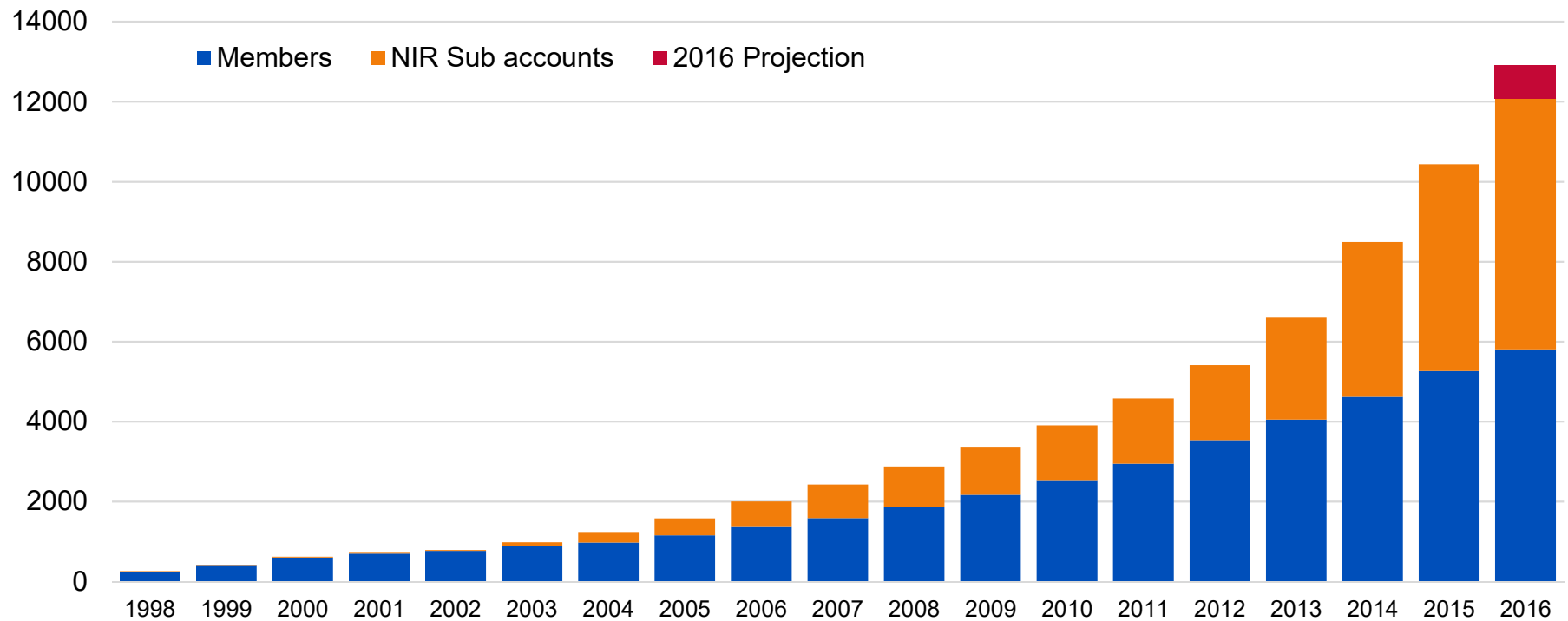
Cooperating with the Global  
Internet Community







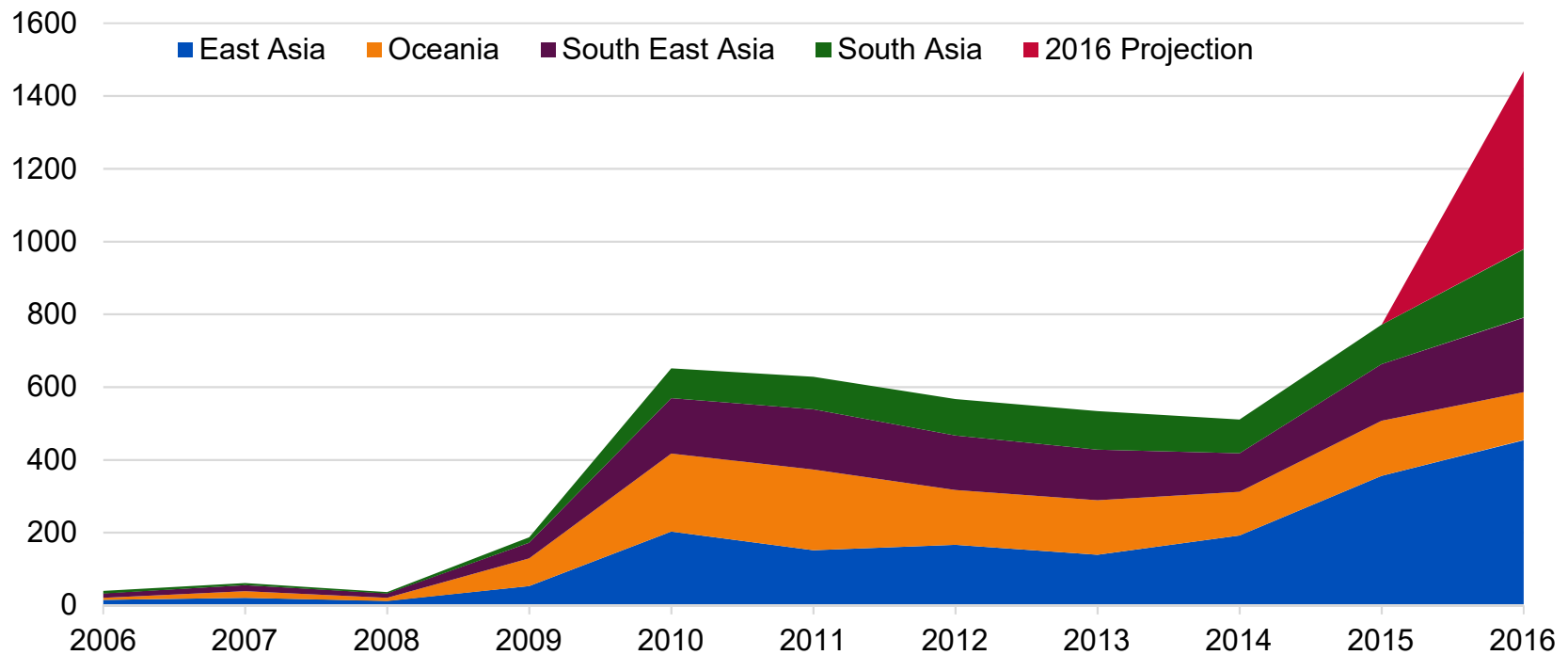
# APNIC and NIR Membership



As at 31 August



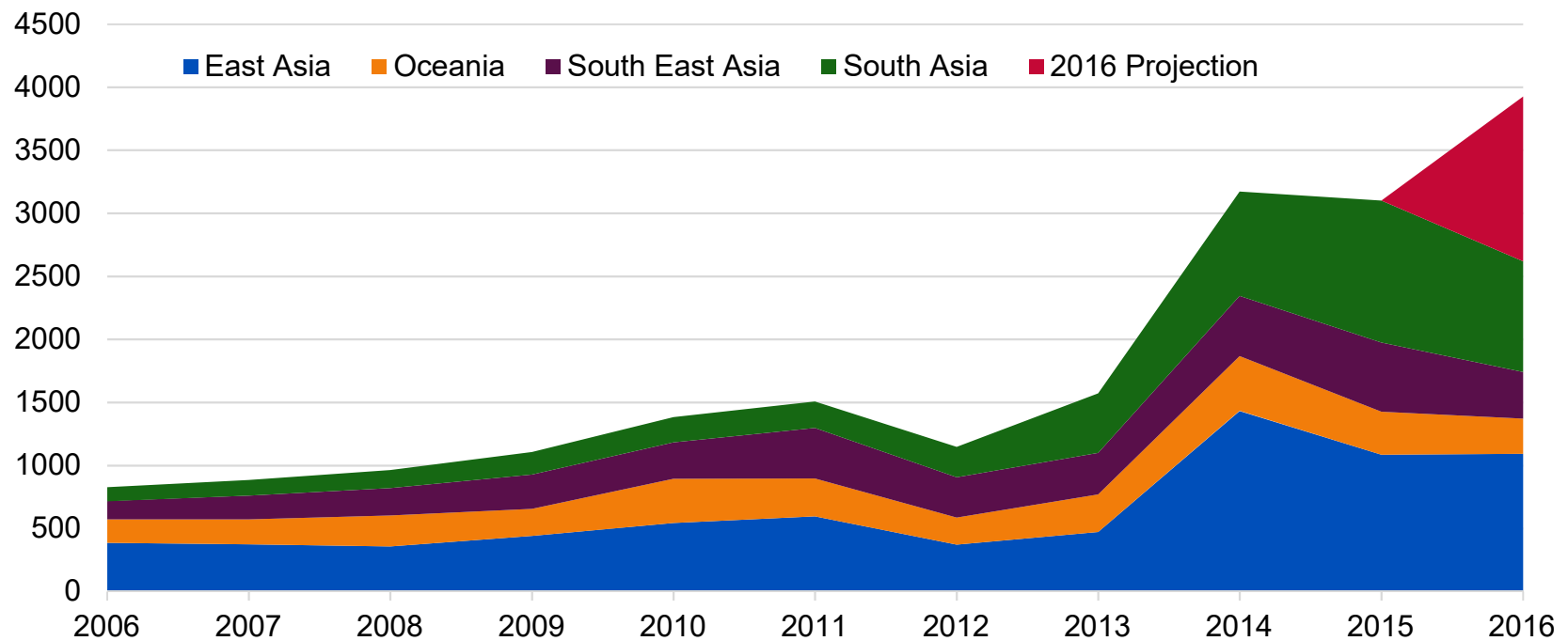
# Annual IPv6 Delegations



As at 31 August



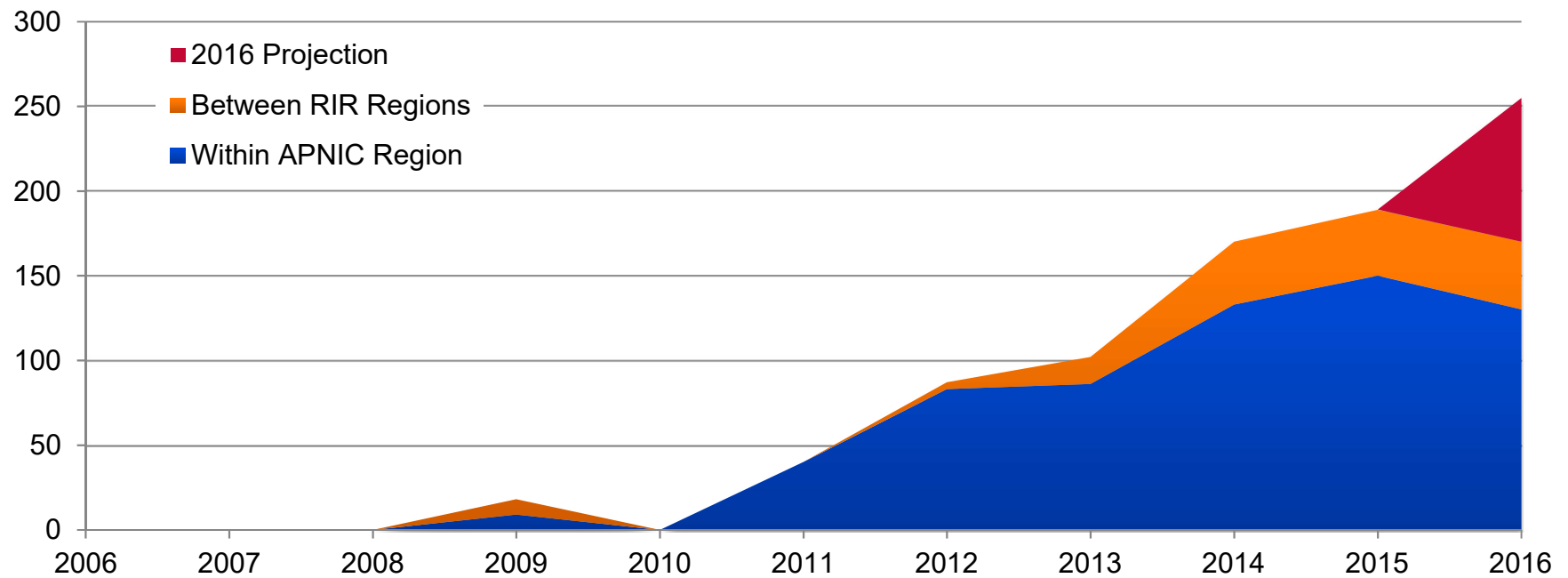
# Annual IPv4 Delegations



As at 31 August



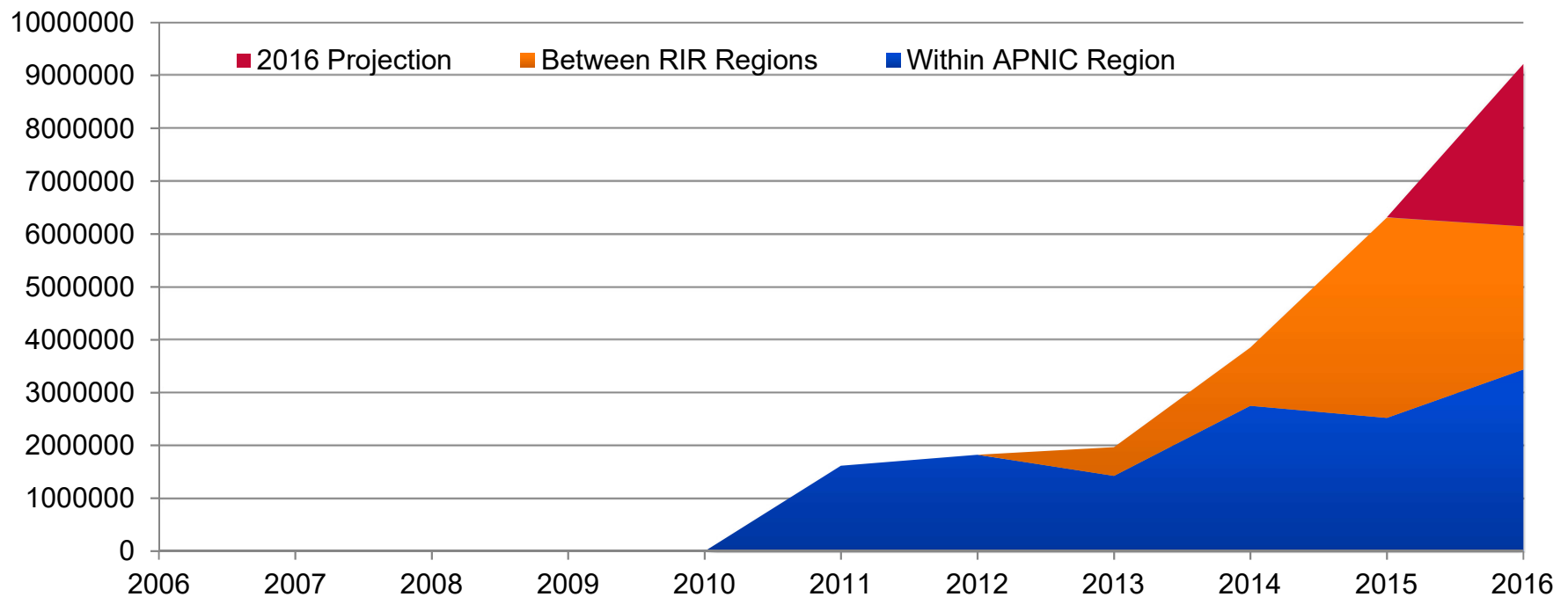
# Annual IPv4 Transfers



As at 31 August



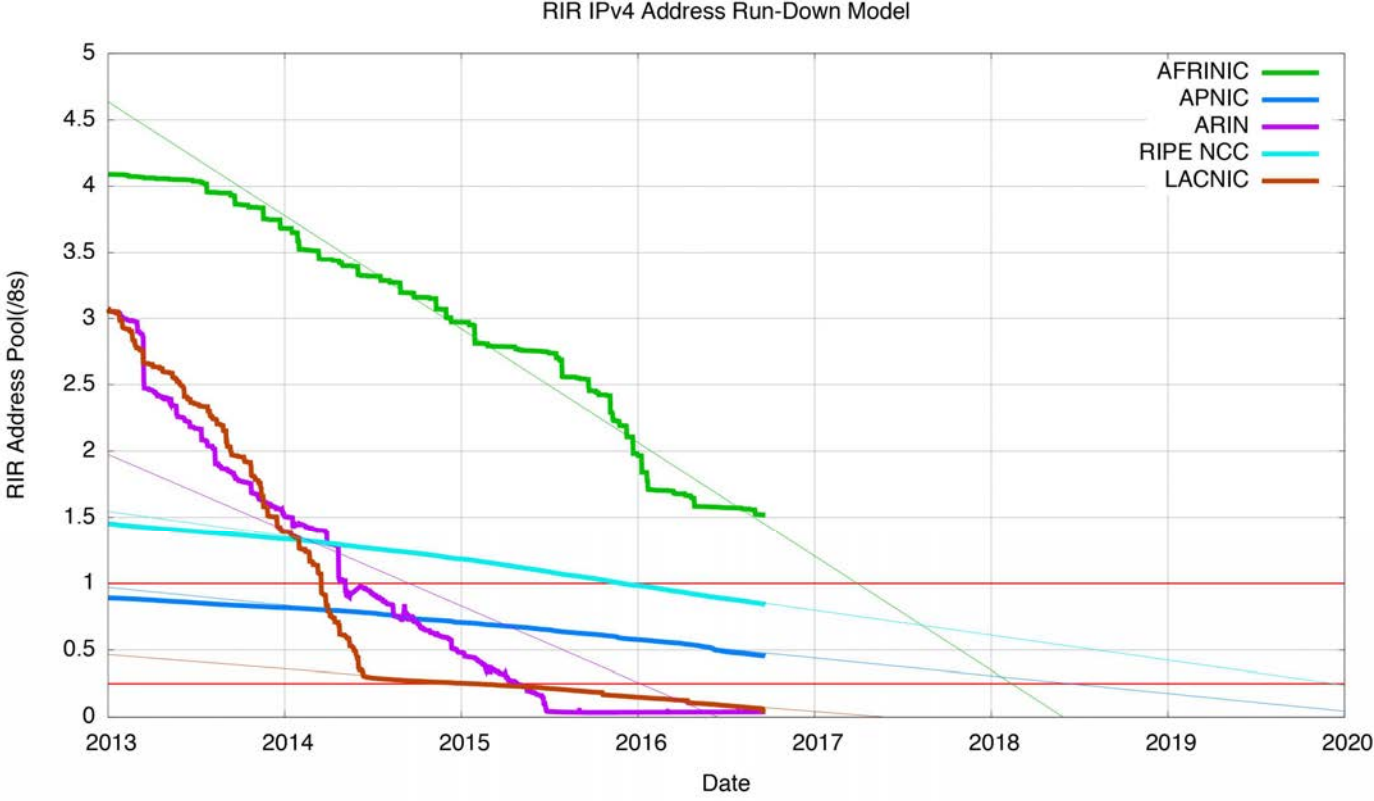
# Total IPv4 Addresses Transferred



As at 31 August

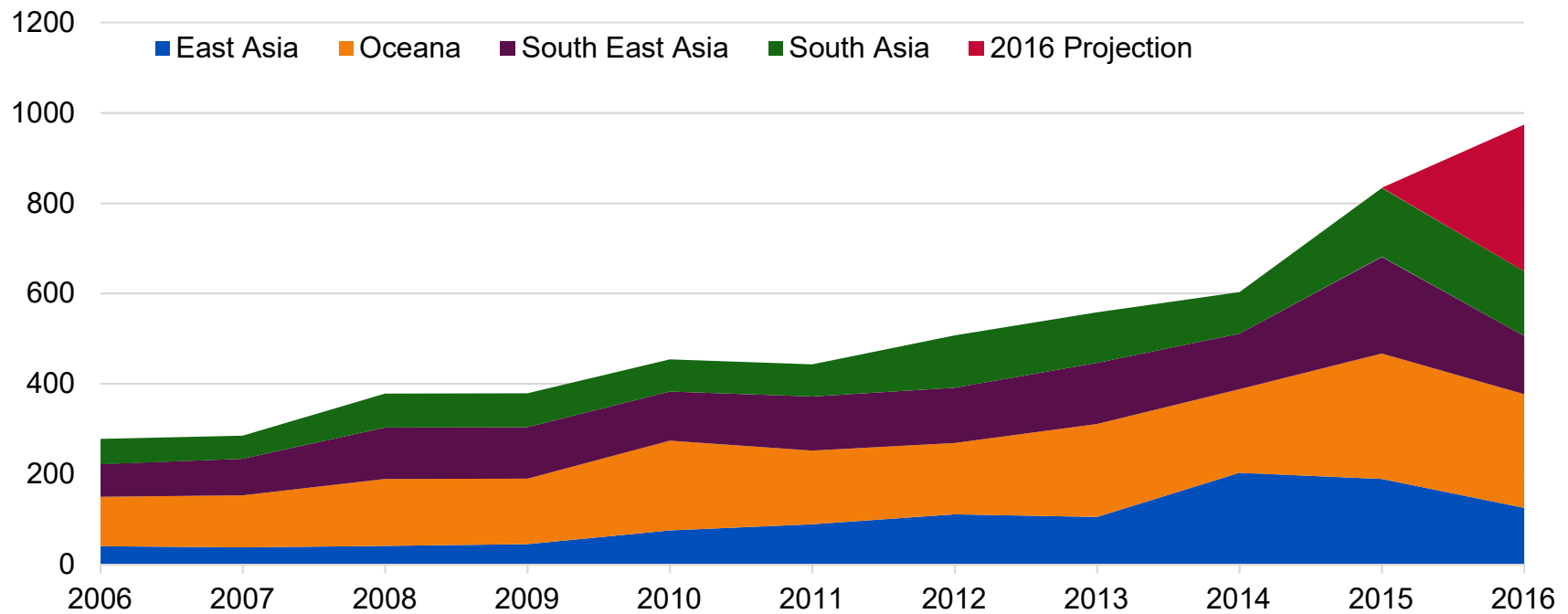


# IPv4 Address Depletion





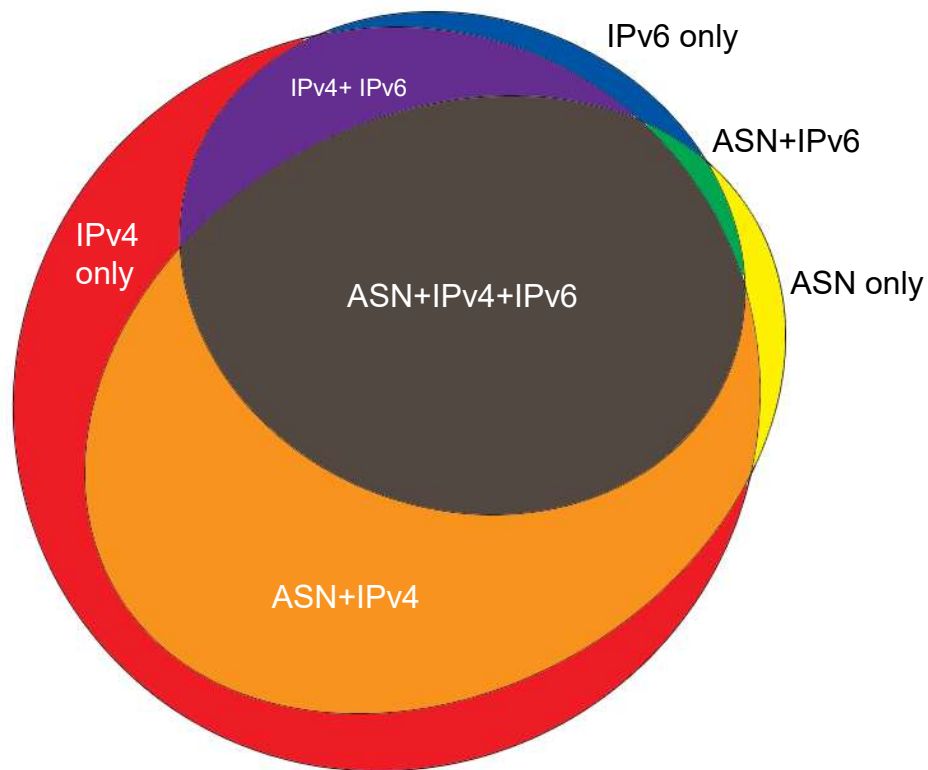
# Annual ASN Assignments



As at 31 August



# Member Resource Holdings

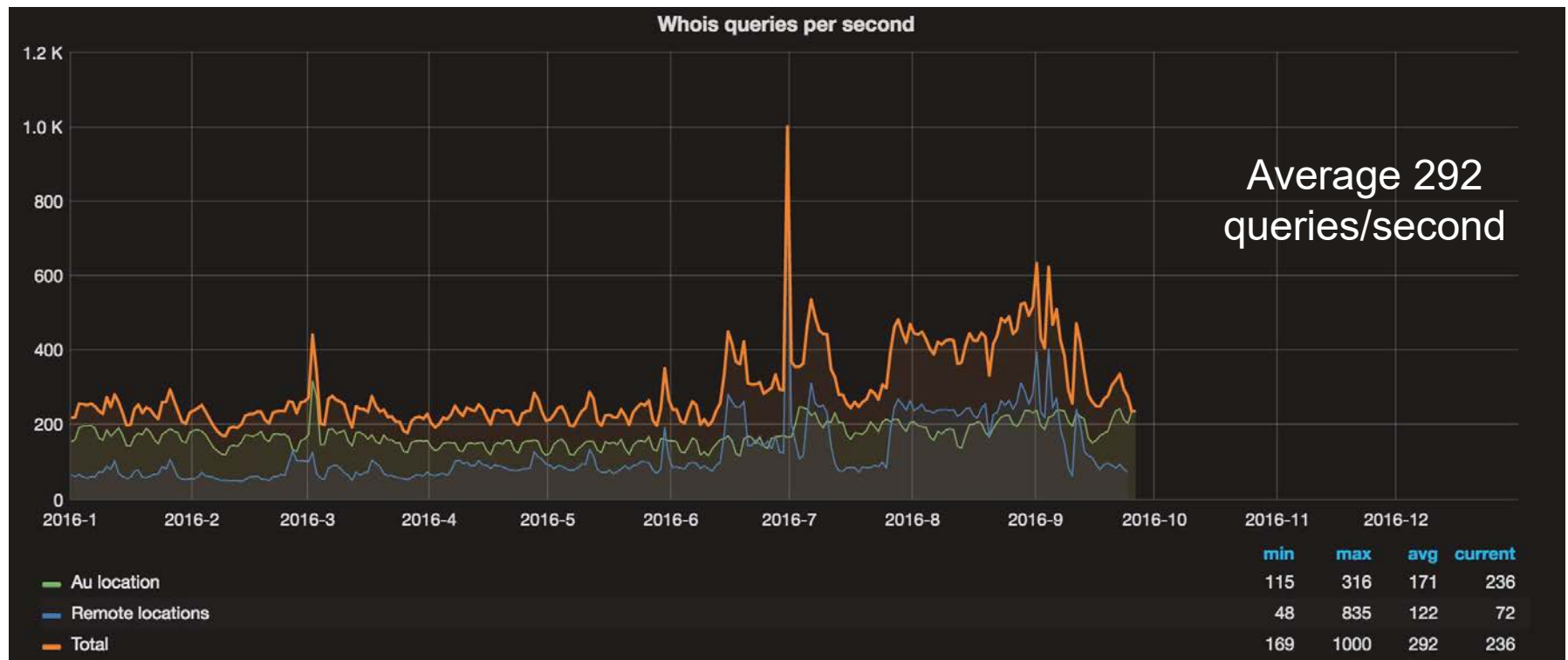


| % of Members Holding |     |
|----------------------|-----|
| ASN                  | 73% |
| IPv4                 | 95% |
| IPv6                 | 49% |





# Whois Performance





# Routing Security



“Ready to ROA” campaign – hands-on sessions to help Members create ROAs

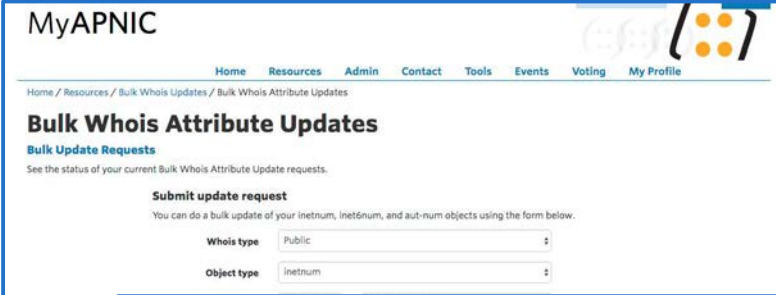
Eight sessions completed + 5 planned

## ROA stats (to date)

|  |                          |
|--|--------------------------|
| ROA-enabled Members                        | 632                      |
| Numbers of ROAs created                    | 442                      |
| Number of IPv4 addresses under ROAs (/32s) | 7,751,680                |
| Number of IPv6 addresses under ROAs (/56s) | 2,182,106,624            |
| % allocated space under ROAs (IPv4)        | Q3: 0.90%<br>(Q1: 0.78%) |
| % allocated space under ROAs (IPv6)        | Q3: 0.26%<br>(Q1: 0.22%) |



# What's New for MyAPNIC?



MyAPNIC

Home Resources Admin Contact Tools Events Voting My Profile

Home / Resources / Bulk Whois Updates / Bulk Whois Attribute Updates

## Bulk Whois Attribute Updates

**Bulk Update Requests**

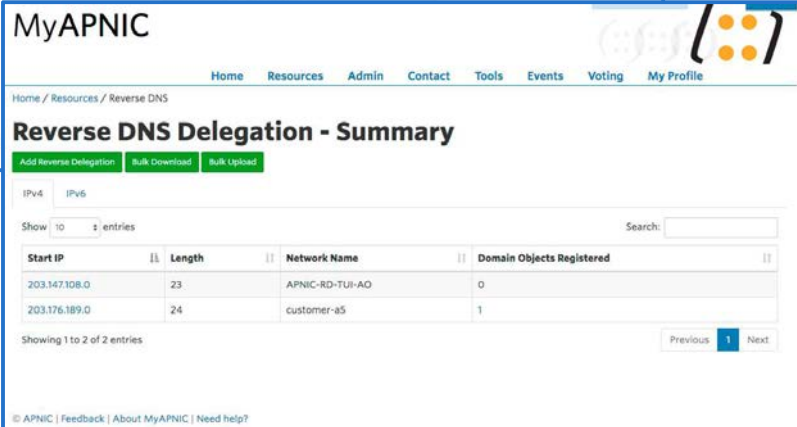
See the status of your current Bulk Whois Attribute Update requests.

**Submit update request**

You can do a bulk update of your inetnum, inet6num, and aut-num objects using the form below.

Whois type: Public

Object type: inetnum

MyAPNIC

Home Resources Admin Contact Tools Events Voting My Profile

Home / Resources / Reverse DNS

## Reverse DNS Delegation - Summary

[Add Reverse Delegation](#) [Bulk Download](#) [Bulk Upload](#)

IPv4 IPv6

Show 10 entries Search:

| Start IP      | Length | Network Name    | Domain Objects Registered |
|---------------|--------|-----------------|---------------------------|
| 203.147.108.0 | 23     | APNIC-RD-TUI-AO | 0                         |
| 203.176.189.0 | 24     | customer-a5     | 1                         |

Showing 1 to 2 of 2 entries

Previous 1 Next

© APNIC | Feedback | About MyAPNIC | Need help?

- ✓ Import route objects and create ROAs simultaneously
- ✓ Bulk update your whois contacts
- ✓ Simplified Corporate Contact appointment
- ✓ Manage reverse DNS for both IPv4 and IPv6 on single page



# Whois Data Quality Projects



- ✓ Monthly automated cleanup to remove 'orphaned' objects
- ✓ Whois check support for Members
- ✓ Easy invalid contact reporting

Q1 2017 - Mapping of Internet resources to organization object



# WHOIS and WHOWAS Development

APNIC



## APNIC Whois Search

To assist you with debugging problems, this whois query was received from IP Address:  
2001:dc0:a000:478ee:f637:674b:7c88  
If you experience problems with this form, try the legacy search form.

% APNIC found the following authoritative answer from: whois.apnic.net

% [whois.apnic.net]  
% Whois data copyright terms <http://www.apnic.net/db/dbcopyright.html>

% Information related to "AS4608 - AS4864"

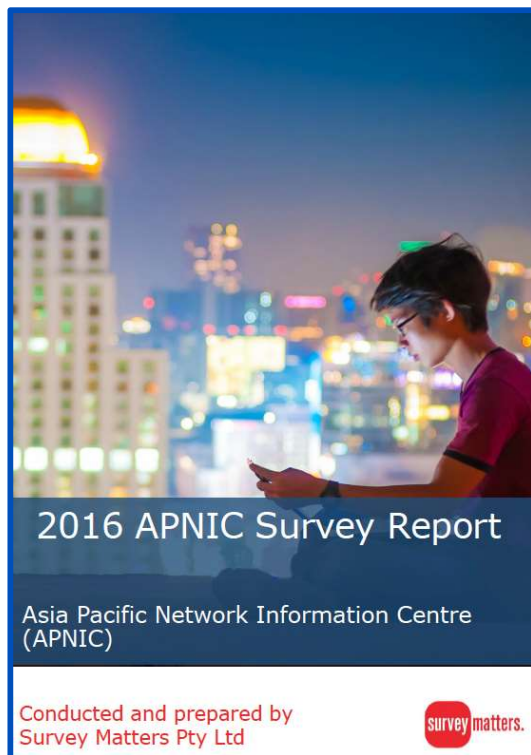
as-block: AS4608 - AS4864  
descr: APNIC ASN block  
remarks: These AS numbers are further assigned by APNIC  
remarks: to APNIC members and end-users in the APNIC region  
admin-c: HK28-AP  
tech-c: HK28-AP  
mnt-by: APNIC-PM  
mnt-lower: APNIC-PM  
changed: hn-changed@apnic.net 20020926  
changed: hn-changed@apnic.net 20030207  
changed: hn-changed@apnic.net 20050309  
source: APNIC

role: APNIC Hostmaster  
address: 6 Cordelia Street  
address: South Brisbane  
address: QLD 4101  
country: AU  
phone: +61 7 3558 3100  
fax-no: +61 7 3558 3199  
e-mail: helpdesk@apnic.net  
admin-c: AM511-AP  
tech-c: AM256-AP

- Upgrading WHOIS to version 4
  - RDAP code integrated into WHOIS codebase
  - Incorporating 'Org' object rules
- WHOWAS – development underway for a public historical information service
  - Testing historical service API system; extending RDAP result format
  - Prototype user interface for



# APNIC Survey 2016



- Thank you for your participation!
- Survey completed with 1,175 valid responses from 62 economies
- EC and Secretariat analysing results for 2017-18 planning
- Full report and appendices available at [www.apnic.net/survey](http://www.apnic.net/survey)

# Quality Management

- First full 3-year recertification audit since ISO certification in 2013
  - Passed in all respects
- Updated Quality System to ISO9001/2016
  - Improved and streamlined
- Information Security Management System (ISMS)
  - Using ISO27001 as a reference
  - Internal workshops conducted
  - Independent security appraisal completed

# APNIC Activities



Serving APNIC Members



Supporting Regional Internet  
Development



Cooperating with the Global  
Internet Community





# Training and Technical Assistance



- 39 face-to-face courses in 19 locations to 1,208 trainees
- 7 community trainers delivered 10 face-to-face courses
- 655 trainees in 90 eLearning sessions
- 104 YouTube videos; 101,434 views
- Training lab upgraded to simulate live multi-home ISP network
- Online APNIC Academy development underway
- 20 Technical Assistance presentations and engagements

# 2016 Policy Proposals



- Discussed at the APNIC 42 Policy SIG
  - Prop-116: Prohibit to transfer IPv4 address in the final /8 block
    - This proposal helps to ensure the distribution of the 'Final /8' (103/8) block is consistent with its original purpose, for distribution for new entrants to the industry
  - Revising eligible voters of Chair election and Chair's term
    - This proposal to change the APNIC SIG Guidelines was discussed in a joint sitting of all SIGs during the Policy SIG session at APNIC 42

# Technical Outreach



- APNIC participated in 10 NOG and IX events across the region with technical presentations, service updates and hostmaster consultations
- Keynote presentations by Paul Wilson (SANOG 28), George Michaelson (HKNOG) and Geoff Huston (BKNIX)
- Member gatherings held at SANOG 27 & 28, BKNIX



# Community Support



Supported 3 RIPE Anchor deployments in BT, KH and PG (further 2 underway); distributed 120+ RIPE Atlas probes

Systems support and sponsorship for NOG events

24 fellowships for APRICOT 2016; 53 for APNIC 42; contribution to fellowship funding for APriGF

J-root being deployed in Brisbane

Support for APIX meetings and for launch of PKIX



# Security Outreach



Building capacity and sharing best practice through security training and participation at 12 NOG and CERT events

Presented at LEA conferences in Malaysia and Republic of Korea

Provided training, advice and assistance in creation of new Tonga CERT

Invited FIRST to host Tech Colloquia with APRICOT 2016, SANOG 28, APNIC 42 + planned event with PACNOG 19

Paul Wilson joined GFCE Advisory Board – focus on security in Asia Pacific region



# IPv6 Outreach



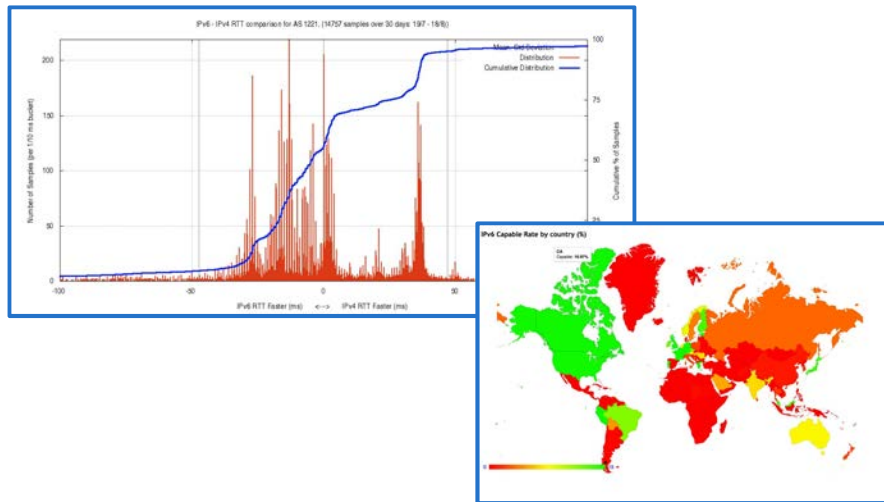
- 13 face-to-face IPv6 training sessions, reaching 306 trainees in nine economies
- 27 IPv6 elearning sessions reaching 195 trainees
- Promoting IPv6 with technical presentations at 17 regional events
- IPv6 joint training workshops with ITU in TH and KH
- Provided input to government policy makers to include IPv6 deployment in UN ESCAP's AP-IS plan
- Worked with Singapore IDA to develop IPv6 deployment strategies for ATRC





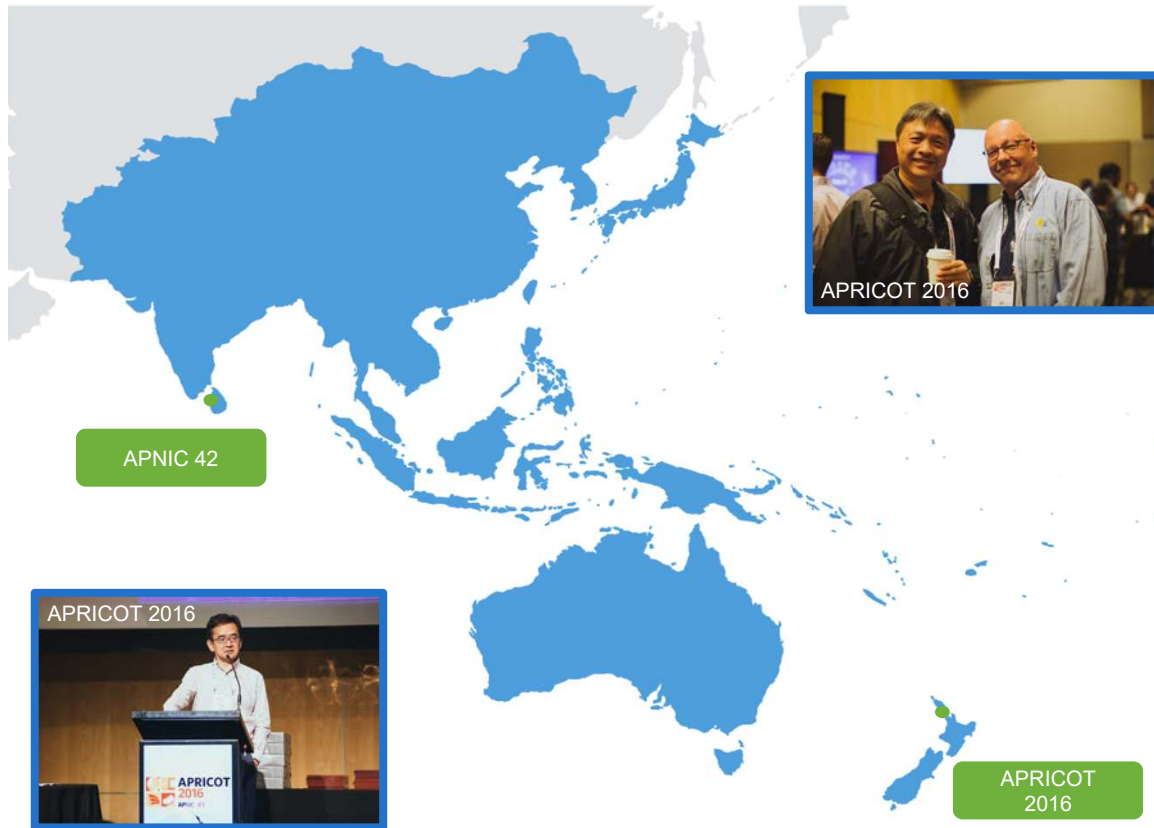
# APNIC Labs

Research to help the APNIC community make informed technical decisions



- Over 7 million measurements per day, measuring IPv6, DNSSEC, DNS
- Providing critical data for DNS Root Zone key roll and ICANN's Universal Acceptance (IDN) program
- Providing measurement and testing support to operators planning IPv6 deployment
- Research presentations at 18 forums including IETF, RIRs, ICANN, DNS OARC, NOGs, OECD
- Geoff Huston continues to play an active role in the ICANN SSAC

# APNIC Conferences



## APRICOT 2016

- 531 attendees from 53 economies
- 125 APNIC Member organizations represented
- 237 AGM delegates
- 1,238 remote participants (YouTube and Adobe Connect)



# blog.apnic.net



**Binding to an IPv6 subnet**  
By Joao Luis Silva Damas on 14 Sep 2016  
Category: Tech matters  
Tags: IPv4, IPv6, subnet

**Women in ICT: Helping people communicate drives Indonesia's female network engineers**  
By Robbie Mitchell on 9 Sep 2016  
Categories: Community, Development  
Tags: capacity development, ...

Earlier this year, the Association of Internet Service Providers in Indonesia (APIII) announced that internet penetration in Indonesia had now reached 40% of the population, or 100 million internet users - up from 88 million in 2014.

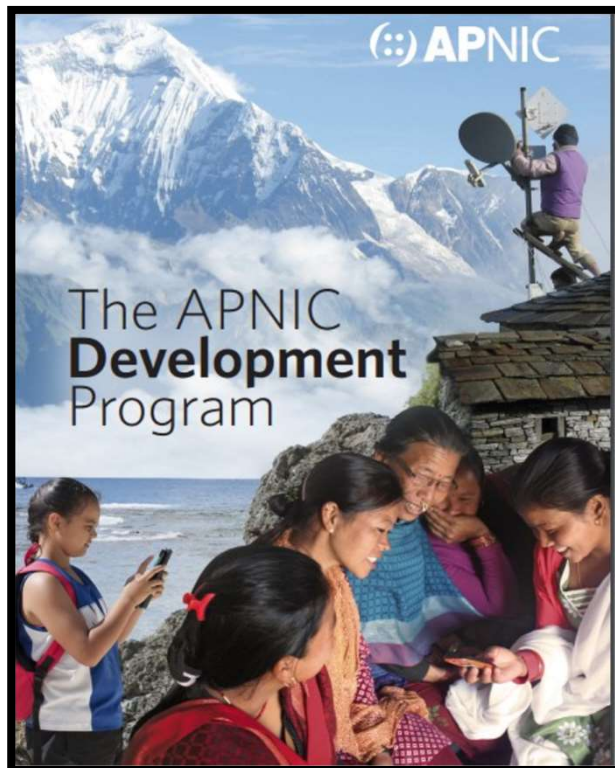
...ore jobs in the industry, opening the door for a operators to build the network for the future. at telecommunication network and service. asia (Telkom), XL, with has also open increase in job opp

| Time Period | Value (Views/Engagement) |
|-------------|--------------------------|
| Start       | ~2,000                   |
| 1st Peak    | ~10,000                  |
| 2nd Peak    | ~15,000                  |
| 3rd Peak    | ~18,000                  |
| 4th Peak    | ~25,000                  |
| 5th Peak    | ~28,000                  |

- Active source of community news and views – 248 posts including 52 guest posts
- Growing readership – 133,000 views in 2016, up 51%
- Submissions welcome!



# Development Program



Funds received...

- IDRC (CA) and SIDA (SE) small grants programme – AP
- JICA Security training and courseware development
- ASEAN/IDA IPv6 survey and workshop – SG/AP
- ITU Direct Country assistance – KH, and workshops – AP (IPv6)
- World Bank training – MM

# APNIC Foundation



- Incorporation documents have been submitted for HK government approval
  - Application for registered charity status will begin following incorporation
- PriceWaterhouseCoopers Hong Kong appointed as company secretary
- Draft Foundation Board appointment process under consideration by the EC



- 300+ applications for 2016 Grants
  - APNIC Internet Operations Research Grant
  - ISOC Cybersecurity Grant
  - Community Impact Grant
  - Technical Innovation Grant
- 10 projects selected from nine economies
- AUD 450k in project funding from supporters including ISOC, IDRC-CRDI, APNIC

# APNIC Activities



Serving APNIC Members



Supporting Regional Internet  
Development

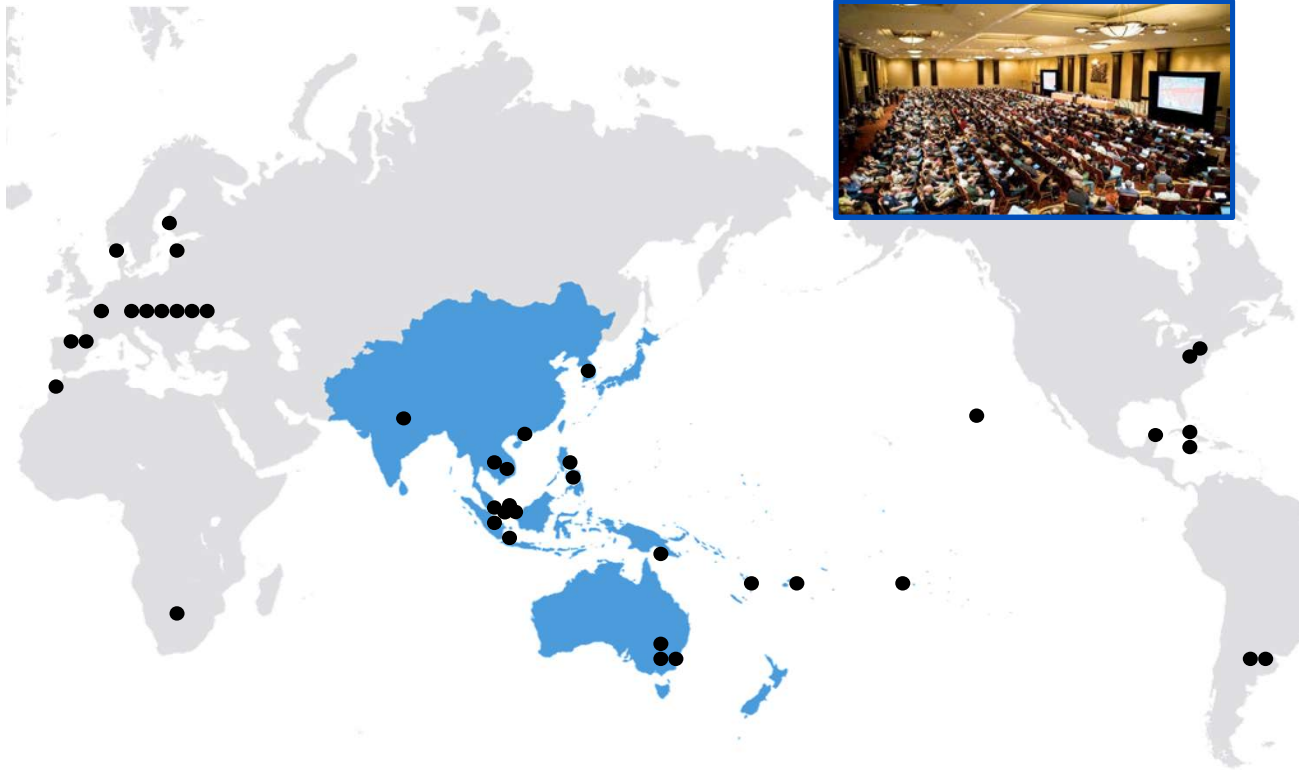


Cooperating with the Global  
Internet Community





# Global Cooperation



- With ICANN on APT prep process for WTSA and 2017 WTDC
- With LACNIC on IPv6 at APEC-TEL 53
- With FIRST to host Tech Colloquia at four AP events
- With ISOC, ICANN and RIPE on IPv6 panel at UNCTAD eCommerce Week
- With NRO for IPv6 session at ITAC and OECD Ministerial Meeting
- Paul Wilson joined GFCE Advisory Board



# IANA Stewardship Transition

## **ICG**

- Final proposal submitted to NTIA (March 2016)
- Passed NTIA criteria (June 2016)

## **SLA**

- RIRs finalised the SLA with ICANN and signed at ICANN 56 (June 2016)

## **IPR Agreements**

- Comment period closed 12 Sept – NRO confirmed the agreements met the requirements of numbers community





# RIR Collaboration



AFRINIC 24



Sandra Bras, RIPE NCC



RIPE 72

- APNIC RDAP code incorporated into RIPE WHOIS version 4
- RPKI trust anchor coordination with NRO ECG
- Communications support for AFRINIC 24
- RIR staff visits to APNIC from LACNIC, AFRINIC, RIPE NCC
- Joint APNIC EC - RIPE Board meeting at RIPE 72
- Working with RIPE NCC to adopt RIPE Forum software
- Active NRO CG participation – engineering, registry, comms, finance, HR





# Upcoming APNIC Conference

**APRICOT 2017**  
**APNIC 43**

HO CHI MINH CITY  
VIETNAM  
20 February – 2 March 2017

**Registration will open soon**

[2017.apricot.net](http://2017.apricot.net)



# Later Conferences

- APNIC 44, Taichung, Taiwan
  - 7 to 14 September 2017
- APRICOT 2018, Kathmandu, Nepal
  - 19 February to 1 March 2018
- APNIC 46, Noumea, New Caledonia
  - 6 to 13 September 2018



# Stay in Touch!



blog.apnic.net

apnic.net/social

**THANK YOU**

## APNIC 42 – APNIC Member Meeting – Agenda (Draft v3)

| <b>Time</b>  | <b>Topic</b>   | <b>Speaker</b>      |
|--------------|--|---------------------|
| <b>14:00</b> | EC Chair welcome, introductions, and opening remarks | Gaurab Raj Upadhaya |
| <b>14:05</b> | APNIC Secretariat Report                             | Paul Wilson         |
| <b>14:25</b> | APNIC EC Treasurer report                            | James Spenceley     |
| <b>14:35</b> | APNIC EC Report                                      | Gaurab Raj Upadhaya |
| <b>14:50</b> | <b>Open MiC</b>                                      |                     |
| <b>15:00</b> | NRO NC Election Results                              | Election Chair      |
| <b>15:10</b> | Policy SIG Report                                    | Masato Yamanishi    |
| <b>15:20</b> | NIR SIG Report                                       | Ajai Kumar          |
| <b>15:30</b> | Afternoon Tea break                                  |                     |
| <b>16:00</b> | IANA Update – PTI arrangements                       | TBC                 |
| <b>16:10</b> | Cooperation SIG Report                               | Dr Govind           |
| <b>16:20</b> | IPv6 Readiness Measurement BoF Report                | Shian-Shyong Tseng  |
| <b>16:30</b> | Welcome to APNIC 44                                  | TBC                 |
| <b>16:40</b> | <b>Open Mic</b>                                      |                     |
| <b>16:50</b> | Vote of Thanks                                       | Paul Wilson         |
| <b>17:00</b> | Final remarks and close                              | Gaurab Raj Upadhaya |

# Agenda Item 9

## Financial reports



## Financial Highlights YTD August

- Equity Position > 12% to date in 2016 ✓
  - Forecast Surplus of \$2,348k for 2016(budget = \$1,400k)
- Revenue tracking \$581k above budget ✓
  - Forecast \$774k above budget for 2016
- Expenses tracking \$379k below budget ✓
  - Forecast \$174k below budget for 2016
- Cash Flow + \$1,213K to date in 2016 ✓
- Activity expenditure in line with budget estimates ✓
- Membership Growth > than budget assumption ✓
  - Forecast to exceed > 1,000 new members in 2016

APNIC 2

This block contains a list of financial highlights for YTD August. Each item is a bullet point with a checkmark, and some have sub-bullets providing forecast details. The APNIC logo and a small number '2' are at the bottom.

## Statement of Financial Position

|                          | 31/08/2016        | Year End 2016     | Variance         | % Variance |
|--------------------------|-------------------|-------------------|------------------|------------|
| <b>ASSETS</b>            |                   |                   |                  |            |
| Current Assets           | 9,465,411         | 7,773,338         | 1,692,073        | 22%        |
| Non-Current Assets       | 29,094,212        | 26,933,805        | 2,160,407        | 8%         |
| <b>Total ASSETS</b>      | <b>38,559,623</b> | <b>34,707,143</b> | <b>3,852,480</b> | <b>11%</b> |
| <b>LIABILITIES</b>       |                   |                   |                  |            |
| Current Liabilities      | 11,807,442        | 10,829,344        | 978,098          | 9%         |
| Long Term Liabilities    | 580,167           | 558,340           | 21,827           | 4%         |
| <b>Total LIABILITIES</b> | <b>12,387,609</b> | <b>11,387,684</b> | <b>999,925</b>   | <b>9%</b>  |
| <b>TOTAL EQUITY</b>      | <b>26,172,014</b> | <b>23,319,459</b> | <b>2,852,555</b> | <b>12%</b> |

All amounts in AUD – Australian Dollars

**APNIC**



3

## Financial Stability Measure

|   | 31/08/2016   | 2015         | 2014         | 2013         |
|---|--------------|--------------|--------------|--------------|
| Total Equity  | \$26,172,014 | \$23,319,460 | \$21,388,497 | \$17,826,296 |
| % Equity covered by Cash/ Cash Equivalents            | 109.1%       | 108.2%       | 109.1%       | 110.7%       |
| Actual Daily Operating Expenses                       | \$48,953     | \$46,077     | \$42,558     | \$39,959     |
| <b>Number of Months of expenses covered by Equity</b> | <b>17.53</b> | <b>16.64</b> | <b>16.52</b> | <b>14.67</b> |

Target of 18 Months

All amounts in AUD – Australian Dollars

**APNIC**



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## Statement of Financial Position

### Net Equity has position increased by 12% (\$2.85M) in 2016

- Current Assets increased by 22% \$1.69M
  - Increase in cash \$1.2M
  - Membership renewals effect on receivables \$189k.
  - Expenses incurred for NRO to be recovered \$208k
  - Prepayment of deferred expenses \$318k
- Non-Current Assets increased by 8% \$2.16M
  - Capital Equipment net of Depreciation \$200k
  - Investment portfolio \$2.10M
    - Capital Growth \$607k
    - Transfers of Funds \$1M
    - Investment income net of fees \$497k

All amounts in AUD – Australian Dollars

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## Statement of Financial Position

- Current liabilities increased by 9% \$978k
  - Decrease in Payables \$92k
  - Increase in Prepaid Member fees \$982k.
  - Increase in Leave Provisions \$89k
- Non-Current Liabilities increased by 4% \$22k
  - Increase in Non current Leave Provisions \$22k

All amounts in AUD – Australian Dollars

**APNIC**



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## Operating Surplus

| REVENUE and EXPENSES (AUD)         | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016    | Budget 2016      | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|------------------------------------|---------------------|---------------------|------------|------------------|------------------|---------------------------------|--------------------------------|
| Total Revenue                      | 13,473,585          | 12,378,422          | 9%         | 20,265,379       | 19,491,288       | 774,091                         | 4%                             |
| Total Expenses                     | 11,227,690          | 10,243,159          | 10%        | 17,916,852       | 18,091,244       | -174,392                        | -1%                            |
| <b>OPERATING SURPLUS/(DEFICIT)</b> | <b>2,245,895</b>    | <b>2,135,263</b>    | <b>5%</b>  | <b>2,348,527</b> | <b>1,400,044</b> | <b>948,483</b>                  | <b>68%</b>                     |

All amounts in AUD – Australian Dollars

**APNIC**



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## Statement of Income - Revenue

| REVENUE (AUD)        | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016     | Budget 2016       | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|----------------------|---------------------|---------------------|------------|-------------------|-------------------|---------------------------------|--------------------------------|
| Investment income    | 664,214             | 607,970             | 9%         | 881,714           | 832,500           | 49,214                          | 6%                             |
| Membership fees      | 12,111,111          | 11,146,693          | 9%         | 18,320,670        | 17,736,118        | 584,552                         | 3%                             |
| Non-members fees     | 160,359             | 163,307             | -2%        | 242,417           | 246,170           | -3,753                          | -2%                            |
| Reactivation fees    | 28,200              | 28,400              | -1%        | 43,536            | 46,000            | -2,464                          | -5%                            |
| Sign-Up fees         | 330,750             | 278,625             | 19%        | 486,750           | 438,000           | 48,750                          | 11%                            |
| Transfer fees        | 90,991              | 41,551              | 119%       | 125,991           | 75,000            | 50,991                          | 68%                            |
| Sundry income        | 87,961              | 111,875             | -21%       | 164,301           | 117,500           | 46,801                          | 40%                            |
| <b>TOTAL REVENUE</b> | <b>13,473,585</b>   | <b>12,378,422</b>   | <b>9%</b>  | <b>20,265,379</b> | <b>19,491,288</b> | <b>774,091</b>                  | <b>4%</b>                      |

All amounts in AUD – Australian Dollars

**APNIC**



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## Statement of Income - Revenue

Revenue tracking **\$581k(5%)** above budget

Forecast **\$774k (4%)** above budget for 2016

- Membership Fees \$345k above budget
  - Membership growth continues above trend following strong growth at the end of 2015
  - Forecast to exceed 1,000 new members in 2016
    - » Net growth of 541 at the end of August
    - » Net growth forecast at 698
- Transfers increasing, \$41k above budget
- Investment income \$110k above budget
  - Forecast performance of the funds will be around \$17k below budget by the end of 2016, with Interest income expected to be \$66k above budget.

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## Statement of Income - Expenses

| EXPENSES (AUD)                      | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016     | Budget 2016       | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|-------------------------------------|---------------------|---------------------|------------|-------------------|-------------------|---------------------------------|--------------------------------|
| Bank charges                        | 110,365             | 97,834              | 13%        | 169,014           | 170,000           | -986                            | -1%                            |
| Communication expenses              | 348,839             | 371,368             | -6%        | 541,741           | 556,186           | -14,445                         | -3%                            |
| Computer expenses                   | 327,985             | 355,126             | -8%        | 532,138           | 624,521           | -92,383                         | -15%                           |
| Depreciation expense                | 522,665             | 506,580             | 3%         | 788,454           | 812,365           | -23,911                         | -3%                            |
| Doubtful debt expenses              | 17,898              | -51,246             | -135%      | 26,234            | 25,000            | 1,234                           | 5%                             |
| ICANN contract fee                  | 170,870             | 189,126             | -10%       | 254,430           | 262,000           | -7,570                          | -3%                            |
| Insurance expense                   | 86,973              | 84,946              | 2%         | 128,373           | 136,800           | -8,427                          | -6%                            |
| Meeting and training expenses       | 193,838             | 113,896             | 70%        | 426,146           | 447,900           | -21,754                         | -5%                            |
| Membership fees                     | 32,701              | 30,249              | 8%         | 54,749            | 72,168            | -17,419                         | -24%                           |
| Office operating expenses           | 208,713             | 198,074             | 5%         | 317,269           | 325,676           | -8,407                          | -3%                            |
| Postage & delivery                  | 20,477              | 30,820              | -34%       | 43,377            | 48,700            | -5,323                          | -11%                           |
| Printing & photocopy                | 26,431              | 23,564              | 12%        | 39,075            | 37,940            | 1,135                           | 3%                             |
| Professional fees                   | 856,232             | 656,400             | 30%        | 1,482,928         | 1,473,120         | 9,808                           | 1%                             |
| Recruitment expense                 | 67,457              | 73,692              | -8%        | 99,121            | 95,000            | 4,121                           | 4%                             |
| Salaries and personnel expenses     | 6,707,334           | 6,146,801           | 9%         | 10,231,618        | 10,231,618        | 0                               | 0%                             |
| Sponsorship and Publicity expenses  | 182,274             | 114,063             | 60%        | 625,988           | 639,750           | -13,762                         | -2%                            |
| Staff training/ Conference expenses | 107,004             | 91,261              | 17%        | 161,197           | 162,500           | -1,303                          | -1%                            |
| Translation expenses                | 2,228               | 643                 | 247%       | 10,000            | 10,000            | 0                               | 0%                             |
| Travel expenses                     | 1,237,405           | 1,209,962           | 2%         | 1,985,000         | 1,960,000         | 25,000                          | 1%                             |
| <b>TOTAL EXPENSES</b>               | <b>11,227,690</b>   | <b>10,243,159</b>   | <b>10%</b> | <b>17,916,852</b> | <b>18,091,244</b> | <b>-174,392</b>                 | <b>-1%</b>                     |

All amounts in AUD – Australian Dollars

APNIC



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## Statement of Income - Expenses

Expenses tracking \$379k(3%) below budget

Forecast \$174k (1%) below budget for 2016

- **Communication expenses** – The expense will be below budget at the end of the year, planned expenditure on the VOIP system of \$12k will not occur.
- **Computer expenses** – The major variances are \$22k in relation stenography software, \$30k for VMware licenses, \$20k for offsite backup, \$12k Cloud Coding cost and \$16k for the SAN emergency support. \$45k for CRM development work will be redistributed from the capital budget and recognised in operating expenses as set out in section 3 below.
- **Depreciation expenses** – Depreciation expenses are lower than budget, this is a result of timing and the value of capital expenses being lower than planned in the budget.
- **Meeting & training expenses** – Overall forecast by the end of the year is expected to be slightly below budget due to savings from conference delivery and room hire costs absorbed by host communities.
- **Membership fees** – expense area included provision for corporate sponsorship of industry events, currently tracking below budget. The major variance relates to the ISOC Membership being Silver rather than Gold as budgeted, this saving is used in Sponsorship to support IETF.
- **Salaries and personnel expenses** – Salary and wages expenses are affected by many variables including leave provisions and staff movements, the current forecast indicates that this expense area will be in line with budget by the end of 2016.
- **Travel expenses** – Travel expenses are expected to be above budget by more than \$25k, this forecast will continue to be reviewed as we get a better picture of travel requirements for the remainder of 2016.

APNIC



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## Cash Flows YTD August 2016

| Accounts                                  | YTD August 2016   |
|---|-------------------|
| <b>Operating Activities</b>               |                   |
| Net Income                                | 2,245,895         |
| <b>Adjustments to Profit/(Loss)</b>       |                   |
| Accounts Receivable                       | -188,810          |
| Other Current Asset                       | -290,319          |
| Accounts Payable                          | 102,610           |
| Sales Tax Payable                         | 3,132             |
| Other Current Liabilities                 | 872,355           |
| <b>Total Adjustments to Profit/(Loss)</b> | <b>498,969</b>    |
| <b>Total Operating Activities</b>         | <b>2,744,865</b>  |
| <b>Investing Activities</b>               |                   |
| Fixed Asset                               | -56,622           |
| Other Asset                               | -2,103,785        |
| <b>Total Investing Activities</b>         | <b>-2,160,407</b> |
| <b>Financing Activities</b>               |                   |
| Long Term Liabilities                     | 21,827            |
| Other Equity                              | 606,659           |
| <b>Total Financing Activities</b>         | <b>628,486</b>    |
| <b>Net Change in Cash for Period</b>      | <b>1,212,944</b>  |
| Cash at Beginning of Period               | 6,286,996         |
| Cash at End of Period                     | 7,499,940         |

APNIC



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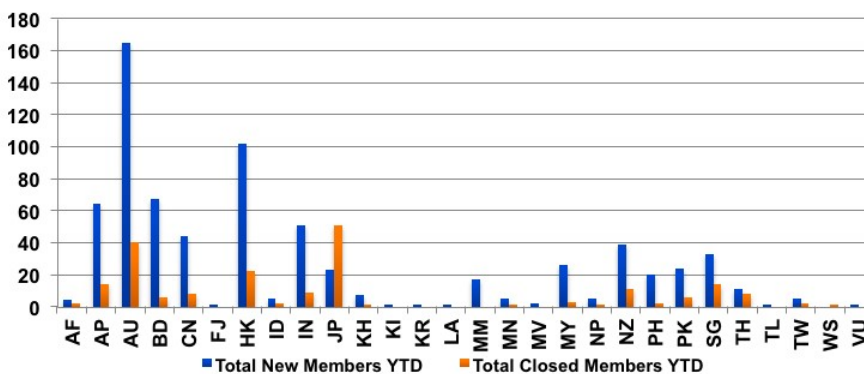
## Capital Expenditure YTD August 2016

| CAPITAL (AUD)                      | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016    | Budget 2016      | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|------------------------------------|---------------------|---------------------|------------|------------------|------------------|---------------------------------|--------------------------------|
| Equipment & Software               | 573,539             | 585,933             | -2%        | 1,030,884        | 1,783,884        | -753,000                        | -42%                           |
| Office Furniture & Fittings        | 8,726               | 15,491              | -44%       | 51,765           | 66,765           | -15,000                         | -22%                           |
| <b>Total - Capital Expenditure</b> | <b>582,265</b>      | <b>601,425</b>      | <b>-3%</b> | <b>1,082,649</b> | <b>1,850,649</b> | <b>-768,000</b>                 | <b>-41%</b>                    |

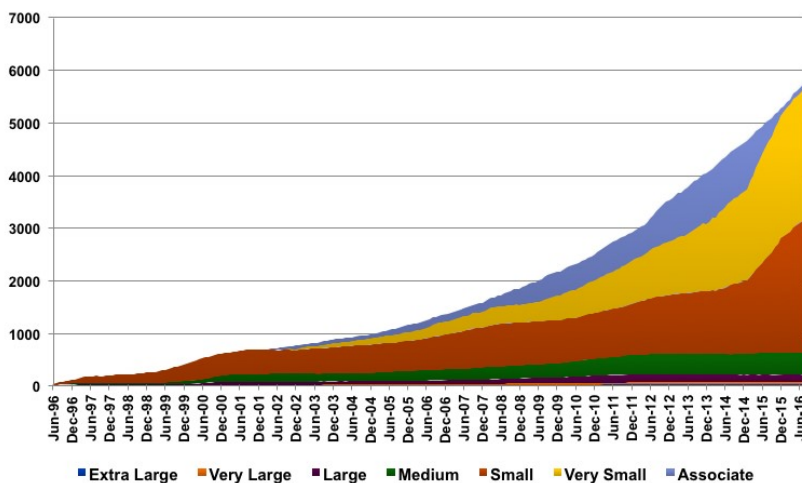
Major projects that will be partially completed or on hold contributing to this variance are:

- The 2016 budget included Virtualisation of US, JP, HK remote sites currently being reviewed.
- The Stats Development Work budgeted at \$100k, most cost deferred until 2017.
- The CRM Development Work was budgeted at \$100k, forecast expenditure will be around however \$45k, treated as Operating Expense
- Reduced expenditure on Licensing for software such as Office 2016, VMware fusion New Routers & Switches replacement budget of \$63k
- Customer Billing Development, originally budgeted \$30k capex, will be delivered through operating expenditure.

## Membership Growth



## Membership Growth



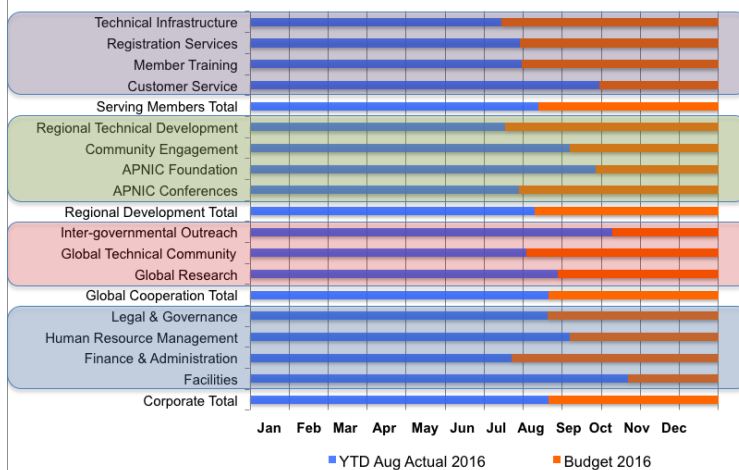
APNIC



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## Expenses by Activity

% Budget utilised by Activity 2016



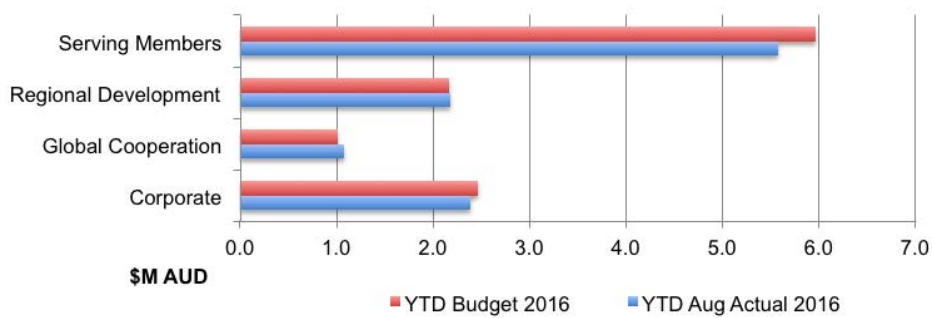
APNIC



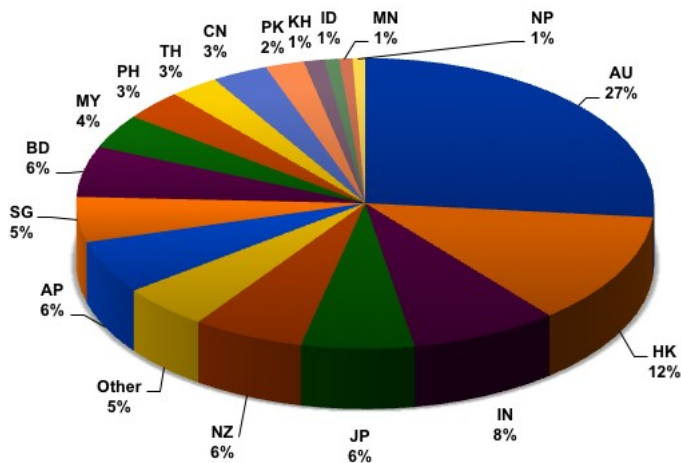
16

## Expenses by Activity

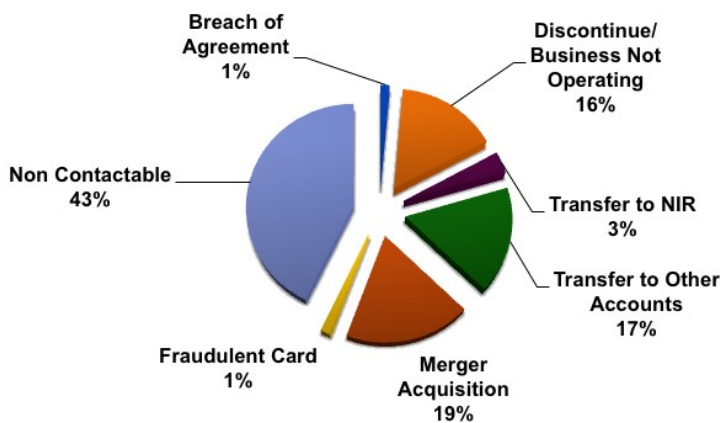
YTD Actual vs. Budget by Activity Code



## Membership by Economy



## Closures YTD August





# Monthly Financial Report

(in AUD)

August 2016

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# 1 Statement of Financial Position

|  | 31/08/2016        | Year-End 2015     | % Change from 31/12/2015 |
|--|-------------------|-------------------|--------------------------|
| <b>CURRENT ASSETS</b>                      |                   |                   |                          |
| Cash/ Term deposits                        | 7,499,940         | 6,286,996         | 19%                      |
| Receivables                                | 1,124,388         | 896,345           | 25%                      |
| Others                                     | 841,083           | 589,997           | 43%                      |
| <b>TOTAL CURRENT ASSETS</b>                | <b>9,465,411</b>  | <b>7,773,338</b>  | <b>22%</b>               |
| <b>NON-CURRENT ASSETS</b>                  |                   |                   |                          |
| Other financial assets                     | 21,055,586        | 18,951,801        | 11%                      |
| Property, plant and equipment              | 7,899,046         | 7,842,424         | 1%                       |
| Deferred tax assets/ liabilities           | 139,580           | 139,580           | 0%                       |
| <b>TOTAL NON-CURRENT ASSETS</b>            | <b>29,094,212</b> | <b>26,933,805</b> | <b>8%</b>                |
| <b>TOTAL ASSETS</b>                        | <b>38,559,623</b> | <b>34,707,143</b> | <b>11%</b>               |
| <b>CURRENT LIABILITIES</b>                 |                   |                   |                          |
| Payables                                   | 1,052,286         | 1,144,483         | -8%                      |
| Provisions                                 | 1,227,014         | 1,138,287         | 8%                       |
| Unearned revenue                           | 9,528,142         | 8,546,573         | 11%                      |
| <b>TOTAL CURRENT LIABILITES</b>            | <b>11,807,442</b> | <b>10,829,344</b> | <b>9%</b>                |
| <b>NON - CURRENT LIABILITIES</b>           |                   |                   |                          |
| Deferred Tax Liabilities                   | 276,432           | 276,432           | 0%                       |
| Provisions                                 | 303,735           | 281,908           | 8%                       |
| <b>TOTAL NON-CURRENT LIABILITIES</b>       | <b>580,167</b>    | <b>558,340</b>    | <b>4%</b>                |
| <b>TOTAL LIABILITIES</b>                   | <b>12,387,609</b> | <b>11,387,683</b> | <b>9%</b>                |
| <b>NET ASSETS</b>                          | <b>26,172,014</b> | <b>23,319,460</b> | <b>12%</b>               |
| <b>EQUITY</b>                              |                   |                   |                          |
| Share capital                              | 1                 | 1                 | 0%                       |
| Reserves other financial assets investment | 1,196,119         | 589,460           | 103%                     |
| Retained earnings                          | 22,729,998        | 20,773,833        | 9%                       |
| Net Income                                 | 2,245,895         | 1,956,165         | 15%                      |
| <b>TOTAL EQUITY</b>                        | <b>26,172,014</b> | <b>23,319,460</b> | <b>12%</b>               |

Table 1. Statement of Financial Position

## 1.1 Notes to Financial Position

The Statement of Financial Position shows that APNIC's net position has increased by 12% compared to the end of last year, a highlight is the capital growth in the investment fund, which has increased by \$607k since the end of 2015.

## 2 Statement of Income

The 2017 full year forecast has been derived from a detailed review of the expected revenues and committed and planned expenditure for the remainder of 2016.

### 2.1 Revenue

| REVENUE (AUD)        | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016     | Budget 2016       | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|----------------------|---------------------|---------------------|------------|-------------------|-------------------|---------------------------------|--------------------------------|
| Investment income    | 664,214             | 607,970             | 9%         | 881,714           | 832,500           | 49,214                          | 6%                             |
| Membership fees      | 12,111,111          | 11,146,693          | 9%         | 18,320,670        | 17,736,118        | 584,552                         | 3%                             |
| Non-members fees     | 160,359             | 163,307             | -2%        | 242,417           | 246,170           | -3,753                          | -2%                            |
| Reactivation fees    | 28,200              | 28,400              | -1%        | 43,536            | 46,000            | -2,464                          | -5%                            |
| Sign-Up fees         | 330,750             | 278,625             | 19%        | 486,750           | 438,000           | 48,750                          | 11%                            |
| Transfer fees        | 90,991              | 41,551              | 119%       | 125,991           | 75,000            | 50,991                          | 68%                            |
| Sundry income        | 87,961              | 111,875             | -21%       | 164,301           | 117,500           | 46,801                          | 40%                            |
| <b>TOTAL REVENUE</b> | <b>13,473,585</b>   | <b>12,378,422</b>   | <b>9%</b>  | <b>20,265,379</b> | <b>19,491,288</b> | <b>774,091</b>                  | <b>4%</b>                      |

Table 2. Revenue

#### Notes to Revenue:

- Investment income** – Income from the investment portfolio is tracking lower than anticipated in the budget, this is partially offset by a positive variance in interest income. The forecast provided by the investment advisor has improved since the last report and indicates that by year end the performance of the funds will be around \$17k below budget, with Interest income expected to be close to \$66k above budget.
  - The portfolio closed August flat for the month and finished down -0.01%, matching the performance of the benchmark. For the calendar year to date, the portfolio is up 5.86% (after fees) against the benchmark performance of 6.01%. Over a year rolling basis, the portfolio is up 5.95% (after fees) against 5.71% for the benchmark.
  - The domestic equity market was unable to build on July's strong performance, but global markets fared better. Bonds were supported by the RBA's decision to cut rates in August by another 25bps whilst commodities and gold weakened on further profit taking following a stellar performance in 2016. Throughout August, the additional \$500k investment was invested across the portfolio with the most significant transactions relating to this implementation.
- Membership fees** – Membership fees are tracking 3% higher than the budget, a result of the final 2015 membership growth being higher than estimated in the budget submission and new membership growth so far in 2016 being greater than anticipated, this is also highlighted in the positive variance for Sign-Up Fees.
- Sign-up fees** - Sign-up fees are estimated to be above budget by the end of the year as new membership growth is tracking above the target of 925 set out in the budget. New members are forecast to exceed 1,000 in 2016. Around 14% of new members are from LDC's.
- Transfer fees** – Transfers are tracking higher than budget, based on the activity up to the end of August, it is anticipated that fees from transfers will exceed budget by more than \$50k by the end of the year.
- Sundry income** – Sundry income is forecast to exceed the 2016 budget. This variance is attributed to higher levels of sponsorships for APNIC meetings than budgeted and meeting and workshop registrations at these events expected to be higher than budgeted.

## 2.2 Expenses

| EXPENSES (AUD)                      | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016     | Budget 2016       | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|-------------------------------------|---------------------|---------------------|------------|-------------------|-------------------|---------------------------------|--------------------------------|
| Bank charges                        | 110,365             | 97,834              | 13%        | 169,014           | 170,000           | -986                            | -1%                            |
| Communication expenses              | 348,839             | 371,368             | -6%        | 541,741           | 556,186           | -14,445                         | -3%                            |
| Computer expenses                   | 327,985             | 355,126             | -8%        | 532,138           | 624,521           | -92,383                         | -15%                           |
| Depreciation expense                | 522,665             | 506,580             | 3%         | 788,454           | 812,365           | -23,911                         | -3%                            |
| Doubtful debt expenses              | 17,898              | -51,246             | -135%      | 26,234            | 25,000            | 1,234                           | 5%                             |
| ICANN contract fee                  | 170,870             | 189,126             | -10%       | 254,430           | 262,000           | -7,570                          | -3%                            |
| Insurance expense                   | 86,973              | 84,946              | 2%         | 128,373           | 136,800           | -8,427                          | -6%                            |
| Meeting and training expenses       | 193,838             | 113,896             | 70%        | 426,146           | 447,900           | -21,754                         | -5%                            |
| Membership fees                     | 32,701              | 30,249              | 8%         | 54,749            | 72,168            | -17,419                         | -24%                           |
| Office operating expenses           | 208,713             | 198,074             | 5%         | 317,269           | 325,676           | -8,407                          | -3%                            |
| Postage & delivery                  | 20,477              | 30,820              | -34%       | 43,377            | 48,700            | -5,323                          | -11%                           |
| Printing & photocopy                | 26,431              | 23,564              | 12%        | 39,075            | 37,940            | 1,135                           | 3%                             |
| Professional fees                   | 856,232             | 656,400             | 30%        | 1,482,928         | 1,473,120         | 9,808                           | 1%                             |
| Recruitment expense                 | 67,457              | 73,692              | -8%        | 99,121            | 95,000            | 4,121                           | 4%                             |
| Salaries and personnel expenses     | 6,707,334           | 6,146,801           | 9%         | 10,231,618        | 10,231,618        | 0                               | 0%                             |
| Sponsorship and Publicity expenses  | 182,274             | 114,063             | 60%        | 625,988           | 639,750           | -13,762                         | -2%                            |
| Staff training/ Conference expenses | 107,004             | 91,261              | 17%        | 161,197           | 162,500           | -1,303                          | -1%                            |
| Translation expenses                | 2,228               | 643                 | 247%       | 10,000            | 10,000            | 0                               | 0%                             |
| Travel expenses                     | 1,237,405           | 1,209,962           | 2%         | 1,985,000         | 1,960,000         | 25,000                          | 1%                             |
| <b>TOTAL EXPENSES</b>               | <b>11,227,690</b>   | <b>10,243,159</b>   | <b>10%</b> | <b>17,916,852</b> | <b>18,091,244</b> | <b>-174,392</b>                 | <b>-1%</b>                     |

Table 3. Expenses

### Notes to Expenses:

It is forecast that expenses will be less than the approved budget for 2016. Major variances include:

- **Communication expenses** – The expense will be below budget at the end of the year, planned expenditure on the VOIP system of \$12k will not occur.
- **Computer expenses** – The major variances are \$22k in relation stenography software, \$30k for VMware licenses, \$20k for offsite backup, \$12k Cloud Coding cost and \$16k for the SAN emergency support. \$45k for CRM development work will be redistributed from the capital budget and recognised in operating expenses as set out in section 3 below.
- **Depreciation expenses** – Depreciation expenses are lower than budget, this is a result of timing and the value of capital expenses being lower than planned in the budget.
- **Meeting & training expenses** – Overall forecast by the end of the year is expected to be slightly below budget due to savings from conference delivery and room hire costs absorbed by host communities.
- **Membership fees** – expense area included provision for corporate sponsorship of industry events, currently tracking below budget. The major variance relates to the ISOC Membership being Silver rather than Gold as budgeted; this saving is used in Sponsorship to support IETF.
- **Salaries and personnel expenses** – Salary and wages expenses are affected by many variables including leave provisions and staff movements, the current forecast indicates that this expense area will be in line with budget by the end of 2016.

- **Travel expenses** – Travel expenses are expected to be above budget by more than \$25k, this forecast will continue to be reviewed as we get a better picture of travel requirements for the remainder of 2016.

## 2.3 Operating Surplus/ Deficit

| REVENUE and EXPENSES (AUD)         | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016    | Budget 2016      | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|------------------------------------|---------------------|---------------------|------------|------------------|------------------|---------------------------------|--------------------------------|
| Total Revenue                      | 13,473,585          | 12,378,422          | 9%         | 20,265,379       | 19,491,288       | 774,091                         | 4%                             |
| Total Expenses                     | 11,227,690          | 10,243,159          | 10%        | 17,916,852       | 18,091,244       | -174,392                        | -1%                            |
| <b>OPERATING SURPLUS/(DEFICIT)</b> | <b>2,245,895</b>    | <b>2,135,263</b>    | <b>5%</b>  | <b>2,348,527</b> | <b>1,400,044</b> | <b>948,483</b>                  | <b>68%</b>                     |

Table 4. Operating Surplus/ Deficits

## 3 Capital Expenditure

The table below provides overview of current capital expenditure as of August 2016.

| CAPITAL (AUD)                      | YTD Actual Aug 2016 | YTD Actual Aug 2015 | Variance % | Forecast 2016    | Budget 2016      | Forecast Variation to Budget \$ | Forecast Variation to Budget % |
|------------------------------------|---------------------|---------------------|------------|------------------|------------------|---------------------------------|--------------------------------|
| Equipment & Software               | 573,539             | 585,933             | -2%        | 1,030,884        | 1,783,884        | -753,000                        | -42%                           |
| Office Furniture & Fittings        | 8,726               | 15,491              | -44%       | 51,765           | 66,765           | -15,000                         | -22%                           |
| <b>Total - Capital Expenditure</b> | <b>582,265</b>      | <b>601,425</b>      | <b>-3%</b> | <b>1,082,649</b> | <b>1,850,649</b> | <b>-768,000</b>                 | <b>-41%</b>                    |

Table 5. Capital Expenditure

### Notes to Capital Expenditure:

Major projects that will be partially completed or on hold contributing to this variance are:

- The 2016 budget included \$323k for the virtualisation of US, JP, HK remote sites virtualisation, the majority of this will not be incurred in 2016, an in depth study into the hosting strategy will be undertaken during 2016 with any expenditure likely to be incurred in 2017.
- The budget contained \$150k for Root Server deployment and upgrades, it is forecast that only \$30k of this will be committed in 2016.
- The Stats Development Work budgeted at \$100k, it is anticipated that only \$30k will be expensed in 2016, with parts of the implementation being deferred until 2017.
- The CRM Development Work was budgeted at \$100k, forecast expenditure will be around however \$45k and will be treated as Operating Expense rather than as CAPEX set out in the budget submission.
- Licensing for software such as Office 2016, VMware fusion upgrade, and Visio were budgeted at \$69k, anticipated capital expenditure to be \$19k due to changes in licensing requirements.
- New Routers & Switches replacement budget of \$63k will not be utilised
- Customer Billing Development, originally budgeted \$30k capex, will be delivered through operating expenditure.

## 4 Activity Reporting

### 4.1 Expense by Activity Code

APNIC's expenditure has been aligned to the Activity Plan, allowing financial analysis against core service delivery activities. .

Global Cooperation activities have gone above budget primarily due to the heavy out of the region travel schedule during the first half of this year. Some of these activities (ICANN, IETF) will be held in the AP region and we expect to stay close to budget by the end of this year.

| EXPENSES (AUD)                      | YTD Actual Aug 2016 | YTD Budget Aug 2016 | Variance \$     | Variance % |
|-------------------------------------|---------------------|---------------------|-----------------|------------|
| Facilities                          | 333,486             | 275,119             | 58,367          | 21%        |
| Finance & Administration            | 849,845             | 966,697             | -116,852        | -12%       |
| Human Resource Management           | 754,276             | 742,956             | 11,320          | 2%         |
| Legal & Governance                  | 456,999             | 476,725             | -19,726         | -4%        |
| <b>Total - Corporate</b>            | <b>2,394,606</b>    | <b>2,461,497</b>    | <b>-66,891</b>  | <b>-3%</b> |
| Global Research                     | 279,193             | 278,448             | 745             | 0%         |
| Global Technical Community          | 582,483             | 553,242             | 29,241          | 5%         |
| Inter-governmental Outreach         | 217,282             | 183,873             | 33,409          | 18%        |
| <b>Total - Global Cooperation</b>   | <b>1,078,959</b>    | <b>1,015,563</b>    | <b>63,396</b>   | <b>6%</b>  |
| APNIC Conferences                   | 699,923             | 719,141             | -19,218         | -3%        |
| APNIC Foundation                    | 134,161             | 119,028             | 15,133          | 13%        |
| Community Engagement                | 764,408             | 734,809             | 29,599          | 4%         |
| Regional Technical Development      | 579,052             | 595,021             | -15,969         | -3%        |
| <b>Total - Regional Development</b> | <b>2,177,544</b>    | <b>2,167,999</b>    | <b>9,545</b>    | <b>0%</b>  |
| Registration Services               | 928,746             | 1,054,306           | -125,560        | -12%       |
| Customer Service                    | 2,163,517           | 1,930,176           | 233,341         | 12%        |
| Member Training                     | 653,742             | 738,305             | -84,563         | -11%       |
| Technical Infrastructure            | 1,830,576           | 2,239,196           | -408,620        | -18%       |
| <b>Total - Serving Members</b>      | <b>5,576,581</b>    | <b>5,961,983</b>    | <b>-385,402</b> | <b>-6%</b> |
| <b>Total - Expenses</b>             | <b>11,227,690</b>   | <b>11,607,042</b>   | <b>-379,352</b> | <b>-3%</b> |

Table 6. Expense by Activity Code

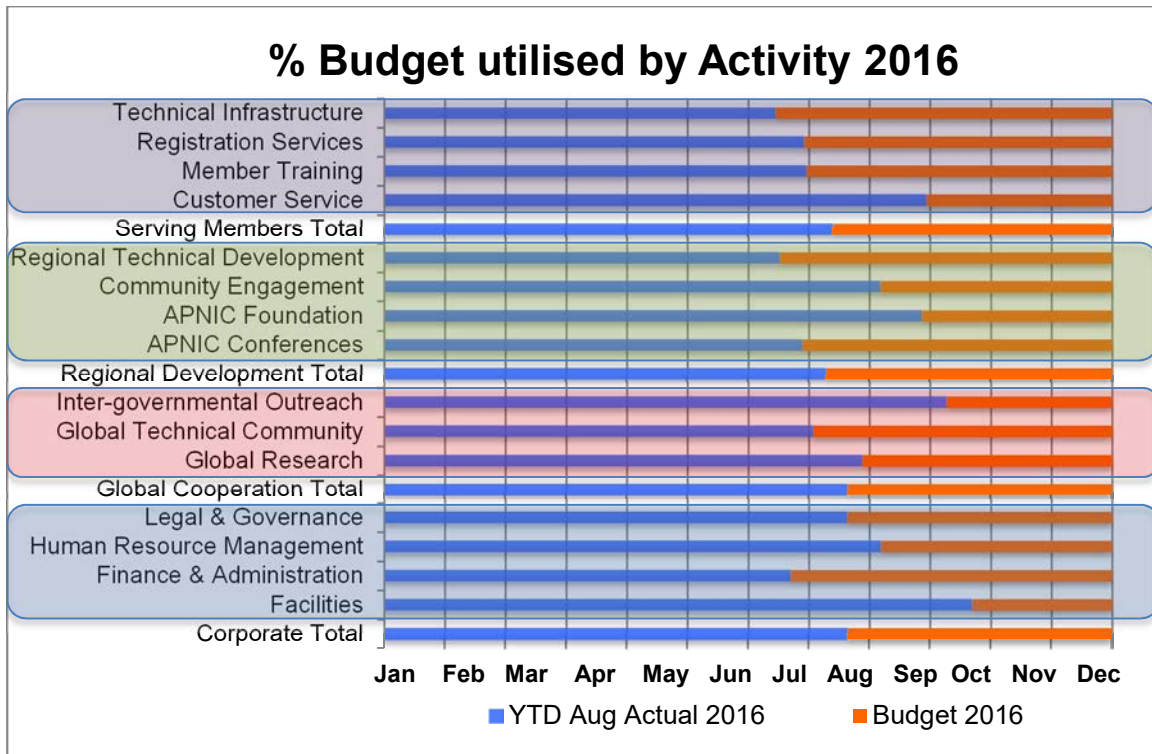


Figure 1. Expenses by Activity Code

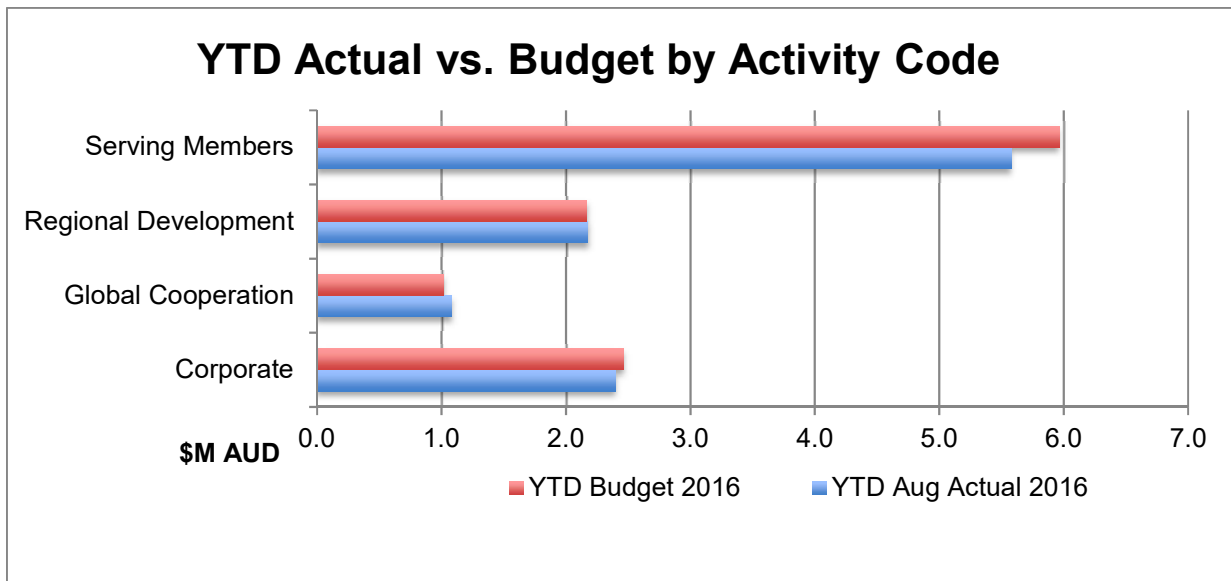


Figure 2. YTD Actual vs. Budget by Activity



## 4.2 Capital Expenditure by Activity Code

| CAPITAL (AUD)                       | YTD Actual Aug 2016 | YTD Budget Aug 2016 | Variance \$     | Variance %  |
|-------------------------------------|---------------------|---------------------|-----------------|-------------|
| Facilities                          | 8,726               | 44,512              | -35,786         | -80%        |
| Finance & Administration            | 5,598               | 6,336               | -738            | -12%        |
| Human Resource Management           | 3,162               | 2,336               | 826             | 35%         |
| Legal & Governance                  | 3,800               | 2,336               | 1,464           | 63%         |
| <b>Total - Corporate</b>            | <b>21,286</b>       | <b>55,520</b>       | <b>-34,234</b>  | <b>-62%</b> |
| Global Research                     | 25,920              | 46,664              | -20,744         | -44%        |
| Global Technical Community          | 4,460               | 2,664               | 1,796           | 67%         |
| Inter-governmental Outreach         | 2,490               | 2,336               | 154             | 7%          |
| <b>Total - Global Cooperation</b>   | <b>32,870</b>       | <b>51,664</b>       | <b>-18,794</b>  | <b>-36%</b> |
| APNIC Conferences                   | 6,535               | 15,336              | -8,801          | -57%        |
| Regional Technical Development      | 9,920               | 120,000             | -110,080        | -92%        |
| <b>Total - Regional Development</b> | <b>16,455</b>       | <b>135,336</b>      | <b>-118,881</b> | <b>-88%</b> |
| Registration Services               | 6,072               | 4,000               | 2,072           | 52%         |
| Customer Service                    | 26,466              | 165,208             | -138,742        | -84%        |
| Member Training                     | 137,001             | 49,336              | 87,665          | 178%        |
| Technical Infrastructure            | 342,116             | 772,720             | -430,604        | -56%        |
| <b>Total - Serving Members</b>      | <b>511,654</b>      | <b>991,264</b>      | <b>-479,610</b> | <b>-48%</b> |
| <b>Total - Capital Expenditure</b>  | <b>582,265</b>      | <b>1,233,784</b>    | <b>-651,519</b> | <b>-53%</b> |

Table 7. Capital Expenditure by Activity Code

## 5 APNIC Reserve

### 5.1 Cash Flow Statement

This report shows the cash flow status for the year as at the end of August.

| Accounts                                  | YTD August 2016   |
|---|-------------------|
| <b>Operating Activities</b>               |                   |
| Net Income                                | 2,245,895         |
| <b>Adjustments to Profit/(Loss)</b>       |                   |
| Accounts Receivable                       | -188,810          |
| Other Current Asset                       | -290,319          |
| Accounts Payable                          | 102,610           |
| Sales Tax Payable                         | 3,132             |
| Other Current Liabilities                 | 872,355           |
| <b>Total Adjustments to Profit/(Loss)</b> | <b>498,969</b>    |
| <b>Total Operating Activities</b>         | <b>2,744,865</b>  |
| <b>Investing Activities</b>               |                   |
| Fixed Asset                               | -56,622           |
| Other Asset                               | -2,103,785        |
| <b>Total Investing Activities</b>         | <b>-2,160,407</b> |
| <b>Financing Activities</b>               |                   |
| Long Term Liabilities                     | 21,827            |
| Other Equity                              | 606,659           |
| <b>Total Financing Activities</b>         | <b>628,486</b>    |
| <b>Net Change in Cash for Period</b>      | <b>1,212,944</b>  |
| <b>Cash at Beginning of Period</b>        | <b>6,286,996</b>  |
| <b>Cash at End of Period</b>              | <b>7,499,940</b>  |

Table 8. Cash Flow Statement

## 5.2 Capital Reserve

The Reserve is diversified between Cash Investments, Investment Portfolio, and Property (APNIC Office). At the end of August, APNIC maintained \$7.5M in cash reserves, \$21M has been invested in the investment portfolio and \$6.3M invested in Property. Figure 3 below tracks the value and the allocation of these reserves over time and also tracks the operating expenses for each year for comparison:

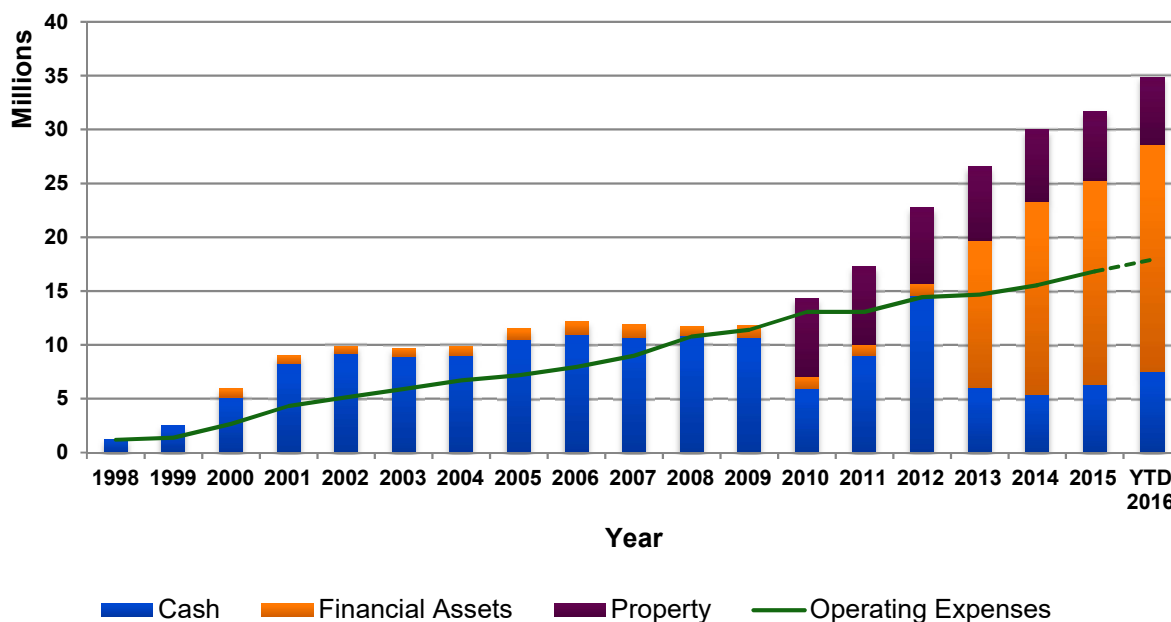


Figure 3. APNIC Reserves

## 5.3 Investment Policy

The amount of \$21M comprising invested funds, capital growth and reinvested returns in the Credit Suisse investment management account at the end of August. Additional \$500k of surplus cash from the operating account was transferred to the investment portfolio in August. Please refer to the attached investment report outlining the portfolio.

## 5.4 APNIC's Equity and Reserves

By comparing the Total Equity (including retained earnings and unrealised capital gains) to the Daily Operating Costs, the number of month's coverage of operational expenses is set out below:

|   | 31/08/2016   | 2015         | 2014         | 2013         |
|---|--------------|--------------|--------------|--------------|
| Total Equity  | \$26,172,014 | \$23,319,460 | \$21,388,497 | \$17,826,296 |
| % Equity covered by Cash/ Cash Equivalents            | 109.1%       | 108.2%       | 109.1%       | 110.7%       |
| Actual Daily Operating Expenses                       | \$48,953     | \$46,077     | \$42,558     | \$39,959     |
| <b>Number of Months of expenses covered by Equity</b> | <b>17.53</b> | <b>16.64</b> | <b>16.52</b> | <b>14.67</b> |

Table 9. Equity and Reserves

## 6 Membership

### 6.1 Membership Statistics

As at the end of August 2016, APNIC had a total of 5,809 Members serving 54 economies.

### 6.2 Membership by Category

The table below shows the monthly changes in membership. Majority of Members remain in the Very Small and Small membership tiers.

| Membership   | Total Jul-16 | New Aug-16 | Reactivate Aug-16 | (Closed) Aug-16 | Size Change Aug-16 | Total YTD Aug-16 | % Total     |
|--------------|--------------|------------|-------------------|-----------------|--------------------|------------------|-------------|
| Extra Large  | 22           | 0          | 0                 | 0               | 0                  | 22               | 0%          |
| Very Large   | 45           | 0          | 0                 | 0               | 0                  | 45               | 1%          |
| Large        | 135          | 0          | 0                 | 0               | 0                  | 135              | 2%          |
| Medium       | 434          | 0          | 0                 | -3              | 5                  | 436              | 8%          |
| Small        | 2,500        | 30         | 3                 | -12             | 16                 | 2,537            | 44%         |
| Very Small   | 2,490        | 74         | 1                 | -19             | -25                | 2,521            | 43%         |
| Associate    | 110          | 0          | 1                 | -2              | 4                  | 113              | 2%          |
| <b>TOTAL</b> | <b>5,736</b> | <b>104</b> | <b>5</b>          | <b>-36</b>      | <b>0</b>           | <b>5,809</b>     | <b>100%</b> |

Table 10. Membership by Category

### 6.3 Membership by Economy

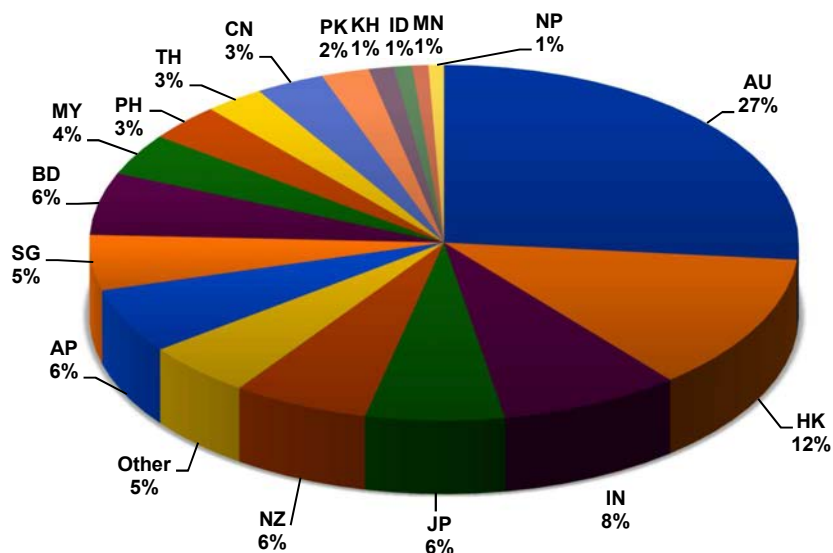


Figure 4. Membership by Economy

### 6.4 Membership Growth

APNIC membership monthly movements are illustrated at Figure 5 below. Membership growth budgeted for 2016 has been incorporated in this graph to track monthly growth.

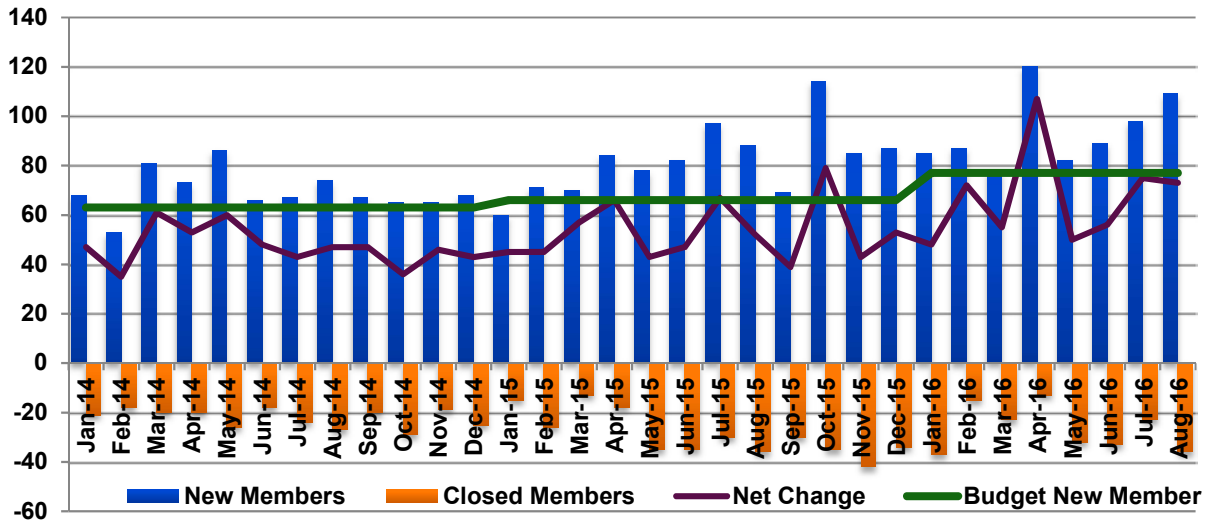


Figure 5. Membership Growth Analysis

Figure 6 below illustrates Membership growth by membership tier:

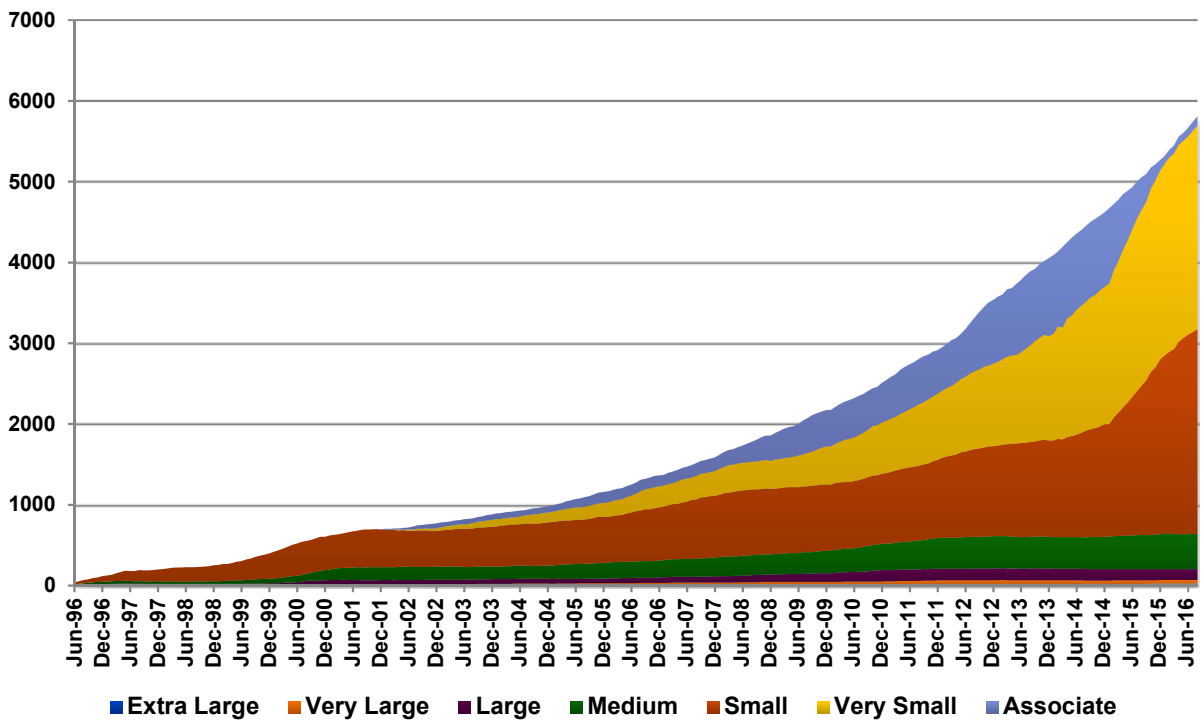


Figure 6. Total Membership

### 6.5 Year-to-Date Membership Movement by Economy

Figure 7 below shows new and closed membership movement by economy as at end of August 2016.

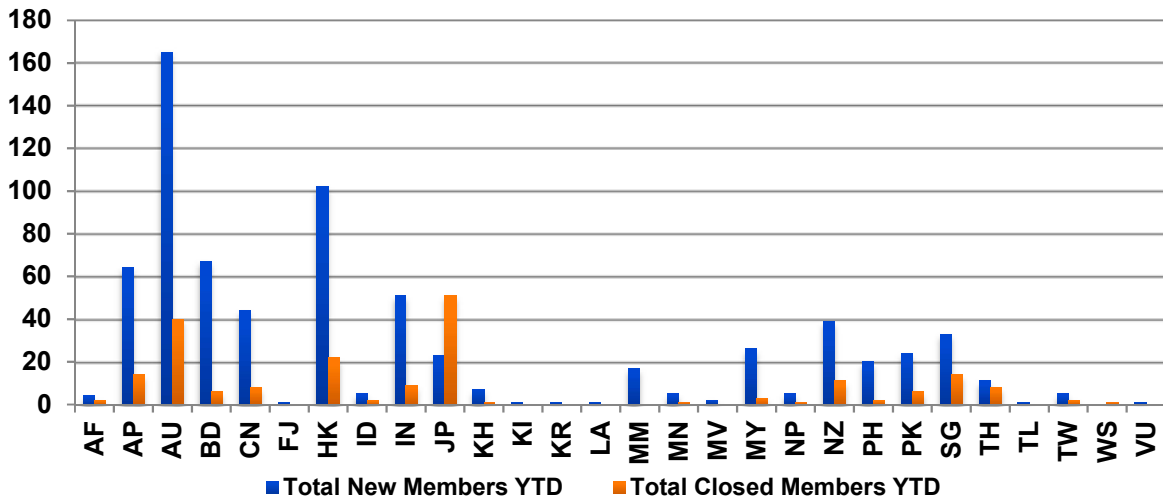


Figure 7. New and Closed Members Analysis

Figure 8 below provides an analysis of 210 Membership closures as at the end of August. 59% of the closures relate to accounts closed due to the failure to establish contact or the business is no longer operating and resource holdings are returned to APNIC.

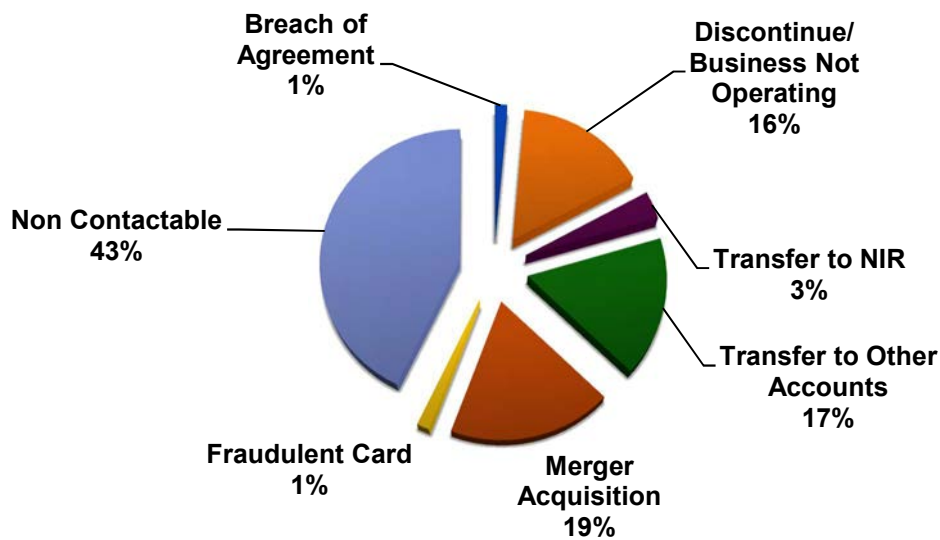


Figure 8. Closure Analysis

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SOUTH BRISBANE, QLD 4101  
AUSTRALIA

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Private Banking

## Investment Report 1.8.2016 – 31.8.2016

### APNIC PTY LTD

Portfolio Group: 3000039

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Private Banking

**Investment Report 1.8.2016 – 31.8.2016**

**Portfolio Group**           **3000039**  
In the Name of           APNIC PTY LTD  
  
Produced on                1.9.2016  
Reporting Currency       AUD  
  
Relationship Manager     Andrew Page  
Phone                      +61 2 8205 4416

APNIC PTY LTD  
PO BOX 3646  
SOUTH BRISBANE, QLD 4101  
AUSTRALIA

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**Scope of Analysis**  
 as of 31.8.2016

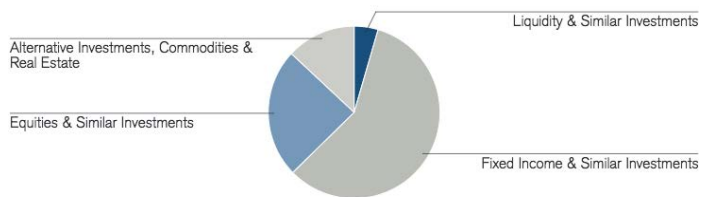
| Components                          | Portfolio  | Asset Value in AUD | Discretionary Mandate | Opened     | Closed |
|-------------------------------------|------------|--------------------|-----------------------|------------|--------|
| Portfolio Group: 3000039            |            |                    |                       |            |        |
| <b>Investment related Positions</b> |            |                    |                       |            |        |
| AUD Portfolio                       | 3000039-10 | 0                  |                       | 16.08.2013 |        |
| AUD Portfolio                       | 3000039-70 | 21,055,586         | Yes                   | 16.08.2013 |        |
| <b>Total Investments</b>            |            | <b>21,055,586</b>  |                       |            |        |
| <b>Total Wealth</b>                 |            | <b>21,055,586</b>  |                       |            |        |

# 1. Overview

## 1.1. Asset Allocation

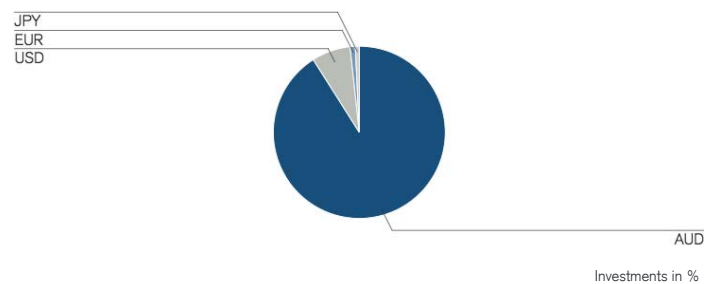
**Asset Allocation by Asset Category**  
 Period 1.8.2016 - 31.8.2016

|  | Beginning of Period in AUD | Change   | End of Period in AUD | End of Period Proportion |
|--|----------------------------|----------|----------------------|--------------------------|
| ■ Liquidity & Similar Investments                    | 773,959                    | 175,170  | 949,129              | 4.51%                    |
| ■ Fixed Income & Similar Investments                 | 11,908,884                 | 342,132  | 12,251,016           | 58.18%                   |
| ■ Equities & Similar Investments                     | 5,241,052                  | -134,882 | 5,106,169            | 24.25%                   |
| ■ Alternative Investments, Commodities & Real Estate | 2,616,262                  | 133,009  | 2,749,271            | 13.06%                   |
| <b>Total Investments</b>                             | <b>20,540,157</b>          |          | <b>21,055,586</b>    | <b>100.00%</b>           |



**Asset Allocation by Currency**  
 Period 1.8.2016 - 31.8.2016

|                           | Beginning of Period in AUD | Change  | End of Period in AUD | End of Period Proportion |
|---------------------------|----------------------------|---------|----------------------|--------------------------|
| ■ AUD - Australian Dollar | 18,679,200                 | 479,599 | 19,158,799           | 90.99%                   |
| ■ USD - US Dollar         | 1,525,472                  | 10,381  | 1,535,853            | 7.29%                    |
| ■ EUR - Euro              | 191,630                    | 12,993  | 204,622              | 0.97%                    |
| ■ JPY - Japan Yen         | 143,855                    | 12,457  | 156,312              | 0.74%                    |
| ■ GBP - Pound Sterling    | 1                          | 0       | 1                    |                          |
| <b>Total Investments</b>  | <b>20,540,157</b>          |         | <b>21,055,586</b>    | <b>100.00%</b>           |



## 1.2. Income and Activity

### Income Summary

Period 1.8.2016 - 31.8.2016

|                      | Current Period<br>in AUD | Year to Date<br>in AUD |
|----------------------|--------------------------|------------------------|
| Cash Dividend        | 9,461                    | 546,224                |
| Coupon Received/Paid | 0                        | 0                      |
| Interest Earned/Paid | 1,007                    | 8,291                  |
| <b>Net Income</b>    | <b>10,467</b>            | <b>554,515</b>         |

### Activity Summary

Period 1.8.2016 - 31.8.2016

|                          | Current Period<br>in AUD | Year to Date<br>in AUD |
|--------------------------|--------------------------|------------------------|
| Asset Inflows            | 1,000,000                | 2,000,000              |
| Asset Outflows           | -500,000                 | -1,000,000             |
| <b>Total Asset Flows</b> | <b>500,000</b>           | <b>1,000,000</b>       |

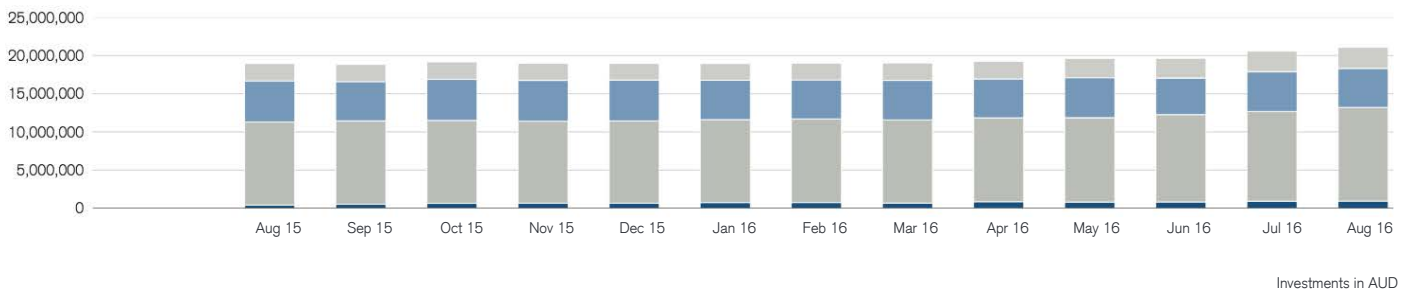
## 2. Analyses

### 2.1. Asset Allocation

#### Asset Allocation by Asset Category Details

Period 1.8.2015 - 31.8.2016

|  | Aug 15            | Sep 15            | Oct 15            | Nov 15            | Dec 15            | Jan 16            | Feb 16            | Mar 16            | Apr 16            | May 16            | Jun 16            | Jul 16            | Aug 16            |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| ■ Liquidity & Similar Investments                    | 413,355           | 525,677           | 647,543           | 660,367           | 655,831           | 745,290           | 750,797           | 671,082           | 855,502           | 810,646           | 827,295           | 923,201           | 949,129           |
| ■ Fixed Income & Similar Investments                 | 10,889,211        | 10,919,396        | 10,851,169        | 10,764,009        | 10,780,398        | 10,854,509        | 10,955,451        | 10,901,405        | 10,994,038        | 11,047,141        | 11,441,527        | 11,758,621        | 12,251,016        |
| ■ Equities & Similar Investments                     | 5,375,333         | 5,135,023         | 5,395,208         | 5,343,270         | 5,357,884         | 5,177,033         | 5,098,267         | 5,167,214         | 5,077,419         | 5,241,443         | 4,775,282         | 5,214,932         | 5,106,169         |
| ■ Alternative Investments, Commodities & Real Estate | 2,261,643         | 2,237,710         | 2,257,831         | 2,206,384         | 2,157,688         | 2,164,055         | 2,192,625         | 2,276,812         | 2,302,148         | 2,512,059         | 2,587,753         | 2,660,006         | 2,749,271         |
| <b>Total Ending Market Value in AUD</b>              | <b>18,939,542</b> | <b>18,817,806</b> | <b>19,151,752</b> | <b>18,974,030</b> | <b>18,951,801</b> | <b>18,940,887</b> | <b>18,997,140</b> | <b>19,016,512</b> | <b>19,229,107</b> | <b>19,611,289</b> | <b>19,631,856</b> | <b>20,556,761</b> | <b>21,055,586</b> |



### 3. Positions

#### 3.1. Investment Related Positions as of 31.8.2016

| Number/ Nominal                            | Description | Identification<br>ISIN<br>Valoren Number<br>Ticker           | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|--|-------------|--|--|--|--|--|---|
| <b>Liquidity &amp; Similar Investments</b> |             |  |  |  |  |  |   |
| Accounts                                   |             |  |  |  |  |  |   |
| AUD  | 239,451.73  | Current Account -20300003970945<br>AUD Portfolio: 3000039-70 | 1.0000                                   |  | 239,452<br>1.14%   |  |   |
| EUR  | 258.61      | Current Account -20300003970056<br>AUD Portfolio: 3000039-70 | 1.0000<br>1.4787 EUR/AUD                 |  | 383  | 1<br>1   | 0.27%<br>0.27%                                |
| GBP  | 0.53        | Current Account -20300003970089<br>AUD Portfolio: 3000039-70 | 1.0000<br>1.8679 GBP/AUD                 |  | 1  | 0<br>0   | -7.07%<br>-7.07%                              |
| JPY  | 160,512     | Current Account -20300003970335<br>AUD Portfolio: 3000039-70 | 1.0000<br>77.3112 AUD/JPY                |  | 2,071<br>0.01%   | -6<br>-6   | -0.27%<br>-0.27%                              |
| USD  | 155,878.25  | Current Account -20300003970780<br>AUD Portfolio: 3000039-70 | 1.0000<br>0.7577 AUD/USD                 |  | 207,199<br>0.98%   | 1,466<br>1,466   | 0.71%<br>0.71%                                |
| <b>Total Accounts</b>                      |             |  |  |  | <b>449,106<br/>2.13%</b>                                     |  |   |



| Number/ Nominal                                  | Description  | Identification<br>ISIN<br>Valoren Number<br>Ticker  | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|--|--------------|---|--|--|--|--|---|
| <b>Call &amp; Time Deposits</b>                  |              |   |  |  |  |  |   |
| AUD  | 500,000      | 1.68% Deposit - Fixed Term (MM1624301033)<br>30.08.2016 - 14.09.2016<br>Total interest at maturity: AUD 345.21<br>AUD Portfolio: 3000039-70 | 1.0000                                   |  | 500,023<br>23<br>2.37%                                       |  |   |
| <b>Total Call &amp; Time Deposits</b>            |              |   |  |  | 500,023<br>2.37%   |  |   |
| <b>Total Liquidity &amp; Similar Investments</b> |              |   |  |  | <b>949,129</b><br><b>4.51%</b>                               |  |   |
| <b>Fixed Income &amp; Similar Investments</b>    |              |   |  |  |  |  |   |
| Fixed Income & Similar Investments AUD           |              |   |  |  |  |  |   |
| AUD  | 3,908,004.12 | UNITS BLACKROCK INDEXED AUSTRALIAN<br>BOND FUND<br>AUD Portfolio: 3000039-70  | AU60BGL01056<br>2244170                  | 1.0276                                   | 1.0736 BID<br>30.08.2016                                     | 4,195,438<br>179,717<br>19.93%   | 4.48%<br>4.48%                                |
| AUD  | 2,192,621.14 | UNITS ABERDEEN AUSTRALIAN FIXED<br>INCOME FUND<br>AUD Portfolio: 3000039-70   | AU60CRS00041<br>1739745                  | 1.1448                                   | 1.1802 NAV<br>30.08.2016                                     | 2,587,731<br>77,706<br>12.29%  | 3.10%<br>3.10%                                |
| AUD  | 370.461      | UNITS PIMCO GLOBAL CREDIT FUND<br>AUD Portfolio: 3000039-70   | AU60ETL01145<br>3432906                  | 1,005.5140                               | 995.4980 NAV<br>30.08.2016                                   | 368,793<br>-3,711<br>1.75%   | -1.00%<br>-1.00%                              |
| AUD  | 1,485.566    | UNITS PIMCO AUSTRALIAN BOND FUND<br>CLASS -A-<br>AUD Portfolio: 3000039-70  | AU60ETL01152<br>3432899                  | 1,112.0561                               | 1,129.1406 NAV<br>30.08.2016                                 | 1,677,413<br>25,380<br>7.97%   | 1.54%<br>1.54%                                |

| Number/ Nominal                                     | Description  | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|---|--|--|--|--|--|--|---|
| AUD 2,938,291.92                                    | UNITS VANGUARD AUSTRALIAN FIXED INTEREST INDEX FUND<br>AUD Portfolio: 3000039-70 | AU60VAN00014<br>1653500                            | 1.1300                                   | 1.1645 NAV<br>30.08.2016                 | 3,421,641<br>16.25%  | 101,435<br>101,435   | 3.06%<br>3.06%                                |
| <b>Total Fixed Income &amp; Similar Investments</b> |  |  |  |  | <b>12,251,016</b>  | <b>58.18%</b>  |   |
| <b>Equities &amp; Similar Investments</b>           |  |  |  |  |  |  |   |
| Equities & Similar Investments AUD                  |  |  |  |  |  |  |   |
| AUD 2,786   | SHS AGL ENERGY LTD<br>AUD Portfolio: 3000039-70                                  | AU000000AGL7<br>2449486<br>AGL.AX                  | 18.3437                                  | 18.5500 CLO<br>31.08.2016                | 51,680<br>0.25%  | 575<br>575   | 1.12%<br>1.12%                                |
| AUD 3,354   | SHS AMCOR LTD<br>AUD Portfolio: 3000039-70                                       | AU000000AMC4<br>640267<br>AMC.AX                   | 13.8474                                  | 16.0000 CLO<br>31.08.2016                | 53,664<br>0.25%  | 7,220<br>7,220   | 15.54%<br>15.54%                              |
| AUD 3,554   | SHS AUSTRALIA & NEW ZEALAND BANKING GROUP LTD<br>AUD Portfolio: 3000039-70       | AU000000ANZ3<br>640139<br>ANZ.AX                   | 31.6170                                  | 26.9000 CLO<br>31.08.2016                | 95,603<br>0.45%  | -16,764<br>-16,764   | -14.92%<br>-14.92%                            |
| AUD 4,796   | STAPLED SECURITY APA GROUP<br>AUD Portfolio: 3000039-70                          | AU000000APA1<br>1083439<br>APA.AX                  | 6.5414                                   | 9.2400 CLO<br>31.08.2016                 | 44,315<br>0.21%  | 12,942<br>12,942   | 41.25%<br>41.25%                              |
| AUD 2,017   | SHS APN OUTDOOR GROUP LTD<br>AUD Portfolio: 3000039-70                           | AU000000APO2<br>25835493<br>APO.AX                 | 7.0841                                   | 5.2500 CLO<br>31.08.2016                 | 10,589<br>0.05%  | -3,699<br>-3,699   | -25.89%<br>-25.89%                            |
| AUD 3,785   | SHS BHP BILLITON LTD<br>AUD Portfolio: 3000039-70                                | AU000000BHP4<br>640390<br>BHP.AX                   | 33.2621                                  | 20.4300 CLO<br>31.08.2016                | 77,328<br>0.37%  | -48,570<br>-48,570   | -38.58%<br>-38.58%                            |

| Number/ Nominal | Description   | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|-----------------|---|--|--|--|--|--|---|
| AUD 8,622       | SHS BORAL LTD<br>AUD Portfolio: 3000039-70                      | AU000000BLD2<br>1050991<br>BLD.AX                  | 5.7234                                   | 6.6100 CLO<br>31.08.2016                 | 56,991<br>0.27%  | 7,644<br>7,644   | 15.49%<br>15.49%                              |
| AUD 4,637       | SHS BRAMBLES LTD<br>AUD Portfolio: 3000039-70                   | AU000000BXB1<br>2373150<br>BXB.AX                  | 9.0885                                   | 12.3200 CLO<br>31.08.2016                | 57,128<br>0.27%  | 14,985<br>14,985   | 35.56%<br>35.56%                              |
| AUD 2,307       | SHS COMMONWEALTH BANK OF AUSTRALIA<br>AUD Portfolio: 3000039-70 | AU000000CBA7<br>646758<br>CBA.AX                   | 76.5902                                  | 71.8100 CLO<br>31.08.2016                | 165,666<br>0.79%   | -11,028<br>-11,028   | -6.24%<br>-6.24%                              |
| AUD 41          | SHS COCHLEAR LTD<br>AUD Portfolio: 3000039-70                   | AU000000COH5<br>102261<br>COH.AX                   | 125.7176                                 | 140.9000 CLO<br>31.08.2016               | 5,777<br>0.03%   | 622<br>622   | 12.08%<br>12.08%                              |
| AUD 1,223       | SHS CSL LTD<br>AUD Portfolio: 3000039-70                        | AU000000CSL8<br>241548<br>CSL.AX                   | 70.9068                                  | 108.1000 CLO<br>31.08.2016               | 132,206<br>0.63%   | 45,487<br>45,487   | 52.45%<br>52.45%                              |
| AUD 461         | SHS CALTEX AUSTRALIA LTD<br>AUD Portfolio: 3000039-70           | AU000000CTX1<br>640410<br>CTX.AX                   | 33.0933                                  | 33.9500 CLO<br>31.08.2016                | 15,651<br>0.07%  | 395<br>395   | 2.59%<br>2.59%                                |
| AUD 7,873       | STAPLED SECURITY GOODMAN GROUP<br>AUD Portfolio: 3000039-70     | AU000000GMG2<br>18079202<br>GMG.AX                 | 6.7525                                   | 7.5900 CLO<br>31.08.2016                 | 59,756<br>0.28%  | 6,594<br>6,594   | 12.40%<br>12.40%                              |
| AUD 1,226       | STAPLED SECURITIES LENDLEASE GROUP<br>AUD Portfolio: 3000039-70 | AU000000LLC3<br>641373<br>LLC.AX                   | 15.2714                                  | 13.8200 CLO<br>31.08.2016                | 16,943<br>0.08%  | -1,779<br>-1,779   | -9.50%<br>-9.50%                              |

| Number/ Nominal | Description   | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|-----------------|---|--|--|--|--|--|---|
| AUD 916         | SHS MAGELLAN FINANCIAL GROUP LTD<br>AUD Portfolio: 3000039-70 | AU000000MFG4<br>2807450<br>MFG.AX                  | 24.5940                                  | 23.6200 CLO<br>31.08.2016                | 21,636<br>0.10%  | -892<br>-892   | -3.96%<br>-3.96%                              |
| AUD 143,216     | STAPLED SECURITY MIRVAC GROUP<br>AUD Portfolio: 3000039-70    | AU000000MGR9<br>821911<br>MGR.AX                   | 1.7919                                   | 2.3200 CLO<br>31.08.2016                 | 332,261<br>1.58%   | 75,632<br>75,632   | 29.47%<br>29.47%                              |
| AUD 9,880       | SHS MEDIBANK PRIVATE LTD<br>AUD Portfolio: 3000039-70         | AU000000MPL3<br>25835091<br>MPL.AX                 | 2.3144                                   | 2.6900 CLO<br>31.08.2016                 | 26,577<br>0.13%  | 3,710<br>3,710   | 16.23%<br>16.23%                              |
| AUD 1,015       | SHS MACQUARIE GROUP LTD<br>AUD Portfolio: 3000039-70          | AU000000MQG1<br>3422370<br>MQG.AX                  | 56.6403                                  | 80.7000 CLO<br>31.08.2016                | 81,911<br>0.39%  | 24,421<br>24,421   | 42.48%<br>42.48%                              |
| AUD 11,330      | SHS MAYNE PHARMA GROUP LTD<br>AUD Portfolio: 3000039-70       | AU000000MYX0<br>12045052<br>MYX.AX                 | 1.9009                                   | 1.8500 CLO<br>31.08.2016                 | 20,961<br>0.10%  | -577<br>-577   | -2.68%<br>-2.68%                              |
| AUD 3,557       | SHS NATIONAL AUSTRALIA BANK LTD<br>AUD Portfolio: 3000039-70  | AU000000NAB4<br>641643<br>NAB.AX                   | 33.1387                                  | 27.3400 CLO<br>31.08.2016                | 97,248<br>0.46%  | -20,626<br>-20,626   | -17.50%<br>-17.50%                            |
| AUD 1,408       | SHS NEWCREST MINING LTD<br>AUD Portfolio: 3000039-70          | AU000000NCM7<br>650853<br>NCM.AX                   | 24.5387                                  | 22.1900 CLO<br>31.08.2016                | 31,244<br>0.15%  | -3,307<br>-3,307   | -9.57%<br>-9.57%                              |
| AUD 20,206      | SHS ORORA LTD<br>AUD Portfolio: 3000039-70                    | AU000000ORA8<br>22750502<br>ORA.AX                 | 2.3282                                   | 3.1000 CLO<br>31.08.2016                 | 62,639<br>0.30%  | 15,594<br>15,594   | 33.15%<br>33.15%                              |

| Number/ Nominal           | Description  | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|---------------------------|--|--|--|--|--|--|---|
| AUD<br>305,614<br>293,027 | STAPLED SECURITY PROPERTYLINK GROUP<br>of which is pending settlement<br>AUD Portfolio: 3000039-70         | AU000000PLG5<br>33393604<br>PLG.AX                 | 0.8233                                   | 0.8100 CLO<br>31.08.2016                 | 247,547<br>1.18%   | -4,054<br>-4,054   | -1.61%<br>-1.61%                              |
| AUD<br>893                | SHS RAMSAY HEALTH CARE LTD<br>AUD Portfolio: 3000039-70  | AU000000RHC8<br>646740<br>RHC.AX                   | 42.4378                                  | 82.9700 CLO<br>31.08.2016                | 74,092<br>0.35%  | 36,195<br>36,195   | 95.51%<br>95.51%                              |
| AUD<br>1,112              | SHS RIO TINTO LTD<br>AUD Portfolio: 3000039-70   | AU000000RIO1<br>603520<br>RIO.AX                   | 62.5745                                  | 47.6000 CLO<br>31.08.2016                | 52,931<br>0.25%  | -16,652<br>-16,652   | -23.93%<br>-23.93%                            |
| AUD<br>82,047             | STAPLED SECURITY SCENTRE GROUP<br>AUD Portfolio: 3000039-70  | AU000000SCG8<br>23931192<br>SCG.AX                 | 3.6180                                   | 4.9700 CLO<br>31.08.2016                 | 407,774<br>1.94%   | 110,929<br>110,929   | 37.37%<br>37.37%                              |
| AUD<br>7,899              | STAPLED SECURITY STOCKLAND<br>AUD Portfolio: 3000039-70  | AU000000SGP0<br>642077<br>SGP.AX                   | 4.5725                                   | 4.8500 CLO<br>31.08.2016                 | 38,310<br>0.18%  | 2,192<br>2,192   | 6.07%<br>6.07%                                |
| AUD<br>33,278             | UNITS SPDR S&P/ASX 200 LISTED PROPERTY<br>FUND EXCHANGE TRADED FUND<br>AUD Portfolio: 3000039-70           | AU000000SLF1<br>1377855<br>SLF.AX                  | 10.0474                                  | 13.8900 CLO<br>31.08.2016                | 462,231<br>2.20%   | 127,874<br>127,874   | 38.24%<br>38.24%                              |
| AUD<br>6,040              | UNITS SPDR S&P/ASX 200 FUND ETF<br>AUSTRALIAN EQUITY EXCHANGE TRADED<br>FUNDS<br>AUD Portfolio: 3000039-70 | AU000000STW9<br>1285707<br>STW.AX                  | 51.5854                                  | 51.2700 CLO<br>31.08.2016                | 309,671<br>1.47%   | -1,905<br>-1,905   | -0.61%<br>-0.61%                              |
| AUD<br>7,510              | STAPLED SECURITY SYDNEY AIRPORT<br>AUD Portfolio: 3000039-70   | AU000000SYD9<br>14298059<br>SYD.AX                 | 6.3037                                   | 7.2800 CLO<br>31.08.2016                 | 54,673<br>0.26%  | 7,332<br>7,332   | 15.49%<br>15.49%                              |

| Number/ Nominal  | Description   | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|------------------|---|--|--|--|--|--|---|
| AUD 4,336        | STAPLED SECURITY TRANSURBAN GROUP<br>AUD Portfolio: 3000039-70                                  | AU000000TCL6<br>444655<br>TCL.AX                   | 8.2371                                   | 11.4600 CLO<br>31.08.2016                | 49,691<br>0.24%  | 13,975<br>13,975   | 39.13%<br>39.13%                              |
| AUD 11,071       | SHS TELSTRA CORPORATION LTD<br>AUD Portfolio: 3000039-70  | AU000000TLS2<br>720464<br>TLS.AX                   | 5.1130                                   | 5.2600 CLO<br>31.08.2016                 | 58,233<br>0.28%  | 1,628<br>1,628   | 2.88%<br>2.88%                                |
| AUD 5,241        | SHS WESTPAC BANKING CORP<br>AUD Portfolio: 3000039-70   | AU000000WBC1<br>642372<br>WBC.AX                   | 32.8020                                  | 29.4600 CLO<br>31.08.2016                | 154,400<br>0.73%   | -17,515<br>-17,515   | -10.19%<br>-10.19%                            |
| AUD 669          | SHS WESFARMERS LTD<br>AUD Portfolio: 3000039-70   | AU000000WES1<br>642397<br>WES.AX                   | 44.6135                                  | 42.4400 CLO<br>31.08.2016                | 28,392<br>0.13%  | -1,454<br>-1,454   | -4.87%<br>-4.87%                              |
| AUD 799          | SHS WOOLWORTHS LTD<br>AUD Portfolio: 3000039-70   | AU000000WOW2<br>81350<br>WOW.AX                    | 34.7890                                  | 23.7100 CLO<br>31.08.2016                | 18,944<br>0.09%  | -8,852<br>-8,852   | -31.85%<br>-31.85%                            |
| AUD 713          | SHS WOODSIDE PETROLEUM LTD<br>AUD Portfolio: 3000039-70   | AU000000WPL2<br>642429<br>WPL.AX                   | 40.3070                                  | 28.6300 CLO<br>31.08.2016                | 20,413<br>0.10%  | -8,326<br>-8,326   | -28.97%<br>-28.97%                            |
| AUD 31,907.82630 | UNITS ABERDEEN EMERGING<br>OPPORTUNITIES FUND<br>AUD Portfolio: 3000039-70                      | AU60ETL00329<br>2220820                            | 2.1284                                   | 2.3049 NAV<br>30.08.2016                 | 73,544<br>0.35%  | 5,632<br>5,632   | 8.29%<br>8.29%                                |
| AUD 28,550.3753  | UNITS IRONBARK KARARA AUSTRALIAN<br>SMALL COMPANIES FUND CLASS -A-<br>AUD Portfolio: 3000039-70 | AU60PAT00021<br>2879000                            | 2.9327                                   | 3.5648 BID<br>30.08.2016                 | 101,776<br>0.48%   | 18,046<br>18,046   | 21.55%<br>21.55%                              |

| Number/ Nominal                          | Description  | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|--|--|--|--|--|--|--|---|
| AUD                                      | 6,498 SHS OIL SEARCH LTD<br>AUD Portfolio: 3000039-70  | PG0008579883<br>809900<br>OSH.AX                   | 7.9013                                   | 6.7200 CLO<br>31.08.2016                 | 43,667<br>0.21%  | -7,676<br>-7,676   | -14.95%<br>-14.95%                            |
| Total Equities & Similar Investments AUD |  |  |  |  | 3,714,063<br>17.64%  |  |   |
| Equities & Similar Investments EUR       |  |  |  |  |  |  |   |
| EUR                                      | 1,121 SHS ISHARES II PLC - ISHARES MSCI EUROPE<br>UCITS ETF (DIST) EXCHANGE TRADED FUND<br>EUR<br>AUD Portfolio: 3000039-70  | IE00B1YZSC51<br>3246398<br>IQQY.DE                 | 20.6921<br>1.5209 EUR/AUD                | 21.3900 CLO<br>31.08.2016                | 35,553<br>0.17%  | 274<br>1,160<br>-886   | 0.78%<br>3.37%<br>-2.60%                      |
| EUR                                      | 8,103 ACCUM.PTG.SHS WELLINGTON<br>MANAGEMENT FUNDS (IRELAND) PLC -<br>WELLINGTON STRATEGIC EUROPEAN EQUITY<br>FUND CLASS -N- UNHEDGED EUR<br>AUD Portfolio: 3000039-70 | IE00B9DPD161<br>20938626                           | 13.4948<br>1.4589 EUR/AUD                | 14.0400 NAV<br>30.08.2016                | 168,686<br>0.80%   | 9,158<br>6,551<br>2,608  | 5.74%<br>4.04%<br>1.70%                       |
| Total Equities & Similar Investments EUR |  |  |  |  | 204,239<br>0.97%   |  |   |
| Equities & Similar Investments JPY       |  |  |  |  |  |  |   |
| JPY                                      | 696 UNITS NIKKEI 225 EXCHANGE TRADED FUND<br>AUD Portfolio: 3000039-70   | JP3027650005<br>1264151<br>1321.T                  | 17,108.6796<br>89.5883 AUD/JPY           | 17,180.0000 CLO<br>31.08.2016            | 154,241<br>0.73%   | 21,326<br>640<br>20,686  | 16.04%<br>0.42%<br>15.63%                     |
| Total Equities & Similar Investments JPY |  |  |  |  | 154,241<br>0.73%   |  |   |

| Number/ Nominal                                 | Description | Identification<br>ISIN<br>Valoren Number<br>Ticker   | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|---|-------------|--|--|--|--|--|---|
| Equities & Similar Investments USD              |             |  |  |  |  |  |   |
| USD   | 369         | ACCUM.PTG.SHS ISHARES VII PLC - ISHARES<br>NASDAQ.100 UCITS ETF EXCHANGE TRADED<br>FUND USD<br>AUD Portfolio: 3000039-70 | IE00B53SZB19<br>10737617<br>CSNDX.S      | 185.1428<br>0.9196 AUD/USD               | 262.1500 CLO<br>31.08.2016                                   | 128,582<br>0.61 %<br>54,294<br>37,771<br>16,523                            | 73.09%<br>41.59%<br>31.49%                    |
| USD   | 317         | SHS -IP- RAM (LUX) SYSTEMATIC FUNDS<br>SICAV - EMERGING MARKETS EQUITIES<br>CAPITALISATION<br>AUD Portfolio: 3000039-70  | LU0704154458<br>14219625                 | 149.4364<br>0.7594 AUD/USD               | 158.4900 NAV<br>30.08.2016                                   | 66,783<br>0.32%<br>4,400<br>3,815<br>585                                   | 7.05%<br>6.06%<br>1.00%                       |
| USD   | 5,604       | SHS DBX ETF TRUST DEUTSCHE<br>X-TRACKERS MSCI EUROPE HEDGED EQUITY<br>ETF<br>AUD Portfolio: 3000039-70                   | US2330518539<br>22178054<br>DBEU.P       | 27.6298<br>0.7790 AUD/USD                | 25.6200 CLO<br>31.08.2016                                    | 190,845<br>0.91 %<br>-7,914<br>-14,971<br>7,057                            | -3.98%<br>-7.27%<br>3.29%                     |
| USD   | 1,115       | SHS ISHARES GLOBAL HEALTHCARE ETF<br>AUD Portfolio: 3000039-70   | US4642873255<br>1352444<br>IXJ.P         | 94.9999<br>0.8914 AUD/USD                | 101.0100 CLO<br>31.08.2016                                   | 149,707<br>0.71 %<br>30,876<br>8,908<br>21,968                             | 25.98%<br>6.33%<br>19.66%                     |
| USD   | 1,722       | TRUST UNITS SPDR S&P 500 ETF TRUST<br>AUD Portfolio: 3000039-70  | US78462F1030<br>45088<br>SPY.P           | 186.1077<br>0.8954 AUD/USD               | 217.4400 CLO<br>31.08.2016                                   | 497,709<br>2.36%<br>139,810<br>71,718<br>68,092                            | 39.06%<br>16.84%<br>22.23%                    |
| Total Equities & Similar Investments USD        |             |  |  |  |  | 1,033,626<br>4.91 %  |   |
| <b>Total Equities &amp; Similar Investments</b> |             |  |  |  |  | <b>5,106,169</b><br><b>24.25 %</b>   |   |



| Number/ Nominal   | Description | Identification<br>ISIN<br>Valoren Number<br>Ticker  | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|---|-------------|---|--|--|--|--|---|
| <b>Alternative Investments, Commodities &amp; Real Estate</b> |             |   |  |  |  |  |   |
| Hedge Funds   |             |   |  |  |  |  |   |
| AUD   | 434,171.18  | UNITS GMO SYSTEMATIC GLOBAL MACRO TRUST CLASS -B-<br>AUD Portfolio: 3000039-70  | AU60GMO00067<br>3375604                  | 1.0053                                   | 1.0866 NAV<br>26.08.2016                                     | 471,770<br>35,306<br>35,306<br>2.24%                                       | 8.09%<br>8.09%                                |
| AUD   | 305,083.52  | UNITS BLACKROCK GLOBAL ALLOCATION FUND (AUST) CLASS -D- WHOLESALE<br>AUD Portfolio: 3000039-70                              | AU60MAL00181<br>3379478                  | 1.2392                                   | 1.2765 BID<br>30.08.2016                                     | 389,432<br>11,367<br>11,367<br>1.85%                                       | 3.01%<br>3.01%                                |
| AUD   | 232,606     | RED.PTG.SHS -A1- AHL (CAYMAN) SPC AUD CLASS A EVOLUTION SEGREGATED PORTFOLIO<br>AUD Portfolio: 3000039-70                   | KYG012291145<br>22393979                 | 1.1382                                   | 1.5449 NAV<br>31.07.2016                                     | 359,353<br>94,599<br>94,599<br>1.71%                                       | 35.73%<br>35.73%                              |
| AUD   | 292,701     | RED.PTG.SHS -A- AHL DIMENSION (CAYMAN) LIMITED AUD<br>AUD Portfolio: 3000039-70   | KYG0132G1652<br>30773689                 | 1.0037                                   | 1.0122 NAV<br>31.07.2016                                     | 296,272<br>2,490<br>2,490<br>1.41%   | 0.85%<br>0.85%                                |
| Total Hedge Funds   |             |   |  |  |  | 1,516,827<br>7.20%   |   |
| Commodities & Precious Metals                                 |             |   |  |  |  |  |   |
| AUD   | 3,072       | ETC SECURITY ETFS METAL SECURITIES AUSTRALIA LTD 2003-WITHOUT FIXED MATURITY ON GOLD COMMODITY<br>AUD Portfolio: 3000039-70 | AU00000GOLD7<br>1583458<br>GOLD.AX       | 143.6744                                 | 166.4600 CLO<br>31.08.2016                                   | 511,365<br>69,997<br>69,997<br>2.43%                                       | 15.86%<br>15.86%                              |

| Number/ Nominal   | Description  | Identification<br>ISIN<br>Valoren Number<br>Ticker | Cost Valuation<br>Price<br>Exchange Rate | Current Valuation<br>Price/ Type<br>Date | Value in AUD<br>of which Accrued Interest<br>Proportion in % | Profit/ Loss<br>Unrealized in AUD<br>of which Instrument<br>of which Forex | P/L<br>Unreal. in %<br>Instr. in %<br>FX in % |
|---|--|--|--|--|--|--|---|
| USD   | 289 UBS ETC UBS AG, LONDON BRANCH 2007-<br>OPEN END ON UBS BLOOMBER CMCI<br>COMPOSITE TOTAL RETURN<br>AUD Portfolio: 3000039-70  | CH0031794263<br>3179426<br>TCMCI.S                 | 1,146.0376<br>0.9150 AUD/USD             | 768.0000 CLO<br>31.08.2016               | 295,027<br>1.40%   | -66,963<br>-145,223<br>78,260  | -18.50%<br>-32.99%<br>14.49%                  |
| Total Commodities & Precious Metals                                 |  |  |  |  | 806,392<br>3.83%   |  |   |
| Other Alternative Investments                                       |  |  |  |  |  |  |   |
| AUD   | 4,005 PTG.SHS LEGG MASON GLOBAL FUNDS PLC<br>- LEGG MASON WESTERN ASSET MACRO<br>OPPORTUNITIES BOND FUND PREMIER<br>CLASS DISTRIBUTING (S) HEDGED AUD<br>AUD Portfolio: 3000039-70 | IE00BYOZZ17<br>28828240                            | 100.8654                                 | 106.3800 NAV<br>30.08.2016               | 426,052<br>2.02%   | 22,086<br>22,086   | 5.47%<br>5.47%                                |
| Total Other Alternative Investments                                 |  |  |  |  | 426,052<br>2.02%   |  |   |
| <b>Total Alternative Investments, Commodities &amp; Real Estate</b> |  |  |  |  | <b>2,749,271</b><br><b>13.06%</b>                            |  |   |
| <b>Total Investments</b>  |  |  |  |  | <b>21,055,586</b><br><b>100.00%</b>                          |  |   |
| of which Accrued Interest   |  |  |  |  | 23   |  |   |

## 4. Appendix

### 4.1. Explanations

#### Accrued Interest

Accrued interest is not displayed for financial instruments with variable interest rate or frequency within the same interest period, except for Floating Rate Notes. For FINER Revexus, the accrued interest displayed is based on the deposit currency for reference purpose only. Entitlement to the accrued interest depends on the product features. All accrued interests are displayed in the reporting currency of the portfolio and are calculated recognizing trades end of day. The FX conversion rates (reflected below) are used to convert the amount from original currency to reporting currency. The accrued interest payable/receivable is displayed as the net amount on Current Account balances. As a result of the foregoing and other factors, the accrued interest is only an estimate and may not reflect the actual interest accrued, if any.

#### Activity Summary

The asset inflows and outflows include client-instructed transactions as well as non-investment related transactions such as loans which do not contribute to the performance of client's account. Such asset inflows and outflows do not include fees and taxes.

#### Analyses

Values displayed for the respective month labels are as of month-end dates. If the report end period is not a month-end, the report period end month label will show the values as of the report period end date.

#### Asset Classification

If an instrument is classified as 'not classifiable', the instrument is pending its proper classification. As soon this is available in the system, the instrument will reflect the correct classification.

#### Cost Valuation Exchange Rates

For the Positions section, the cost valuation exchange rate displayed is always the instrument currency against the portfolio currency.

For the Transactions section, the cost valuation exchange rate displayed is always between the instrument currency and reporting currency. For execution of FX purchase/sale transactions, the transaction valuation is based on the end of day exchange rate on the value date and the cost valuation is based on the FX contract rate.

#### Duration

Modified duration is a change in the price of a bond arising from a change in market yields. Modified duration is expressed as an approximate percentage. The investment report displays the Modified Duration method for all Fixed Income instruments.

#### Income Summary

Coupon received and coupon paid, as well as interest earned and interest paid, does not include accrued or unpaid coupon or interest.

Year to date figures include the addition of the monthly figures inclusive of any backdated income processing/ adjustments.

Figures shown can be gross or net depending on the specific country and market practice.

Non-Investment related Income is included in the Income Summary.

#### Market Value

The values stated as begin of period are asset values as of the last reported statement period. The values stated as beginning/ ending market values are asset values that are inclusive of most updated market prices and backdated transactions.

#### Non-Investment Related Positions

Non-Investment Related Positions are displayed in the Scope of Analysis and in the Non-Investment Related Positions section. However, they are not included in any other analyses.

#### Profit/ Loss Calculation

Realized and unrealized profit and loss are calculated by comparing the market or transaction value with the average cost value. For every trade date the system computes the average cost, first processing investments before disinvestments. Transaction costs are included in both realized and unrealized profit/loss calculation.

Unrealized profit/ loss displayed in the Positions section are calculated as of the reporting date.

FX conversion rates used in the computation of the unrealized profit/loss is the derived rate based on the average price as of the individual transaction date.

#### Rating

Rating refers to the rating of an investment product and is either based on information available to the Bank or is obtained from sources believed to be reliable by the Bank as of the investment report date.

**Yield**

The investment report displays Yield for all Fixed Income instruments and is displayed per market price.

**Abbreviations**

BID = Bid Price  
CLO = Closing Price  
NAV = Net Asset Value

**Rounding logic**

Values in this investment report are calculated with exact numbers, however when presenting the data, values are rounded and therefore minor rounding differences might occur.

**Large Numbers**

The figures are consolidated and shown in denominations of thousands, millions and billions where applicable. If a value is too long to be displayed in the report itself, e.g. 1,526,555,333.26 the figure is consolidated and displayed as 1,526,555.33 in thousands in the report. If the value exceeds the column limit, a further division will take place and the phrase in millions/in billions will be displayed.

**Conversion Rates as of 31.8.2016**

AUD 1.0000 = JPY 77.5233

AUD 1.0000 = USD 0.7523

EUR 1.0000 = AUD 1.4827

GBP 1.0000 = AUD 1.7420

#### 4.2. Legal Information

According to the Account Opening Terms and Conditions, this investment report shall be conclusive and binding if the Bank does not receive your objection in writing to any matters contained in this investment report within 14 days from the issue date.

Deposits with Credit Suisse are not subject to Division 2 of the Banking Act - Protection of Depositors.

If your account is booked with Credit Suisse AG, Sydney Branch or if your Relationship Manager (RM) or Investment Consultant is located in Australia, please refer to the Important Notice on Sales Disclosure to Investors for sales related information including information on monetary benefits received by the Bank where it distributes an investment product to you.

The Bank provides price indications for financial derivatives transactions, structured products and non-listed financial instruments based upon available market reference prices believed to be reliable. The Bank does not make any representation as to the accuracy or completeness of price indications for transactions nor the guarantee to buy/sell at the price indicated. The Bank does not accept liability for any loss arising from the client's use of, or reliance on, such price indications. The price indications of the initial purchase price may be different from the actual purchase price.

In the absence of reliable market reference prices, the Bank may assign a nominal value or make an appropriate comment on your investment report. As a result, the investment report may contain price indications or comments as the Bank sees appropriate in the prevailing circumstances. If you have any queries in this respect, please contact your Relationship Manager.

The Bank will, at the time of printing this investment report, use the last price indications available to it. Due to the time differences between the Asia Pacific region and markets in other regions, the price indications reflected in the Bank's investment report will not always reflect the price indications available on the last business day of the month in certain markets.

The Bank may use either an onshore or offshore CNY rate for FX conversion to reporting currency depending on the asset. Please note that there may be a differential between the onshore and offshore rate. Please refer to your RM if you need further information on the FX conversion rate applied in relation to your CNY positions.

The information in this investment report does not constitute legal or tax advice. You should consult your legal and/or tax experts if you need any such advice. The investment report does not take tax rules and regulations into consideration, and thus it cannot be used for tax reporting purposes.

This investment report is an electronically generated report and does not require a signature.

Agenda Item 11  
APNIC survey update



# 2016 APNIC Survey Report

## Draft

Asia Pacific Network Information Centre

Conducted and prepared by  
Survey Matters.



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# Introduction and Methodology

As a Member-based organisation, the APNIC Executive Council and Secretariat conducts Member research to collect feedback on its performance and gather ideas for future strategic planning.

The Asia Pacific Network Information Centre (APNIC) survey process comprises a series of focus groups across the region, interviews with interested respondents and an online survey promoted throughout the region. The survey is open for any interested Member or Stakeholder to complete. The APNIC Survey is run every two (2) years, and is in its ninth iteration.

The APNIC 2016 Survey was conducted between the 5<sup>th</sup> of July and the 5<sup>th</sup> of August 2016 to gain feedback from APNIC Members and other Stakeholders (Members of an NIR, or others involved in the Internet community) about APNIC services, the challenges they face and where APNIC can assist. The survey helps the APNIC Executive Council (EC) and Secretariat to understand the needs and wishes of the community and the results are used to guide decisions on future priorities and developments.

The 2016 Survey was conducted by Survey Matters, a research agency specialising in research for member-based organisations.

As with previous surveys, the APNIC EC commissioned and approved the survey, and engaged Survey Matters to ensure the anonymity of responses. Individual responses are not identified in this report; results are provided at an aggregate level only. **No identifying data has been provided to APNIC.**

This report provides the full feedback from the online survey, and, where appropriate, incorporates feedback from the focus group report.

## Response Rates and Sample

Following a comprehensive communication and survey distribution program, 1,365 responses were received and, after data cleansing, 1,175 responses remained. The sample size provides 95% confidence that results are within +/- 5% of presented figures.

Of the responses received, 68% were received from APNIC Members or Account Holders. The remaining 32% were from Members of NIRs within the APNIC sub-region or other stakeholders, namely consumers of APNIC services who are not formally APNIC Members.

Most responses (96%) were from the Asia Pacific economies served by APNIC. Consistent with 2014, only 4% were from outside the Asia Pacific.

A full breakdown of the survey sample can be found on Pages 13, 14 and 15, and provides response counts for each economy, alongside respondents' organisation classification and job role.

Please note that some segments contain small samples and so do not aim to be representative of the different segments. They do, however, provide directional feedback about the opinions of these respondents.



## Focus Groups

The survey instrument (online survey form) that forms the basis of this 2016 APNIC Survey Report was developed following a series of focus group consultations held in April and May 2016. Conducting focus groups prior to undertaking an online survey is best practice in research of this kind, as it gathers perspectives directly from randomly selected Members that can be tested across the wider Member and Stakeholder base through an online survey.

Face to face focus groups were conducted in twelve (12) economies, with a total of fifteen sessions conducted. One online focus group was also held, giving a total of sixteen focus groups in the thirteen locations below:

- Bangkok, Thailand
- Beijing, People's Republic of China
- Brisbane, Australia
- Colombo, Sri Lanka
- Delhi, India
- Hong Kong, SAR
- Mumbai, India
- New Zealand (online)
- Phnom Penh, Cambodia
- Seoul, South Korea
- Singapore
- Tokyo, Japan
- Yangon, Myanmar

The full Focus Group Report is available at [apnic.net/survey](http://apnic.net/survey).

Where relevant, focus group quotes and themes are referenced in this report.

## Survey Instrument (online survey form)

The quantitative survey was designed by Survey Matters. It was based on output from the focus groups, but also included consultation with the APNIC EC and Secretariat.

As in 2014, the survey instrument comprised of two (2) separate surveys; one designed for Members and Account Holders of APNIC, the other for Members of an NIR or other interested Stakeholders.

The survey had several sections:

- Participation and Service Satisfaction
- Industry Challenges
- IPv6 Readiness
- Training and Technical Assistance
- Policy Development
- Resource Allocation, External Relations & New Services
- Member Engagement

A variety of question types were used in the survey. Where questions required a degree of agreement, satisfaction or priority, a seven point scale has been used. This allows results to be compared (where applicable) between the this survey and that conducted in 2014.

The 2016 survey questionnaire was designed primarily as a quantitative instrument, but respondents were also given opportunities to provide feedback in their own words. The addition of these are used throughout this report to add depth to the statistical results.

## Communication and Distribution

The survey was designed as an anonymous online instrument, and distribution and promotion of the survey was done by the APNIC Secretariat.

Several prizes were offered throughout the communication schedule to encourage responses at different stages of the fieldwork.



## Data Cleansing

At the conclusion of the online survey, Survey Matters undertook data cleansing as per the standard protocols for market research. While 1,365 responses were received, after investigation 190 responses were removed as they were either generally unreliable or found to be multiple responses from the same respondent.

The method used to clean the data was as follows:

- Removal of records where respondents answered too quickly or selected the same rating or score regardless of the question being asked throughout the survey.
- Removal of multiple responses from the same IP address where the information regarding the prize draw was the same.
- Removal of records from the same IP address where the respondent provided data regarding relationship with APNIC and country of origin that was inconsistent with the IP address and location data.

## Survey Analysis

When analysing the survey data, we have cross tabulated the results by respondents' relationship with APNIC (Member or Stakeholder), APNIC sub-region (East Asia, Oceania, South East Asia and South Asia) and Classification of Economies (Developed, Developing and Least Developed Economies (LDEs)) based on the UN classifications referenced on Page 13, and in Appendix A.

Differences in the opinions and behaviours of respondents based on their APNIC relationship, sub-region and economy classification are presented throughout the report and highlighted where the findings are significant.

The results to survey questions are displayed as either a mean score or as a percentage of respondents who selected a particular option. Where possible and appropriate, a full frequency distribution is shown. Where comparisons to the 2014 Survey can be made, mean scores are provided. Where mean scores are given, standard deviations are also provided.

Where percentage ratings for agreement, satisfaction or importance are referred to throughout the body of the report, these have been classified as follows:

- Scores of 5, 6 or 7 out of 7 are positive
- Score of 4 out of 7 is neutral
- Scores of 1, 2 and 3 out of 7 are negative

We have also drawn on the qualitative comments and have referenced the feedback provided in the focus groups when reaching many of our conclusions. In many instances, the quantitative findings are used to validate the issues raised in the focus groups. In others, the free text or focus group feedback provides further insight into the quantitative findings.





# Executive Summary

# Overview of results

## APNIC Services

Overall, respondents are very satisfied with APNIC service provision with a majority believing APNIC provides high quality and valuable services. Specifically, 92% of respondents provided satisfaction ratings of 5 or higher for service quality and 90% for service value.

Eighty-four percent (84%) of respondents agreed that APNIC is respected in the Internet community. A large number also indicate that they speak highly of APNIC, many without being asked, a result also reflected in focus group discussions about APNIC performance.

Respondents who had used the helpdesk, technical assistance services, and those who had personally met with an APNIC representative rated APNIC services most highly. The fast and professional service provided by staff was often cited. Respondents also rate their experience of the core APNIC services of IP address applications and allocations, the Whois database, MyAPNIC and reverse DNS services as positive.

## Training

While only 22% of respondents used APNIC training over the last two years, most believe it is an important APNIC function and it was a consistent theme across most free text comments about ways in which APNIC could best serve respondents.

Demand for local language and in-country training and support is strong. More advanced training on network security and IPv6 implementation planning are the topics that respondents indicated would provide them with most benefit.

## Challenges

The 2016 survey process asked about the challenges facing respondents in the Internet community, and about how APNIC could assist with them, if at all.

The survey found that security is the biggest issue facing respondents, with 41% indicating that network security is one of the three biggest challenges in their delivery of Internet related services. DDoS attacks and other security breaches also concern respondents. A lack of IPv4 addresses remains a concern for many respondents. While a large majority of respondents think that APNIC can play a role in helping them to get more IPv4 addresses, only half of all respondents believe APNIC can help with security related issues.

Opinion is divided between respondents from developed economies and those of lesser developed economies about whether APNIC has a role to play in helping to address the challenges. For instance, respondents from LDEs and developing economies were significantly more likely to think that APNIC can help with security related issues than those from developed economies.

## IPv6 Readiness

The survey found that deployment of IPv6 is mixed across APNIC sub-regions.

Respondents suggested that support from APNIC in the form of more advanced training, case studies and knowledge sharing would most help them transition to or deploy IPv6. Many also suggested that APNIC has an important role to play in promoting the benefits of IPv6 to customers, management and decision makers.

## Collaboration, Knowledge Sharing and Training

A prominent theme in the 2016 Survey was that APNIC could help respondents by facilitating collaboration and knowledge sharing across the region. Suggestions about information sharing were most commonly provided in response to questions about how APNIC might assist respondents with their challenges and the transition to IPv6.

When asked to indicate in their own words how APNIC can assist respondents with the challenges they face in providing Internet related services, 31% of comments mentioned the provision of case studies, holding forums and seminars and sharing knowledge between member organisations across the region. With all aspects of security of concern to respondents, many felt that sharing of information, awareness programs, best practice and advanced training courses about security related issues would help.

Respondents from LDEs indicate a greater reliance on APNIC to assist them with technical knowledge, training and overall capacity building than developed or developing economies. However, there is also acknowledgement from more developed economies that case studies, sharing of information and online and open forums would be of benefit.

Similarly, when asked to indicate the most effective way APNIC might assist organisations to transition to or deploy IPv6, 49% of respondents selected 'providing case studies and best current practice about IPv6' and 31% selected 'facilitate knowledge sharing between Member organisations on IPv6 deployment experiences.'

Both the 2016 focus groups and the survey findings also suggest that decision makers within Member organisations and the wider customer base appear unaware of the benefits of transitioning to IPv6, and that APNIC could assist by promoting its adoption to these groups.

## Differences between Regions & Economies

Another important point to note from the results of the focus groups and the online survey is that of the differences that exist between respondents across sub-regions and economies.

In particular, the requirements of many of the LDEs are quite distinct from those of developing and developed economies, and LDEs rely more heavily on APNIC and others for practical assistance such as training, help desk and consultancy. In contrast, more developed economies place a greater value on APNIC online offerings – MyAPNIC, Whois etc.



## Participation & Satisfaction

- Participation is strong, with 84% of APNIC Members and 62% of Members of NIRs or other Stakeholders having used APNIC services or participated in APNIC activities over the last two years.
- Participation varies across economies and sub-regions. For example, respondents from LDEs are much more likely to have interacted with APNIC via conferences or events (39%), and attendance at training (44%) than those from developed (14% and 9% respectively) or developing economies (21% and 22% respectively).
- Satisfaction with overall APNIC service provision is very high - 92% of respondents rate service quality and 90% rate the value provided by APNIC services positively.
- The APNIC helpdesk, technical assistance services and personal meetings with an APNIC representative rate very highly. Ninety-one percent (91%) of respondents rate helpdesk assistance as positive. The fast and professional service provided by APNIC staff was often mentioned in comments provided by respondents in their own words.
- Respondents rate their experience of the core APNIC services highly. Ninety-three percent (93%) rate IP address applications positively, with 92% rating IPv4 allocations, the Whois database and reverse DNS services as positive.
- A majority (56%) of respondents believe that APNIC service delivery has improved over the last two years, with many mentions of the improved performance and functionality of online APNIC services. A further 43% believe it is unchanged. There were many comments that indicated that, while unchanged, APNIC had maintained consistently high service.
- Three quarters of respondents agreed that APNIC provides essential Internet resources that cannot be accessed elsewhere. Agreement that APNIC provides other services of value that cannot be found elsewhere in their economy, or that they use APNIC services because they are of higher quality than those they can access elsewhere, is slightly lower.

## Challenges

- Many aspects of security appear to be respondents' biggest challenge. For instance, network security was ranked the number one challenge by 16% of respondents, with 41% ranking it in the top three most important challenges their organisation faces in providing internet related services. This was followed by DDoS attacks and phishing, spam, malware and ransomware, with 33% and 25% of respondents ranking these issues within the top three challenges they face respectively.
- Obtaining more IPv4 addresses was ranked within the top three most important challenges by 22% of respondents. However, 80% of respondents indicated they thought APNIC had a role to play in helping them address the challenge.
- Sixty-one percent (61%) of respondents believe that the APNIC EC and Secretariat understand the challenges their organisation faces. Respondents in LDEs were significantly more likely to believe APNIC understands their issues (78%) than those in developed (49%) or developing (65%) economies.
- Just over half of respondents believe that APNIC can help with their biggest challenges – network security (54%) and DDoS attacks (53%).





## IPv6 Readiness

- Fifteen percent (15%) of survey respondents have IPv6 fully deployed, with 21% indicating it is deployed in their core networks. A further 29% of respondents have a deployment plan.
- Respondents in developed economies are the least likely to be ready, or have plans to deploy, IPv6. Fifty-two percent (52%) of respondents in developed economies have either deployed, or plan to deploy, IPv6 compared to 73% of respondents in LDEs.
- Lack of demand from customers and customers not being ready were the factors most often included in the top three challenges affecting full IPv6 deployment by 46% and 36% of respondents respectively.
- Twenty-seven percent (27%) of all respondents cited no obvious technical or business benefits to adopting IPv6 among their top three challenges affecting deployment, particularly in Oceania where 36% of respondents included it within the top three factors affecting their ability to deploy IPv6.
- Respondents indicated that the most effective ways in which APNIC could assist the transition to IPv6 were providing case studies and best practice (49%), more advanced IPv6 training (46%) and promotion of the benefits to customers (38%) and to management and/or decision makers (39%).

## Training

- Training is seen as an important APNIC service by 83% of respondents. Further, when asked to suggest in their own words the most effective way APNIC might help them with their challenges, 39% of respondents cited training and/or more advanced training.
- Only 20% of respondents had undertaken APNIC training in the last twelve months. Free text comments suggest that location and the costs associated with attendance are barriers to participation.
- While 81% of respondents agreed that APNIC training represents value for money, there was also support for the notion of providing subsidies where necessary. Ninety-two percent (92%) of respondents from LDEs agreed that APNIC should subsidise training
- 72% of respondents agree APNIC should seek additional external funding resources to build training and technical assistance services.
- Participants' ratings of APNIC training services are high. Ninety percent (90%) of respondents ratings were positive when asked if they agreed that APNIC provides useful and relevant training. Eighty six percent (86%) agree that training is provided in a suitable format.
- The most commonly selected topic for potential APNIC training was network security - 70% of respondents indicated that if APNIC could support their organisation with training, extended technical workshops or technical assistance, network security would be the topic that would most assist their organisation. More than half (55%) of respondents indicated that training focused on IPv6 deployment planning would also help their organisation.



## Policy Development

- While the number of respondents who indicated they had participated in the APNIC Policy Development Process for Internet Number Resources was very low, those who did provided more positive feedback about their involvement than in 2014.
- Overwhelmingly, free text feedback suggests a lack of awareness is preventing participation. Many respondents suggested APNIC should provide more information on what is involved and how to participate.

## Resource Allocation, External Relations & New Services

- Respondents indicated that of the APNIC budget remaining after Corporate Operations (which is fixed at 20%), 33% should be allocated to Member Services, 27% to Regional Development and Outreach Services and 20% to Global Cooperation. However, high standard deviations should be noted as an indication of the variability of respondents' answers to this question.
- Consistent with 2014, Network Operator Groups (NOGs), Asia Pacific and global Internet technical organisations are the groups respondents believe APNIC should focus its external relations efforts on.
- There was support for the establishment of local APNIC offices or agencies, with 60% of respondents attaching a degree of importance to the idea. Support was strongest in South Asia (80%) and in LDEs (76%), with training being the service most often mentioned that could be delivered locally.
- Forty three percent (43%) of respondents indicated a willingness to contribute to trend and benchmark data on behalf of the industry. A further 37% wanted more information before deciding. Support was lower in developed economies, with comments suggesting concerns around privacy as the main reason.

## Member Engagement

- Eighty-four percent (84%) of respondents agreed that APNIC is respected in the Internet community.
- Seventy percent (70%) of respondents agreed that they are provided with enough opportunities to contribute to APNIC activities.
- Thirty-one percent (31%) of respondents indicate that they tend to speak highly of APNIC when they are asked, and a further 10% speak highly of APNIC without being asked.

## Survey Sample

A total of 1,175 responses were analysed, with an even distribution of responses across APNIC sub-regions.

The following response counts and percentages were received from economies across the four APNIC sub-regions. The individual economies included in each sub-region are outlined on the next page.

- 268 responses (23%) from East Asia
- 283 responses (24%) from Oceania
- 257 responses (22%) from South East Asia
- 321 responses (27%) from South Asia
- 46 responses (4%) from outside the Asia Pacific region

Of these responses, the largest number comes from Australia (202 responses), China (170 responses) and India (142 responses). A large number were also received from Bangladesh (94 responses).

As outlined in the Methodology, survey data has been cross – tabulated and analysed according to APNIC sub-regions as shown above. However, due to the large number of responses received from China and Australia, data for East Asia and Oceania in large part reflect the views of respondents in these particular economies.

As in 2014, economies have also been classified as Developed, Developing and Least Developed Economies (LDEs) according to the United Nations classifications\*.

The following samples are available for each classification:

- 170 (14%) from LDEs
- 316 (27%) from Developed Economies
- 689 (59%) from Developing Economies

This provides a very similar composition of responses as in 2014, albeit with slightly smaller percentage (-3%) of responses from LDEs.

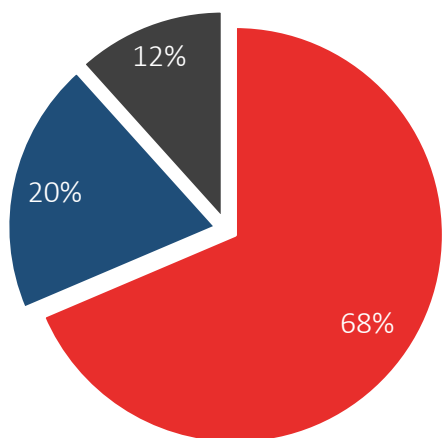
## Responses by sub-region and economy

| East Asia        |            |            |
|------------------|------------|------------|
| CN               | 170        | 13%        |
| HK               | 39         | 3%         |
| JP               | 24         | 2%         |
| KP               | 0          | 0%         |
| KR               | 2          | 0%         |
| MN               | 9          | 1%         |
| MO               | 0          | 0%         |
| TW               | 24         | 2%         |
| <b>Sub-total</b> | <b>268</b> | <b>23%</b> |
| Oceania          |            |            |
| AS               | 1          | 0%         |
| AU               | 202        | 15%        |
| CK               | 2          | 0%         |
| FJ               | 4          | 0%         |
| FM               | 1          | 0%         |
| GU               | 1          | 0%         |
| KI               | 0          | 0%         |
| MH               | 0          | 0%         |
| MP               | 1          | 0%         |
| NC               | 2          | 0%         |
| NF               | 0          | 0%         |
| NR               | 1          | 0%         |
| NU               | 1          | 0%         |
| NZ               | 47         | 4%         |
| PF               | 0          | 0%         |
| PG               | 10         | 1%         |
| PW               | 2          | 0%         |
| SB               | 1          | 0%         |
| TK               | 1          | 0%         |
| TO               | 2          | 0%         |
| TV               | 1          | 0%         |
| VU               | 2          | 0%         |
| WF               | 0          | 0%         |
| WS               | 1          | 0%         |
| <b>Sub-total</b> | <b>283</b> | <b>24%</b> |

| South Asia           |              |            |
|----------------------|--------------|------------|
| AF                   | 5            | 0%         |
| BD                   | 94           | 7%         |
| BT                   | 7            | 1%         |
| IN                   | 142          | 11%        |
| IO                   | 0            | 0%         |
| LK                   | 10           | 1%         |
| MV                   | 1            | 0%         |
| NP                   | 26           | 2%         |
| PK                   | 36           | 3%         |
| <b>Sub-total</b>     | <b>321</b>   | <b>27%</b> |
| Non APNIC sub-region |              |            |
| AL                   | 1            | 0%         |
| AT                   | 1            | 0%         |
| BE                   | 3            | 0%         |
| BF                   | 1            | 0%         |
| BJ                   | 1            | 0%         |
| CA                   | 3            | 0%         |
| DE                   | 1            | 0%         |
| FI                   | 1            | 0%         |
| FR                   | 3            | 0%         |
| GB                   | 2            | 0%         |
| IE                   | 1            | 0%         |
| NG                   | 1            | 0%         |
| NL                   | 6            | 0%         |
| NO                   | 1            | 0%         |
| RO                   | 1            | 0%         |
| SE                   | 2            | 0%         |
| SI                   | 1            | 0%         |
| US                   | 16           | 1%         |
| <b>Subtotal</b>      | <b>46</b>    | <b>4%</b>  |
| <b>Total</b>         | <b>1,175</b> |            |

| South East Asia  |            |            |
|------------------|------------|------------|
| BN               | 1          | 0%         |
| CX               | 0          | 0%         |
| ID               | 49         | 4%         |
| KH               | 15         | 1%         |
| LA               | 4          | 0%         |
| MM               | 11         | 1%         |
| MY               | 39         | 3%         |
| PH               | 43         | 3%         |
| SG               | 27         | 2%         |
| TH               | 18         | 1%         |
| TL               | 2          | 0%         |
| VN               | 48         | 4%         |
| <b>Sub-total</b> | <b>257</b> | <b>22%</b> |

# Respondent Profile



Q. 4, n=1,175

- APNIC Member or Account Holder
- Member of a NIR in the APNIC region
- Other stakeholder

| Q. 3 - Organisation Type               |  | %            |
|--|--|--------------|
| <b>Sample Size</b>                     |  | <b>1,169</b> |
| Internet Service Provider (ISP)        |  | 32%          |
| Telecommunications / Mobile Operator   |  | 11%          |
| Hosting / Data Centre                  |  | 11%          |
| Academic/Educational/Research          |  | 9%           |
| Other                                  |  | 7%           |
| Banking/Financial                      |  | 6%           |
| Government/Regulator/Municipality      |  | 5%           |
| Non-profit/NGO/Internet community      |  | 4%           |
| Enterprise/Manufacturing/Retail        |  | 3%           |
| Software Vendor                        |  | 3%           |
| Media / Entertainment                  |  | 2%           |
| Domain Name Registry / Registrar       |  | 2%           |
| NREN/Research network                  |  | 1%           |
| Infrastructure (transport/hospital)    |  | 1%           |
| Internet Exchange Point (IXP)          |  | 1%           |
| Hardware Vendor                        |  | 1%           |
| Industrial (construction, mining, oil) |  | 1%           |

| Q. 43 - Position                                   |  | Sample Size | 1,173 |
|--|--|-------------|-------|
| IT/ICT Manager or equivalent                       |  | 34%         |       |
| Technical Operations                               |  | 29%         |       |
| Executive Director/ Managing Director/ CEO/CFO/CTO |  | 19%         |       |
| Administration                                     |  | 6%          |       |
| Other  |  | 6%          |       |
| Business Development                               |  | 3%          |       |
| Commercial Operations                              |  | 2%          |       |
| Software Development                               |  | 2%          |       |





# Detailed Results



# Participation & Service Satisfaction

# Respondents are satisfied with APNIC performance. Participation and satisfaction varies across sub-regions.

The 2016 APNIC Survey found that respondents are largely satisfied with APNIC's delivery of services.

Eighty-four percent (84%) of APNIC Members used APNIC services or participated in APNIC activities over the last two years, and 62% of Members of NIRs or other Stakeholders had also interacted with APNIC over the same timeframe. In summary, over the last two years:

- 75% of all respondents indicated they had visited the APNIC website
- 59% of respondents had used MyAPNIC.
- 53% of respondents had applied for IP addresses or AS number resources
- 49% of respondents had accessed the APNIC Whois Database service.
- 45% of respondents had received IP addresses or AS number resources.
- The APNIC Blog was read by over 40% of all respondents.
- Twenty-two percent (22%) of all respondents indicated they had attended an APNIC conference, event or training course.

There were some significant differences in the participation profiles of respondents from different APNIC sub-regions.

Overall, satisfaction with individual services is very high. Over 90% of respondents rated their experience of the core APNIC services of IP address applications and allocations, the Whois database, reverse DNS and technical and helpdesk assistance as positive.

Respondents are most satisfied with the personal services and customer support provided by APNIC. Many free text comments referred to the high quality of the customer service and fast turn-around provided by the APNIC helpdesk.

Respondents in South Asia are the most satisfied with APNIC services overall, with 96% rating both service quality and value positively. In South East Asia, respondents ratings for service quality were 94% and service value were 93%, whilst Oceania respondents rated service quality and value at 92% and 88% respectively. Ratings from respondents in East Asia for service quality and value were significantly lower than the other sub-regions with 80% providing positive ratings.

When looked at from an economic development perspective, respondents from LDEs were more likely to indicate that they had used most of the APNIC services presented, suggesting greater reliance on APNIC for support and assistance than respondents in the more developed economies.





In order to measure satisfaction with APNIC service delivery, respondents were asked to indicate how often they used APNIC services or contacted APNIC over the last two years.

APNIC Members were significantly more likely to have used APNIC services or contacted APNIC for support than other respondents. Over half (52%) had used an APNIC service or interacted with APNIC in some way between one and five times over the last two years.

This is slightly higher than in 2014 when 48% of APNIC Members and Account Holders had interacted with APNIC between one and five times.

Thirty-two percent (32%) of respondents indicated they had interacted with APNIC more than five times over the last two years, which is lower than in 2014. Also, 9% of respondents had no contact with APNIC over that time period, compared to 4% in 2014. With figures unavailable from the 2012 survey, it may be useful to track this over time as it could be an indication of the on-going need for services.

Respondents from Oceania and those from developed economies were the most likely to have interacted with APNIC, with 83% and 84% respectively indicating they had interacted with APNIC at least once.

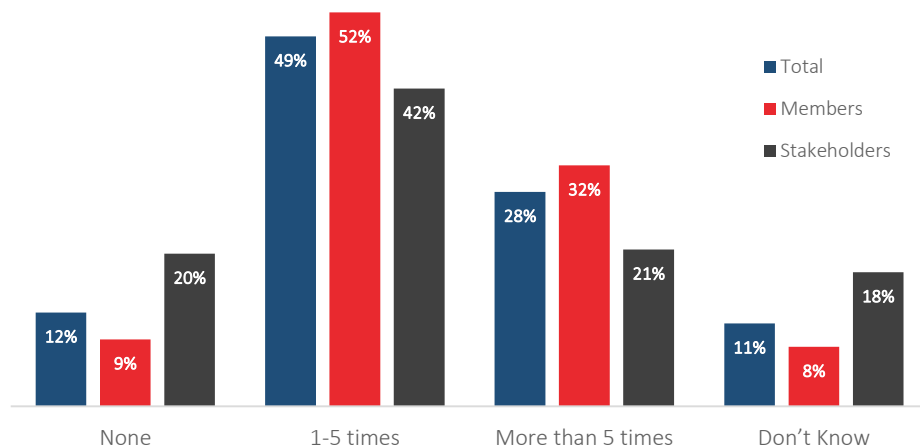
Respondents from LDEs and developing economies were somewhat less likely to use APNIC services with 76% and 74% respectively having interacted with APNIC at least once in the past two years.

Similarly, respondents from East Asia (78%), South East Asia (74%) and South Asia (70%) were less likely than their Oceania counterparts to have used the services, contacted or interacted with APNIC at least once in the past two years.

9% of APNIC Members have had no contact with APNIC in the past two years, an increase of 5% since the 2014 Survey

**Q 4 - # of times respondents have used an APNIC Service, contacted or interacted with APNIC in the past two years**

(n = 1,175) (Presented to all respondents)



## APNIC Service Usage

| Q 5 - Participation          | Total | Member | Stakeholder |
|------------------------------|-------|--------|-------------|
| Sample Size                  | 1,030 | 735    | 295         |
| Visited the website          | 75%   | 77%    | 71%         |
| * Used MyAPNIC               | 59%   | 59%    | 0%          |
| * Applied for IP addresses   | 53%   | 53%    | 0%          |
| Used the Whois Database      | 49%   | 53%    | 39%         |
| * Received IP addresses      | 45%   | 45%    | 0%          |
| Read the blog                | 43%   | 41%    | 46%         |
| * Contacted the helpdesk     | 33%   | 33%    | 0%          |
| * Used reverse DNS           | 27%   | 27%    | 0%          |
| ** Contacted APNIC           | 22%   | 0%     | 22%         |
| Attend conference/event      | 22%   | 21%    | 24%         |
| Attended training            | 22%   | 22%    | 20%         |
| Personally met with APNIC    | 17%   | 16%    | 22%         |
| Attended presentation        | 15%   | 13%    | 22%         |
| * Technical assistance       | 13%   | 13%    | 0%          |
| * Transferred IPv4 addresses | 12%   | 12%    | 0%          |
| Participate SIGs/Meetings    | 7%    | 5%     | 11%         |
| * Used RPKI services         | 5%    | 5%     | 0%          |
| Policy Development           | 5%    | 4%     | 7%          |
| None of these                | 2%    | 1%     | 5%          |
| Other                        | 2%    | 1%     | 4%          |

\* Option not offered to respondents

\*\* Option not offered to respondents

Respondents were next asked to indicate which APNIC services they had used.

Overall, 75% of respondents indicated they had visited the APNIC website over the last two years. Fifty nine percent (59%) also used MyAPNIC. Nearly half of respondents (49%) had accessed the APNIC Whois Database service.

Fifty-three percent (53%) of respondents had applied for and 45% had received IP addresses or AS number resources. Respondents in East Asia were significantly less likely to have applied for or received IP addresses or AS number resources from APNIC.

The APNIC Blog was read by over 40% of respondents. Those from LDEs were most likely to read APNIC content.

Only 22% of respondents said they had attended an APNIC conference or other event, or that they had attended an APNIC training course or online training.

A third of respondents had contacted the APNIC helpdesk over the last two years, while 13% had contacted the APNIC technical assistance team. Twenty-two percent (22%) of respondents contacted APNIC with a general query.

## There were some significant differences in participation of respondents in different APNIC sub-regions.

Respondents from LDEs were more likely to indicate they had used many of the APNIC services from the list presented, suggesting greater reliance on APNIC for support and assistance than respondents in more developed economies. They are also significantly more likely to have attended an APNIC conference or event (39%), had a meeting with an APNIC representative (34%), or attended a presentation (24%) than those from developed or developing economies.

In contrast, respondents from developed economies were more likely to use the online services such as the website, MyAPNIC, the Whois database service and reverse DNS services. This may be because of greater experience with these services through technical knowledge or language fluency, although this was not tested.

From a sub-regional perspective, Oceania respondents were the most likely to have visited the website, used MyAPNIC, the Whois database and reverse DNS services.

Respondents in South East and South Asia were more likely to attend training (27% and 32% respectively). Respondents in South East Asia were also more likely to have attended an APNIC conference or event in the last two years (33%) than respondents in other APNIC sub-regions.

Respondents in East Asia were the least likely to access services and participate in APNIC activities. In particular, East Asia respondents were significantly less likely to indicate they had applied for or received IP addresses or AS number resources, used the Whois database and MyAPNIC, or contacted the helpdesk or APNIC technical assistance team over the last two years.

**Attendance at training courses was highest among respondents from South Asia and LDEs**

| Q 5                       | Total        | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia |
|---------------------------|--------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|
| <b>Sample Size</b>        | <b>1,030</b> | <b>155</b> | <b>278</b>          | <b>597</b>           | <b>235</b> | <b>247</b> | <b>227</b>      | <b>276</b> |
| Visited the website       | 75%          | 81%        | 82%                 | 70%                  | 65%        | 83%        | 76%             | 76%        |
| Used MyAPNIC              | 59%          | 49%        | 64%                 | 30%                  | 23%        | 59%        | 39%             | 40%        |
| Applied for IP addresses  | 53%          | 48%        | 44%                 | 32%                  | 20%        | 43%        | 44%             | 41%        |
| Used the Whois Database   | 49%          | 49%        | 60%                 | 43%                  | 36%        | 58%        | 50%             | 48%        |
| Received IP addresses     | 45%          | 45%        | 41%                 | 25%                  | 15%        | 41%        | 32%             | 36%        |
| Read the blog             | 43%          | 54%        | 40%                 | 41%                  | 37%        | 42%        | 42%             | 50%        |
| Contacted the helpdesk    | 33%          | 32%        | 28%                 | 19%                  | 11%        | 28%        | 26%             | 27%        |
| Used reverse DNS          | 27%          | 20%        | 33%                 | 13%                  | 11%        | 32%        | 17%             | 16%        |
| Handling your query       | 22%          | 3%         | 4%                  | 8%                   | 10%        | 3%         | 5%              | 7%         |
| Attend conference/event   | 22%          | 39%        | 14%                 | 21%                  | 21%        | 15%        | 33%             | 21%        |
| Attended training         | 22%          | 44%        | 9%                  | 22%                  | 16%        | 13%        | 27%             | 32%        |
| Personally met with APNIC | 17%          | 34%        | 10%                 | 17%                  | 13%        | 12%        | 21%             | 24%        |
| Attended presentation     | 15%          | 24%        | 9%                  | 16%                  | 12%        | 9%         | 21%             | 18%        |
| Technical assistance      | 13%          | 15%        | 11%                 | 8%                   | 2%         | 11%        | 11%             | 13%        |
| Transf'd IPv4 addresses   | 12%          | 9%         | 10%                 | 8%                   | 9%         | 9%         | 10%             | 7%         |
| Participate SIGs/Mtg's    | 7%           | 7%         | 6%                  | 7%                   | 9%         | 4%         | 7%              | 7%         |
| Used RPKI services        | 5%           | 11%        | 3%                  | 3%                   | 1%         | 2%         | 4%              | 8%         |
| Policy Development        | 5%           | 5%         | 3%                  | 5%                   | 7%         | 2%         | 5%              | 5%         |

# Assessment of APNIC Services

Having identified the APNIC services used, the next question asked respondents to rate their satisfaction with those APNIC services, on a seven point scale from Poor to Excellent.

Results are presented below to show the mean scores. On the following pages comparisons are provided between different economy type and sub-sub-region, as well as ratings from the 2014 survey where they were able to be compared.

Overall, satisfaction with individual services is very high. The survey confirmed the feedback from the 2016 focus groups, and respondents are largely satisfied with the delivery of APNIC services and the role of APNIC in general.

Respondents rating of their experience of the core APNIC services of IP address applications and allocations, the Whois database, reverse DNS and technical and helpdesk assistance are mostly unchanged from the 2014 Survey and remain positive.

Respondents are most satisfied with the personal services and customer support provided by APNIC.

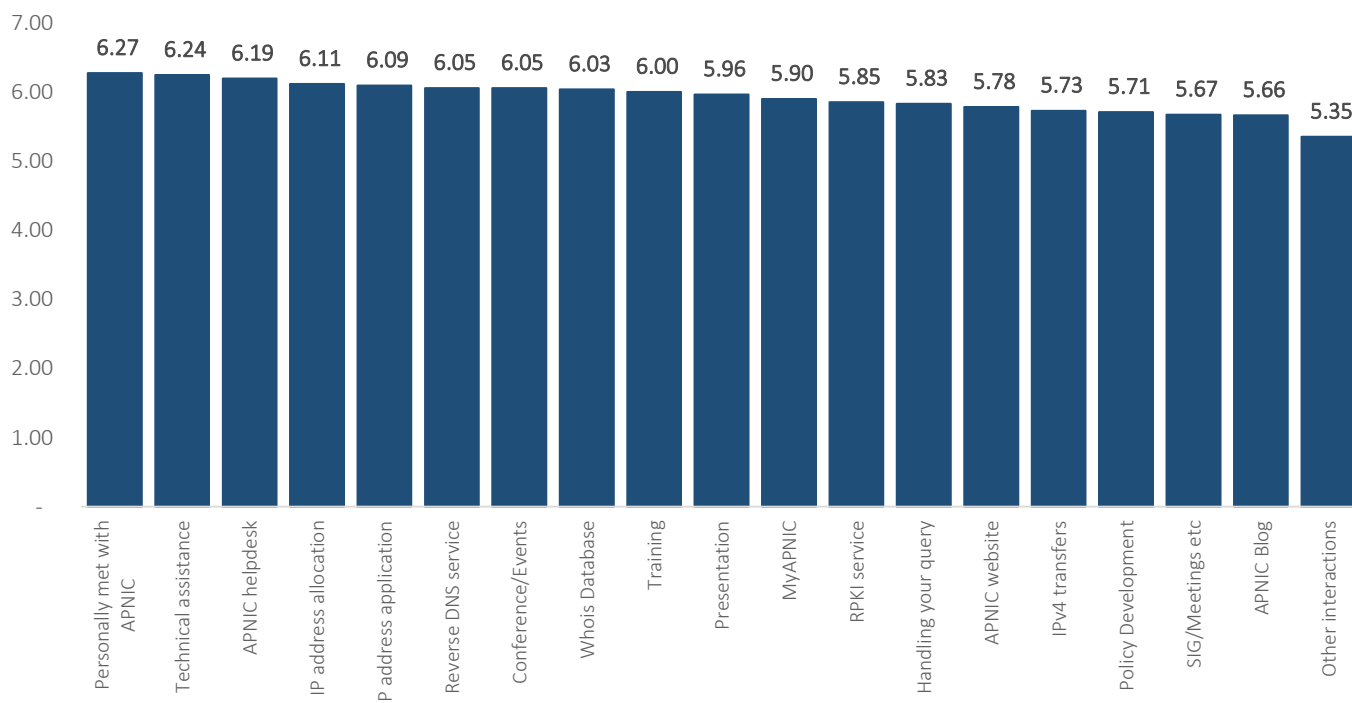
Over 90% of respondents rated the service provided by the Technical Assistance Team and the APNIC helpdesk very highly (95% and 91% respectively). Of those respondents who had met personally with an APNIC representative, 92% rated the experience positively. Fast and professional service provided by APNIC staff was often mentioned in the free text comments.

Respondents were also very satisfied with their experience of IP address and AS resource application and allocation with 93% and 92% respectively providing rating of five or higher. Satisfaction with reverse DNS services and the Whois Database (both 92%) was also high.

*“Blog, MyAPNIC, Technical Support Team, Live Chat... everything is more interactive and helpful.”*

## Q 6 - Respondents ratings of their experience using APNIC services and activities.

Mean Score (base n = 1030, n - various) (Presented to all respondents)



## Respondents’ ratings of their experience using APNIC services and activities was consistent with the 2014 Survey.

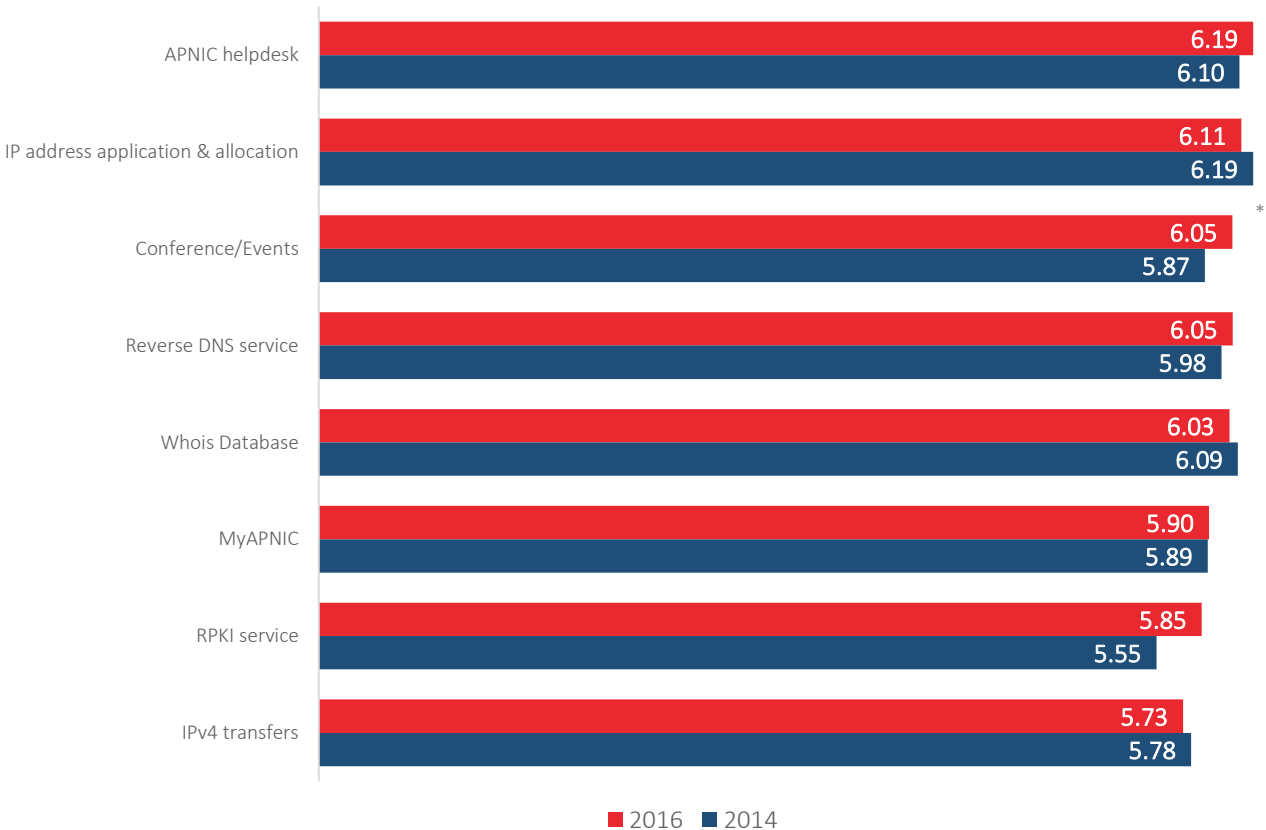
Several of the services that respondents were asked to rate were the same as those in the 2014 Survey and these comparisons are shown below.

The results show that respondents’ ratings of their experience with APNIC service delivery is mostly unchanged.

While respondents’ experiences of some services, such as APNIC helpdesk, conferences and events and RPKI services have improved, other services have stayed the same.

### Q 6 - Respondents ratings of their experience using APNIC services and activities.

Mean Scores (base n = 1,175, n - various) (Presented to all respondents)

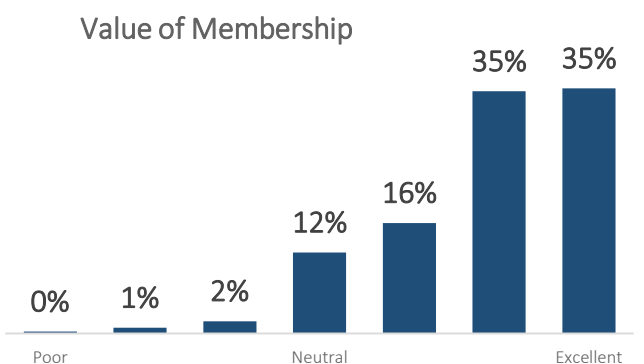
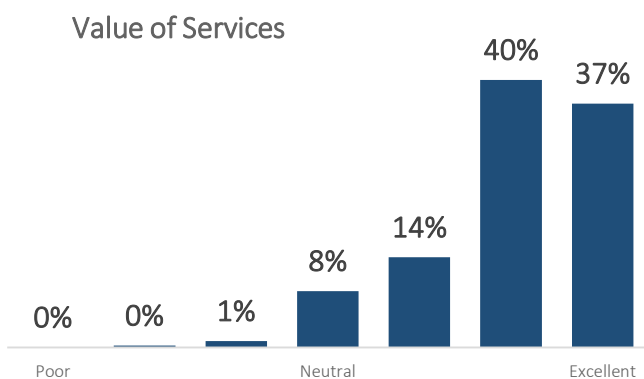
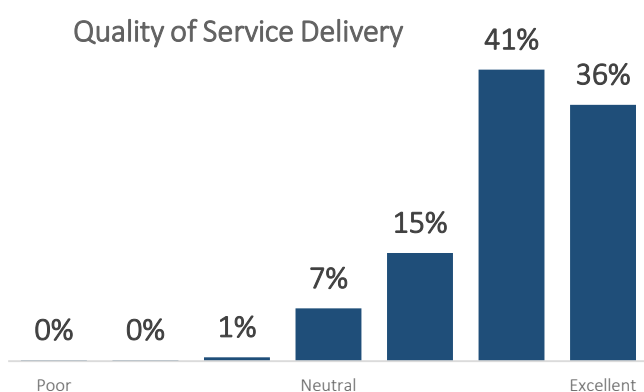


\* Please note separate questions were asked in 2016. Mean score for IP address applications is 6.09, IP address allocation is 6.11



# Overall Service Satisfaction

# Overall Satisfaction with APNIC Services



## Q 8 - Respondents ratings of the quality and value of APNIC services and Membership

(n = 733) (Presented to APNIC Members only)

Respondents' ratings of APNIC service quality and value are positive, with South Asia respondents the most satisfied with APNIC services.

After rating their experience using individual APNIC services, respondents were asked to rate the overall quality and value of APNIC services and membership on a 7 point scale from Poor to Excellent.

Ninety-two percent (92%) of respondents rated service quality positively with 91% rating the value of services at a 5 or higher. Eighty-six percent (86%) also provided a rating higher than neutral for the overall value of their membership.

As can be seen on the next page, when responses are segmented by APNIC sub-regions, respondents in South Asia are the most satisfied with the services overall, with 96% rating service quality and value positively. Ratings for service quality and value from respondents in South East Asia (94% and 93% respectively), and Oceania (92% and 88% respectively) were also positive. These sub-regions provided significantly higher ratings than those provided by respondents in East Asia (both ratings were 80%).

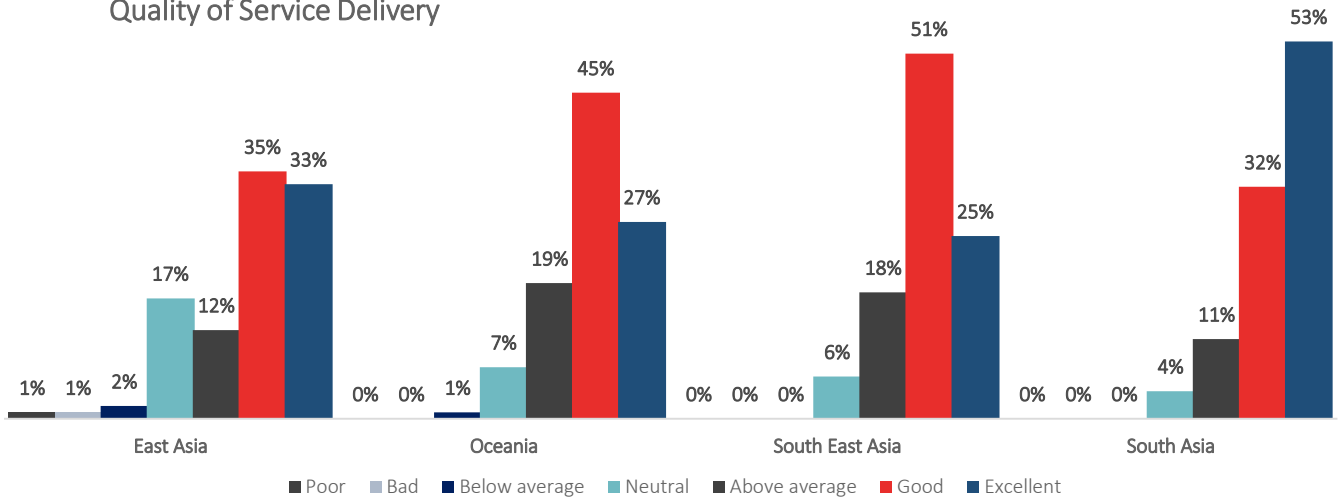
Respondents from East Asia were the least likely to provide a score of 5 or higher for APNIC service quality and value. Eighty percent (80%) of respondents from East Asia rated these positively.

South and South East Asia respondents were also significantly more likely to be satisfied with the overall value provided by their Membership than respondents from the other two sub-regions. Ninety-three percent (93%) of respondents from South Asia and 90% of those from South East Asia rated the value of membership positively. This compares to 81% in Oceania and 77% in East Asia.

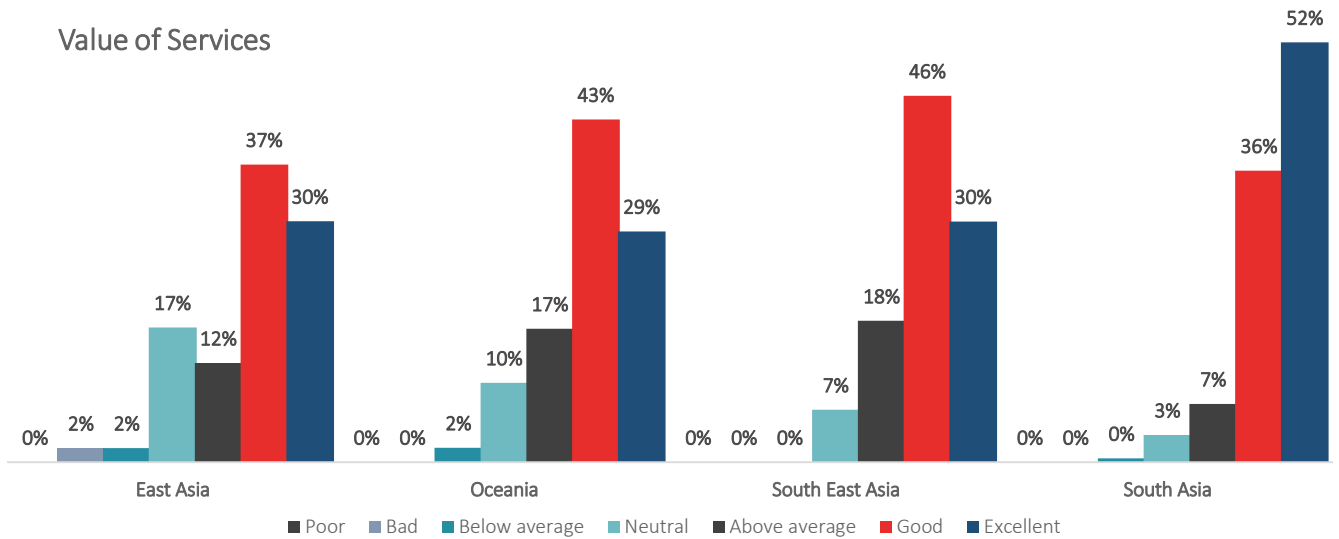
There is also a significant difference in the perception of overall membership value between the LDEs and developed economies. Ninety percent (90%) of respondents in LDEs rated the overall value provided by APNIC Membership as a 5 or above, compared to 88% of respondents in developing economies and 80% of respondents in developed economies.

# Overall satisfaction by sub-region

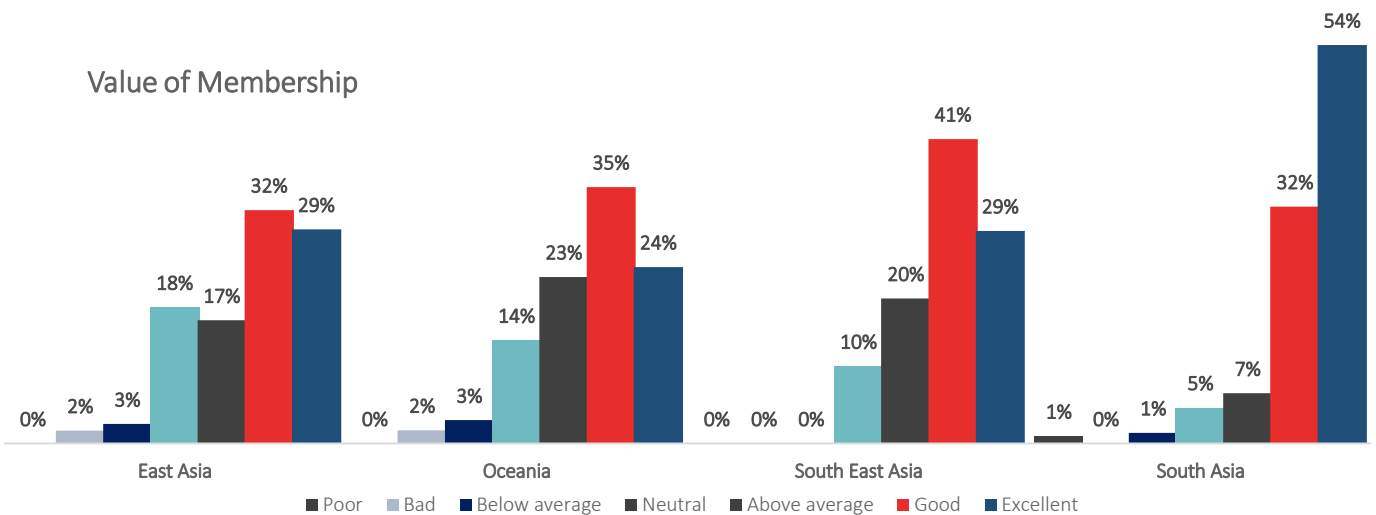
Quality of Service Delivery



Value of Services



Value of Membership



Note: Figures may not sum to 100 due to rounding



The quality and value ratings respondents provided in 2016 are able to be compared to the ratings in 2014. Satisfaction has improved in South Asia, however there has been a slight fall in the mean scores provided in other APNIC sub-regions.

There is also a significant difference between the ratings of service quality and value provided by respondents in South Asia and those in other sub-regions.

While the mean score for service quality had fallen slightly in 2016, when asked directly about perceptions of improvement in service delivery over the last two years, respondents were very positive.

Please note that the rating of the value of APNIC services does not provide a direct comparison to 2014 due to slightly different question wording. This may have affected the relatively high value ratings in 2016, which provides ratings of service value only, whereas the 2014 figures includes mixed rating of service and membership value.

\*Figures are provided here for indicative purposes.

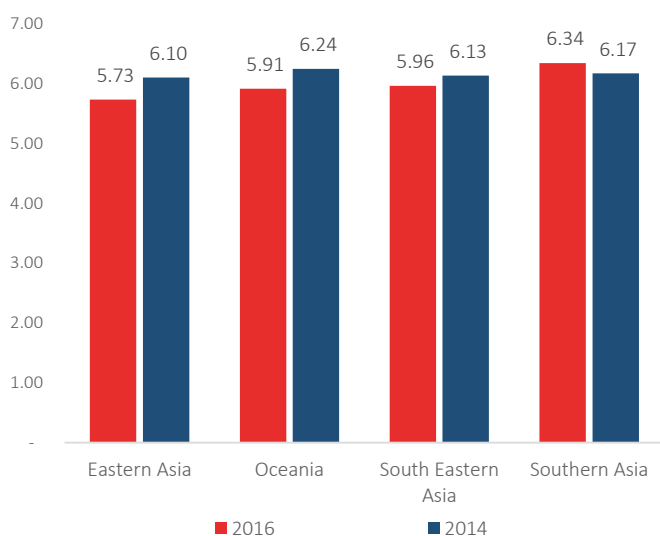
### Respondents ratings of the quality and value of APNIC services compared to 2014

Mean Scores, (n – 733) (Presented to APNIC Members only)

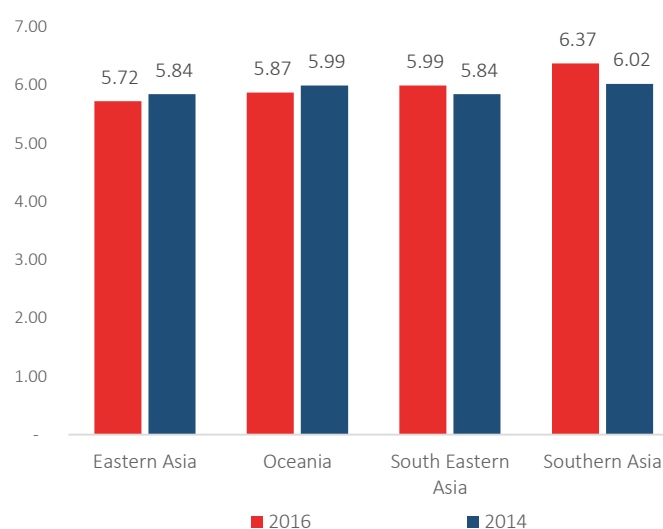
| Quality of Service Delivery | Total      | East Asia  | Oceania    | South East Asia | South Asia |
|-----------------------------|------------|------------|------------|-----------------|------------|
| <b>Sample</b>               | <b>733</b> | <b>113</b> | <b>222</b> | <b>153</b>      | <b>207</b> |
| 2016                        | 6.03       | 5.73       | 5.91       | 5.96            | 6.34       |
| 2014                        | 6.15       | 6.10       | 6.24       | 6.13            | 6.17       |
| Value of Services           | Total      | East Asia  | Oceania    | South East Asia | South Asia |
| <b>Sample</b>               | <b>776</b> | <b>115</b> | <b>226</b> | <b>177</b>      | <b>220</b> |
| 2016                        | 6.02       | 5.72       | 5.87       | 5.99            | 6.37       |
| *2014                       | 5.91       | 5.84       | 5.99       | 5.84            | 6.02       |

\* Please note the question wording in the 2014 and 2016 surveys varied slightly, and as such comparisons should be treated as indicative only.

Quality of Service Delivery



Value of Services



Comparison of respondents ratings of APNIC service quality and value provided in 2016 based on the number of interactions respondents had with APNIC, was also undertaken. While the number of interactions did not significantly affect the ratings provided for the service quality, more frequent users rated service value more highly.

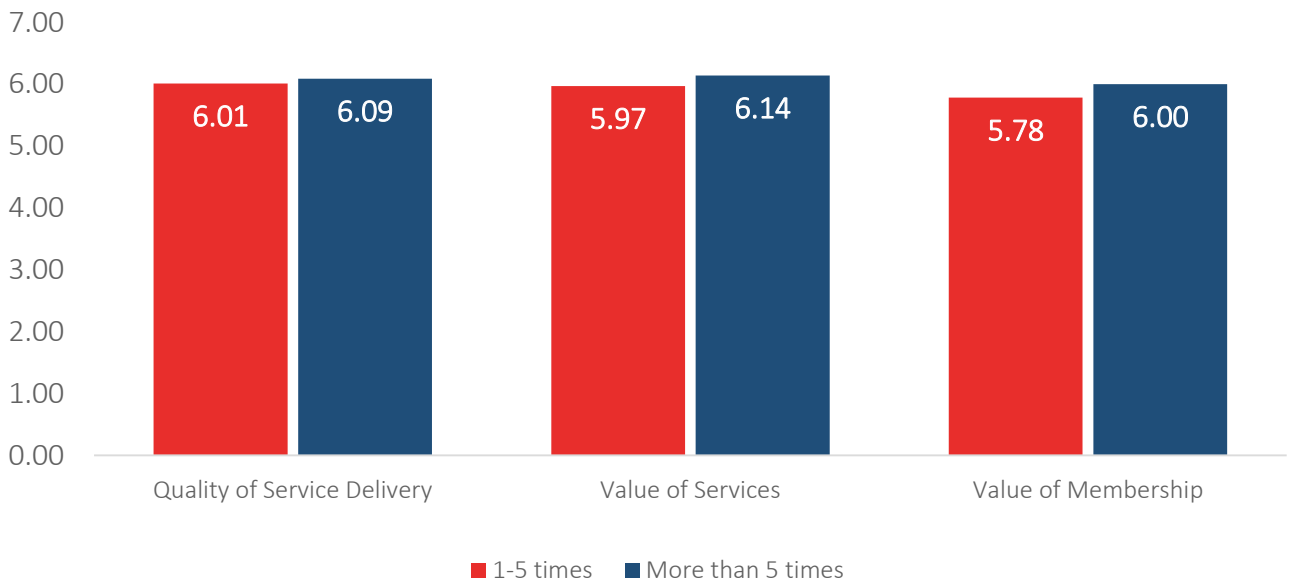
Ninety percent (90%) of respondents who had between 1 and 5 interactions with APNIC over the last two years rated the value of APNIC services as above average or higher, compared to 92% of those respondents who had more than 5 interactions.

Perceptions of the value of overall APNIC Membership also improved with greater contact.

Eighty-four percent (84%) of respondents with fewer than 5 interactions with APNIC over the last two years rated the Membership value highly, compared to 89% of respondents who dealt with APNIC more frequently.

**Frequent users rated the value they received more highly.**

**Q 8 - Respondents ratings of the quality and value of APNIC services and Membership by frequency of interaction with APNIC**  
 Mean Score (n = 733) (Presented to APNIC Members only)



# Service Improvement

While a majority of respondents indicate that APNIC's service delivery has improved over the last two years, many respondents indicated that APNIC provides consistently high service.

After rating the individual services and the overall quality and value of APNIC service, respondents were then asked to rate any change in APNIC's service delivery over the last two years. Ratings were provided on a five point scale, from Declined significantly to Improved significantly.

Overall, a majority of respondents indicated that APNIC's service delivery had improved, with 23% rating it a significant improvement. And while many respondents indicated, like in 2014, that it was "business as usual", free text comments suggest that most believe they are continuing to receive the same high levels of service that APNIC has always provided.

Further, while a large number of respondents indicated that APNIC service delivery had remained consistent with previous years it should be noted that free text comments indicate many respondents who selected this option felt unable to answer the question because they had not used the services enough to provide a rating.

Very few respondents noted a decline in service levels, and the improvement ratings for both 2016 and 2014 are the same (56% and 57% respectively).

Respondents in South Asia are the most positive in their rating of APNIC's performance over the last two years. Seventy-eight percent (78%) of South Asia respondents indicated that service delivery had either significantly or slightly improved.

This compares to 30% of Oceania respondents who indicated that APNIC's performance had improved either significantly or slightly over the last two years.

Improvements in MyAPNIC and the website were noted in the free text comments within the survey and feedback from the focus groups.

Further improvements were requested during focus group discussions, with some respondents mentioning that having parts of the website or MyAPNIC available in multiple languages would assist them. In the free text comments respondents added in the online survey, there was again mention that more local or face to face training would assist.

## Q 9 - Respondents rating of change in APNIC Service delivery over the last two years.

(n = 723) (Presented to APNIC Members only)

|                        | Total | East Asia | Oceania | South East Asia | South Asia |
|------------------------|-------|-----------|---------|-----------------|------------|
| Sample Size            | 723   | 113       | 219     | 150             | 203        |
| Declined significantly | 1%    | 1%        | 0%      | 1%              | 0%         |
| Declined slightly      | 1%    | 4%        | 0%      | 0%              | 1%         |
| Stayed the same        | 43%   | 41%       | 69%     | 33%             | 21%        |
| Improved slightly      | 33%   | 34%       | 21%     | 42%             | 39%        |
| Improved significantly | 23%   | 21%       | 9%      | 24%             | 39%        |
| Mean                   | 3.76  | 3.71      | 3.37    | 3.87            | 4.17       |
| Standard Deviation     | 0.83  | 0.87      | 0.67    | 0.82            | 0.78       |

## Respondents provided several reasons for their feedback about APNIC's performance over the last two years.

Reflecting the individual service ratings, comments about the APNIC helpdesk and customer service were largely positive.

*"All communications from APNIC helpdesk staff was of the highest level"* Oceania

*"Improved turn around times and more accurate information provided."* Oceania

*"Interaction with helpdesk team is excellent"* South Asia

*"The services response tend to be faster."* South Asia

Several respondents suggested that there had been improvements to APNIC's website and online services.

*"APNIC website, blog, MyAPNIC and Whois is now much more informative than ever before."* South Asia

*"The user interface on MyAPNIC is improved and seems an effort towards making it less complex."* South Asia

*"I had to send an email and wait for the answer before, but now I can use the chat on line."* East Asia

While there was a high number of responses that suggested that APNIC service had stayed the same, many comments indicated that service from APNIC had always been good.

*"Always been very much impressed with APNIC, no real area for improvement."* Oceania

*"APNIC's services has already been excellent since we first joined APNIC and that has not changed."* South East Asia

*"I always have received a very quality service in the past two years and before"* South Asia

*"We have always had fantastic service from APNIC."* Oceania

It also appears that many of the responses suggesting APNIC service delivery had 'stayed the same' were from respondents with insufficient experience of dealing with APNIC to respond accurately.

*"Don't use it enough to have noticed a change."* Oceania

*"I don't use the services provided often enough to provide a better judgement."* Oceania

*"We have not needed to have extensive contact lately so we could not say if it has gone either way."* Oceania

A night cityscape with glowing white arcs in the sky and a red overlay containing text. The background shows a city skyline at night with illuminated buildings and a body of water in the foreground. Several bright white arcs curve across the dark sky, originating from a point on the left and spreading out towards the right. A semi-transparent red rectangular box is positioned in the lower half of the image, containing white text.

“Yes, quality of APNIC's service delivery improved significantly over the past two years. I have noted a significant change in APNIC's website to provide online services to its members.”

## A majority agree that APNIC provides essential Internet resources that cannot be accessed elsewhere.

To test respondents' motivations for using or accessing APNIC services, three statements were included in the survey about APNIC providing essential Internet resources not available elsewhere, providing other services of value not available elsewhere in the respondents economy and whether they choose to use APNIC services because they were of higher quality than other services available. Respondents were asked to rate their agreement using a seven point scale from Strongly disagree to Strongly agree. Three quarters of respondents (75%) indicated agreement in some form that APNIC provides essential Internet resources that cannot be accessed elsewhere.

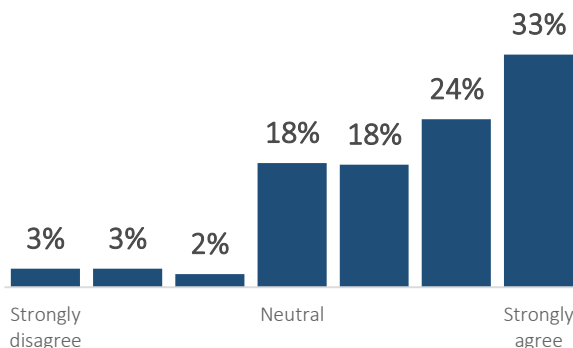
Respondents from developed economies were more likely to agree that APNIC provide essential Internet resources not available elsewhere than developing economies or LDEs. There were significant differences within the sub-regions, with strongest agreement that APNIC provides essential Internet resources not available elsewhere from respondents in Oceania (83%). Lower agreement levels in sub-regions with an in-country NIR possibly explains this result.

Results for the question exploring whether other services offered by APNIC were able to be found in respondents' home economies were less positive. Sixty-four percent (64%) of respondents provided positive ratings that APNIC offers services of value not available in their economy. There was no significant difference in the feedback provided from respondents in different sub-regions.

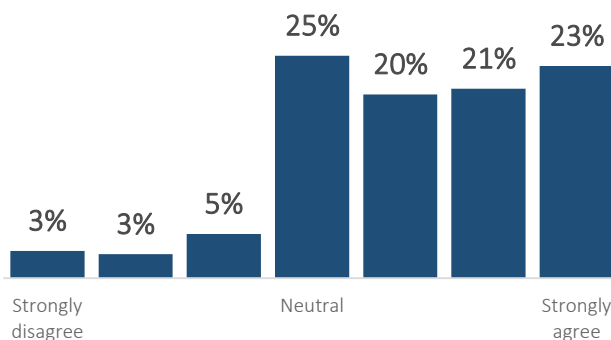
Sixty-one percent (61%) of respondents provided some form of agreement that they choose to use APNIC services because they are of higher quality than other services available.

This result seems at odds with most other feedback throughout the survey, where individual services provided by APNIC were given very positive ratings. Feedback in focus groups also praised APNIC for the generally high performance. It may be that the need for some of the improvements suggested to individual areas, or that lack of use of some APNIC services, may be reflected in this result.

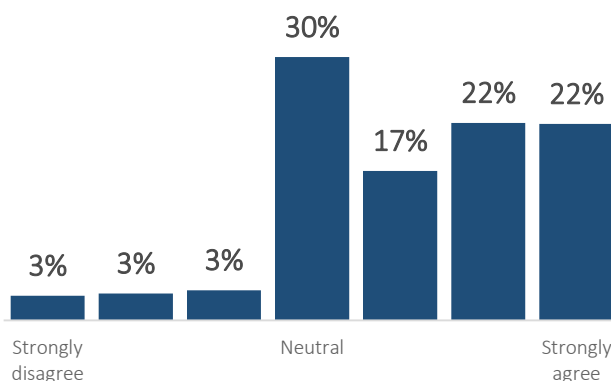
Respondents in LDEs were more likely to indicate that they choose to use APNIC services because they are of a higher quality than they can access elsewhere (74%) than respondents from developed economies (43%).



**APNIC provides essential Internet resources not available elsewhere**  
(Mean = 5.51, Std Dev = 1.49) (n=797) (Presented to APNIC Members only)



**APNIC provides other services not available in my economy**  
(Mean = 5.14, Std Dev. = 1.52) (n=796) (Presented to APNIC Members only)



**I choose APNIC services because they are of higher quality**  
(Mean = 5.10, Std Dev. = 1.50) (n=796) (Presented to APNIC Members only)



# Stakeholder Satisfaction

Members of NIRs or other Stakeholders were only asked to rate their experience with the overall quality of APNIC's service delivery over the last two years. Ratings were provided on a seven point scale, from Poor to Excellent.

Seventy-six percent (76%) of these respondents rated APNIC's service delivery over the last two years positively. Very few respondents provided a negative rating.

Eighty-eight percent (88%) of respondents in Oceania rated APNIC services positively, however the small sample should be noted.

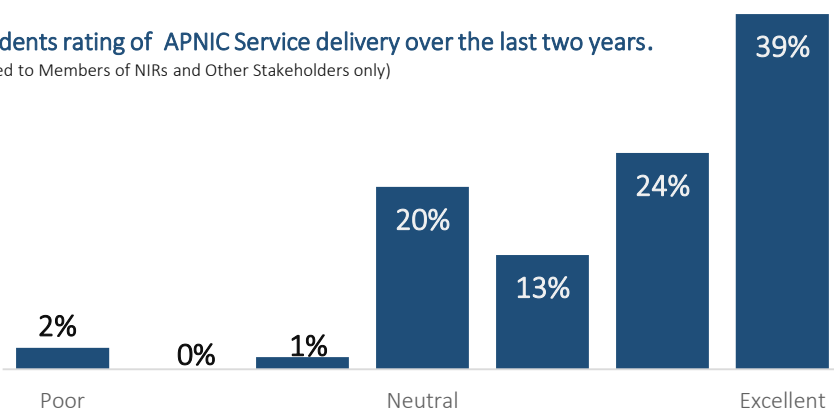
Respondents in South Asia were the next most satisfied group, with 83% rating APNIC services a score of five or higher. Fewer respondents from South East Asia (74%) provided a positive rating for APNIC service delivery.

There were no significant differences in ratings provided by respondents in the least developed, developing or developed economies.

A majority of respondents are satisfied with APNIC's service delivery over the last two years.

## Q 9 - Respondents rating of APNIC Service delivery over the last two years.

(N= 292) (Presented to Members of NIRs and Other Stakeholders only)



|                    | Total | East Asia | Oceania | South East Asia | South Asia |
|--------------------|-------|-----------|---------|-----------------|------------|
| Sample             | 292   | 117       | 25      | 74              | 69         |
| Poor               | 2%    | 3%        | 4%      | 1%              | 1%         |
|                    | 0%    | 0%        | 0%      | 0%              | 0%         |
|                    | 1%    | 2%        | 0%      | 3%              | 0%         |
| Neutral            | 20%   | 22%       | 8%      | 26%             | 16%        |
|                    | 13%   | 12%       | 8%      | 19%             | 6%         |
|                    | 24%   | 14%       | 36%     | 31%             | 30%        |
| Excellent          | 39%   | 48%       | 44%     | 20%             | 46%        |
| Mean               | 5.70  | 5.74      | 6.00    | 5.35            | 6.01       |
| Standard Deviation | 1.40  | 1.49      | 1.38    | 1.27            | 1.24       |

## Respondents also provided reasons for their feedback about APNIC's performance over the last two years.

Most free text feedback from Members of NIRs or other Stakeholders was positive, with many respondents mentioning the professional, knowledgeable and helpful staff.

*"We consider APNIC a critical Stakeholder and partner that conducts itself with professionalism and generously shares its views and expertise." Oceania*

*"The staff are very professional, approachable and are always willing to help. They are experts in their own areas of expertise and are always on hand to share their knowledge and experience." Oceania*

*"APNIC is a very professional organization. I have interacted with APNIC and its representatives in the past in various roles in my career. APNIC is dedicated to the improvement of the internet community in APAC. People in APNIC are knowledgeable and very helpful." South Asia*

Several comments also mentioned the value provided by APNIC training, conferences and online reference materials.

*"The APNIC training and conferences that I have attended were all excellent. Resource persons were real experts. Always a pleasure and a great learning experience to attend APNIC program/trainings/conferences" South Asia*

*"I have used the online resources, and it was of great help to me." Oceania*

*"I have visited APNIC website and blog and I found the information to be user-friendly and educational." South East Asia*

*"Some services of APNIC are useful for me, especially Whois database and APRICOT conference." South East Asia*

Others mentioned the responsiveness of APNIC customer service.

*"Support is very good and deployment is very fast." South Asia*


*"They are responsive and always helpful." South Asia*

A few comments suggested areas that could be improved.

*"Training and seminars are not regularly updated" East Asia*

*".. Due to language problem, I encounter difficulties assigning the IP address and setting. It will work if Apnic provide a Chinese website." East Asia*





“APNIC staff interaction has always been extremely professional, friendly and helpful. APNIC is one of the few organizations for which are not just service providers, but a key Member of your community of practice.”



# Respondents' Challenges

# Security is *the* challenge facing Member organisations.

Reflecting the focus groups discussions, respondents indicated that security is the major challenge that they face.

To test the feedback from the focus group discussions, a section was included in the online survey about the challenges that respondents face in providing Internet related services, products and activities. Respondents were also asked if they thought APNIC understood their issues and if they could assist in addressing them.

There were fifteen different issues or challenges for respondents to rank. It should be noted that several of these were around similar topics, for example four specific statements about security were included, along with six separate statements regarding deployment of IPv6.

The 2016 APNIC Survey found that the three highest ranked challenges for respondents were all related to security.

While the 2016 focus groups cited shortage of IPv4 addresses and slow uptake of IPv6 as the major challenges, security concerns were also common across all the topics discussed in the groups, in which participants felt that security threats had increased from the 2014 APNIC survey process.

In summary, the survey found that:

- Network security (intrusion and other breaches) were ranked among the top three challenges by 41% of respondents
- A further 33% ranked DDoS attacks among the top three challenges
- Phishing, spam, ransomware and malware was selected by 25% of respondents in the top three challenges
- Obtaining more IPv4 addresses was the number one ranked challenge for 10% of respondents, with 22% ranking it in the top three issues
- Challenges related to IPv6 deployment followed, although responses were spread across the six options available for selection

While the clear challenges are with network security and DDoS attacks, overall issues with IPv6 in areas such as awareness within decision maker groups, customer deployment and unwillingness to use IPv6 were also challenging for respondents. This was particularly apparent in the free text comments from respondents where IPv6 was mentioned frequently. Respondents mentioned a “need to get awareness about IPV6 uses, benefits, trainings & deployment case studies”. It was also reflected in the focus groups, where many participants had IPv6 deployed in their core network, but had few customers and were unable to convince others to change.

Sixty-one percent (61%) of respondents believe that the APNIC EC and Secretariat understand the challenges facing respondents in providing Internet related services. This compares favourably to industry benchmarks for Member-based organisations. The most recent Associations Matter Study found that the average score across Member-based organisations for this question was 53%.

Eighty percent (80%) of respondents agreed that APNIC has a role to play with getting more IPv4 addresses. Just over 50% of respondents indicated that APNIC could help them with their security related challenges.

More training, particularly in network security and IPv6, and greater collaboration and knowledge sharing among the community were mentioned most frequently in free text comments about how APNIC could assist with the challenges facing respondents.

**61%** of respondents agree that the APNIC EC and Secretariat understand their challenges

# Challenges

Respondents were asked to identify the challenges facing their organisation, and to rank at least three, in order of priority, from a list of fifteen items. Network security was included in the top three challenges facing their organisation by 41% of respondents.

Other security related issues followed, with 33% of respondents rating DDoS attacks as one of their top three challenges, and 25% including phishing, spam, malware and ransomware within the top three issues facing their organisation.

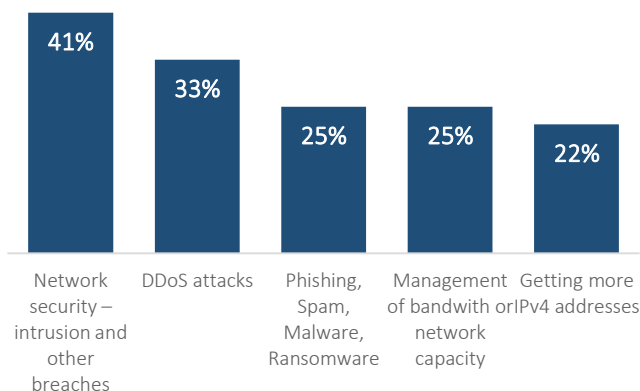
Management of bandwidth and network capacity was included in the top three challenges by 25% of respondents.

These results support the findings from the 2016 focus groups, where security issues, IPv4 availability and slowing uptake of IPv6 were the primary concerns.

## Security is the biggest challenge facing respondents

### % of respondents who ranked statement within the top three challenges

(Presented to APNIC Members only)



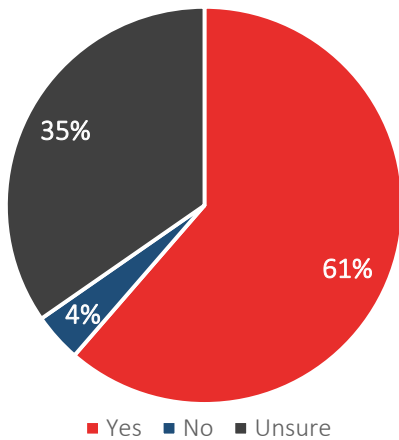
| Aggregated % by Issue | Rank1      | Rank2       | Rank3      |
|-----------------------|------------|-------------|------------|
| Security Issues       | 41%        | 41%         | 36%        |
| IPv6 Related Issues   | 30%        | 34%         | 33%        |
| IPv4 Related Issues   | 13%        | 12%         | 10%        |
| Other Issues          | 15%        | 13%         | 19%        |
| <b>Total</b>          | <b>99%</b> | <b>100%</b> | <b>98%</b> |

| Q 16 – Industry challenges                      | Rank1 | Rank2 | Rank3 | Rank4 | Rank5 | Rank6 | Rank7 | Rank8 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Network security – intrusion and other breaches | 16%   | 13%   | 12%   | 8%    | 9%    | 6%    | 7%    | 4%    |
| DDoS attacks                                    | 13%   | 11%   | 9%    | 8%    | 10%   | 6%    | 6%    | 12%   |
| Getting more IPv4 addresses                     | 10%   | 6%    | 6%    | 7%    | 6%    | 4%    | 7%    | 10%   |
| Management of bandwidth or network capacity     | 8%    | 6%    | 11%   | 10%   | 13%   | 12%   | 9%    | 4%    |
| Phishing, Spam, Malware, Ransomware             | 7%    | 11%   | 7%    | 8%    | 8%    | 6%    | 10%   | 8%    |
| Hiring and/or keeping skilled employees         | 7%    | 7%    | 8%    | 10%   | 7%    | 7%    | 7%    | 3%    |
| Customer unwillingness to use IPv6              | 7%    | 6%    | 8%    | 6%    | 4%    | 12%   | 5%    | 8%    |
| Lack of awareness of IPv6 in my organization    | 6%    | 7%    | 4%    | 7%    | 5%    | 3%    | 5%    | 9%    |
| Deploying IPv6 in customer networks             | 5%    | 5%    | 6%    | 3%    | 9%    | 4%    | 10%   | 9%    |
| Cost of deploying IPv6                          | 5%    | 6%    | 5%    | 5%    | 4%    | 7%    | 10%   | 2%    |
| Routing security                                | 5%    | 6%    | 8%    | 10%   | 6%    | 10%   | 6%    | 5%    |
| Lack of IPv6 applications                       | 4%    | 6%    | 6%    | 8%    | 6%    | 5%    | 4%    | 9%    |
| Risks of deploying IPv6                         | 3%    | 4%    | 4%    | 2%    | 3%    | 7%    | 9%    | 7%    |
| Deploying NAT                                   | 2%    | 4%    | 3%    | 5%    | 4%    | 7%    | 0%    | 2%    |
| Brokers selling/leasing IPv4 addresses          | 1%    | 2%    | 1%    | 3%    | 3%    | 2%    | 6%    | 9%    |

# Does APNIC understand Member challenges?

**Q 19 - Do you think the APNIC EC and Secretariat understand the challenges faced in providing your internet related services, products or activities.**

n = 805 (Presented to APNIC Members only)

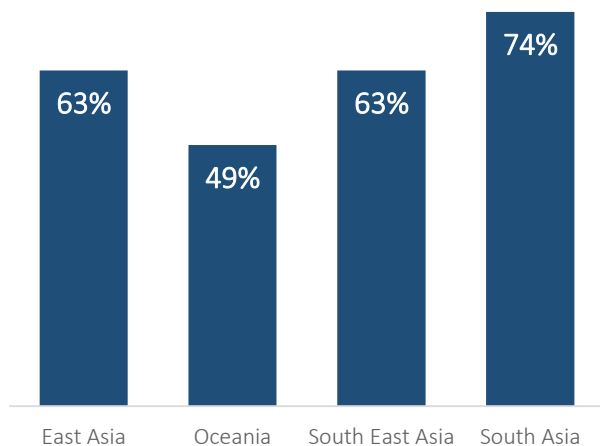


While 61% of respondents think that the APNIC EC and Secretariat understand their challenges there are significant differences in the opinions of respondents in different economy types.

Seventy-eight percent (78%) of respondents in LDEs agreed that APNIC understands their challenges, compared to 65% of respondents in developing economies and 49% of respondents in developed economies.

Sub-regional differences also exist in the responses to this question. Seventy-four percent (74%) of respondents from South Asia agree that the APNIC EC and Secretariat understand the challenges faced in providing Internet related services, products and activities, significantly higher than the level of agreement from other sub-regions.

**Respondents who agree that APNIC understands the challenges their organisation faces**



It is noted however, that the survey respondents were not asked if they expected or required APNIC to understand all of their challenges. Therefore, negative responses to this question can not necessarily be regarded as a complaint.

Respondents from South Asia are most likely to agree that APNIC understands the challenges facing their organisation



# Can APNIC assist with respondents' challenges?

Respondents in developed economies are significantly less likely to believe APNIC can help them with their challenges.

## Lack of IPv4 Addresses

Getting more IPv4 addresses was the challenge in which the majority of respondents (80%) thought APNIC could play a role. Agreement varies across economies and sub-region, with respondents in developed economies and Oceania less likely to agree that APNIC can assist.

Many participants in focus groups suggested APNIC could assist by taking a role in IPv4 address recovery and reclamation efforts, price setting, setting up new allocation policy guidelines and pursuing illegal activity.

While 65% of respondents agreed that APNIC has a role to play where brokers were selling or leasing IPv4 addresses, this was not ranked highly among their challenges. Only 4% of respondents included this in the top three challenges they face.

## Q 17 - Do you believe APNIC has a role to play in helping address these challenges?

n = 851 (Presented to APNIC Members only)

|   | % Agree APNIC can assist |
|---|--------------------------|
| Getting more IPv4 addresses                     | 80%                      |
| Routing security                                | 67%                      |
| Brokers selling/leasing IPv4 addresses          | 65%                      |
| Risks of deploying IPv6                         | 65%                      |
| Lack of awareness of IPv6 in my organization    | 63%                      |
| Customer unwillingness to use IPv6              | 61%                      |
| Network security – intrusion and other breaches | 54%                      |
| Deploying IPv6 in customer networks             | 54%                      |
| DDoS attacks                                    | 53%                      |
| Cost of deploying IPv6                          | 52%                      |
| Lack of IPv6 applications                       | 50%                      |
| Phishing, Spam, Malware, Ransomware             | 50%                      |
| Management of bandwidth and network capacity    | 34%                      |
| Deploying NAT                                   | 33%                      |
| Hiring and/or keeping skilled employees         | 33%                      |

## Security

The highest ranking challenge, network security, was an area that 54% of respondents believe APNIC has a role to play in helping address. Fifty-three percent (53%) also agree that APNIC can assist with the second highest ranked challenge – that of DDoS attacks.

Respondents in developed economies are significantly less likely to agree that APNIC can assist with network security (35%) and DDoS attacks (39%). In comparison, 70% of respondents in LDEs and 64% in developing economies agree that APNIC has a role to play in network security. Sixty-seven percent (67%) of respondents in LDEs and 60% in developing economies agree that APNIC can assist with DDoS attacks.

Fifty percent (50%) of all respondents agree that APNIC can assist with phishing, spam, malware and ransomware, the third highest ranking challenge that respondents face. Again, respondents in developed economies were significantly less likely to agree that APNIC had a role to play, with only 32% agreeing APNIC could help address the challenge.

Sixty-seven percent (67%) of respondents agreed that APNIC could assist with routing security, a challenge included in the top three by 19% of respondents.

In both focus groups and the free text comments provided in the survey, training was the main way in which respondents felt that APNIC could assist with security related challenges. Facilitating collaboration and knowledge sharing was also a strong theme.

## IPv6 Deployment

A majority of respondents agree that APNIC can assist with lack of IPv6 awareness within their own organisations (63%) and with customer unwillingness to use IPv6 (61%). While these were not respondents' main challenges (17% and 21% of respondents respectively ranked these within the top three challenges they faced), it was repeatedly raised in both free text feedback and focus groups.

## Respondents were asked in their own words how they think APNIC can assist them with their challenges.

### Requests for more advanced training was the main theme

*"APNIC can conduct more sub-regional trainings as we have only very few of those in our sub-region."* Oceania

*"APNIC can help us to training the staff for deploying the IPV6"* South East Asia

*"Providing advanced IPV6 trainings..."* South Asia

*"To arrange more advance training in the above mentioned areas specifically network security"* South Asia

### Facilitation of knowledge sharing amongst respondents, and development of case studies was also important.

*"With providing case to case support over time and more engagement with the community."* South Asia

*"Provide info (contacts or success stories, etc) on early adopters of IPV6 with similar setup with ours."* South East Asia

*"More interaction possibly some localized support centres where we can held meeting and interact with APNIC authorities and discuss the faced challenges."* South Asia

### General education and promotion of the benefits of IPv6 was mentioned by several respondents.

*"By being more proactive in reaching management layers of an organisation."* Oceania

*"Currently we have no business demand for IPV6 however APNIC could offer more education, awareness and potentially assistance around IPV6"* Oceania

*"...help Member nations ... in training and exposure to organization that have moved to IPv6 and their story."* Oceania

### Ideas for APNIC to assist with security were also prevalent.

*"APNIC could take a lead role globally in working with network providers and routing equipment manufactures to reduce security risks associated with IP Address spoofing and DDoS/routing level network security globally."* Oceania

*"For Security Part. Maybe APNIC should work out a way to block all known Bad Domain or Malicious Domain in Tier 1 or Tier2 Level so we can benefit from it as Tier 3 ISP services"* Oceania

*"APNIC can assist by helping to combat known addresses/ranges that attacks are being started from"* Oceania



“I think that having a central body to advocate and co-ordinate security initiatives and promotion of IPv6 would be valuable.”





Are organisations  
ready for IPv6?

# Full deployment of IPv6 is mixed across the APNIC sub-regions, but remains relatively low in the context of diminishing availability of IPv4 addresses.

## Participants in the focus groups indicated that deployment or transition to IPv6 appears to have slowed across the region.

As this was identified as a key challenge in the focus groups, a section on IPv6 was included in the online survey. Please note, however, that while APNIC Labs measures end-user IPv6 readiness through paid advertising, website placement and in-browser testing, this Labs data is not linked to the APNIC Survey. Only the stated views and intentions of respondents to the APNIC Survey are reported here.

The full results are presented in the following pages, with the key findings outlined below:

- Fifteen percent (15%) of respondents have IPv6 fully deployed, with 21% indicating that it is deployed in their core network.
- Twenty-nine percent (29%) of respondents have a deployment plan and of those 32% expect IPv6 to have full deployment in 2017.
- Lack of demand from customers and customers not being ready were the challenges most often included in the top three reasons affecting deployment.
- Providing case studies and best practice, more advanced IPv6 training and promotion of the benefits to customers and management/decision makers were viewed as the most effective ways in which APNIC could assist respondents transition to IPv6.

Respondents in LDEs and developing economies are more likely to either have fully deployed, deployed in their core network or have a deployment plan to transition to IPv6. Seventy-three percent (73%) of respondents in LDEs and 72% in developing economies have either deployed or plan to deploy, compared to 52% in developed economies.

Whether this is indicative of organisations in developed economies having access to more IPv4 addresses, the ability to use technology (such as carrier grade NAT) to assist with the lack of addresses, or some other reason is unclear. However, free text comments from respondents in Oceania indicated that ISPs were either not interested in IPv6, they had “enough” IPv4 addresses, or there were no upstream providers who were IPv6 ready.

This was also apparent when asked about the main challenges affecting deployment of IPv6 – in Oceania respondents were far more likely to indicate there were no clear business or technical advantages to transition, and that legacy systems were affecting a move to IPv6 than respondents in other sub-regions.

The most effective ways most respondents think that APNIC can assist separate into two main approaches – advanced training and knowledge sharing, and promotion of the benefits to business, customers, ISPs, Telcos and other hardware vendors.

Free text comments found that advanced training, preferably with some face to face courses in the local economy or sub-region, was most often identified as the best way for APNIC to assist. This was closely followed by the idea of sharing case studies of those who had (successfully or otherwise) deployed IPv6, and facilitating knowledge sharing across and between respondents.

Promotion of the benefits of IPv6, both in general and to specific segments of the community was also frequently cited in the free text comments. Around 40% of the comments provided mentioned general promotion and / or promotion to Governments and authorities, businesses and customers.

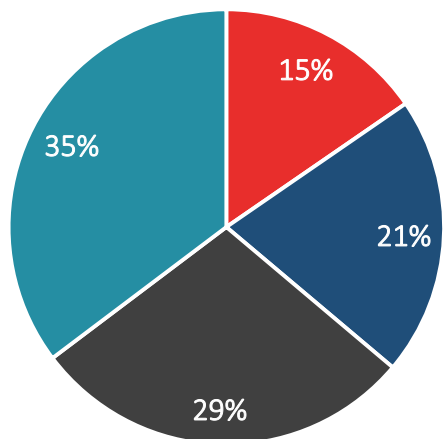
# IPv6 Deployment – Are respondents ready?

# 15%

of respondents have IPv6 fully deployed.

## Q 11 - IPv6 deployment amongst respondents

(n = 805) (Only presented to APNIC Members)



- Yes, IPv6 is fully deployed
- Yes, IPv6 is deployed in our core network
- Have a deployment plan
- No

Overall, 15% of respondents have IPv6 fully deployed, which confirms feedback in the 2016 focus groups that the transition to IPv6 had slowed with some respondents indicating there were no plans to deploy IPv6 and that they may co-exist with IPv4 and NAT for many years to come.

Respondents in East Asia and South East Asia (24%) were significantly more likely to indicate full IPv6 deployment than other sub-regions. In contrast, Oceania is the sub-region least likely to have either fully deployed IPv6 (7%) or deployed it in their core networks (17%).

Further, Oceania is significantly more likely than other sub-regions to have no plan for deployment (53%). Without further investigation the reasons are unknown, however the initial distribution of IPv4 may mean that large ISPs in this region acquired enough addresses for their foreseeable future. The free text comments from respondents in Oceania indicated that the largest ISP's were "not interested" in IPv6, that their retail and domestic routers do not support it and that they "have plenty of IPv4 left".

Twenty-six percent (26%) of LDEs have fully deployed or have IPv6 in their core networks, compared to 31% of developed and 44% of developing economies. However, 47% of LDEs have a deployment plan, while only 21% of developed and 28% of developing economies indicate that they have a deployment plan in place.

| Q 11                                      | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia |
|---|------|---------------------|----------------------|-----------|---------|-----------------|------------|
|   | 136  | 279                 | 390                  | 134       | 251     | 160             | 221        |
| Yes, IPv6 is fully deployed               | 8%   | 14%                 | 19%                  | 24%       | 7%      | 24%             | 10%        |
| Yes, IPv6 is deployed in our core network | 18%  | 17%                 | 25%                  | 28%       | 17%     | 20%             | 21%        |
| Have a deployment plan                    | 47%  | 21%                 | 28%                  | 18%       | 24%     | 33%             | 41%        |
| No  | 27%  | 48%                 | 29%                  | 31%       | 53%     | 24%             | 29%        |

Of those respondents who have a deployment plan, 32% expect it to be completed in 2017.

Eleven percent (11%) of respondents expect to complete deployment during this year, and a further 20% indicate that their deployment of IPv6 will be completed in 2018.

Expected deployment of IPv6 in 2017 was highest in LDEs (41%) and South East Asia (42%).

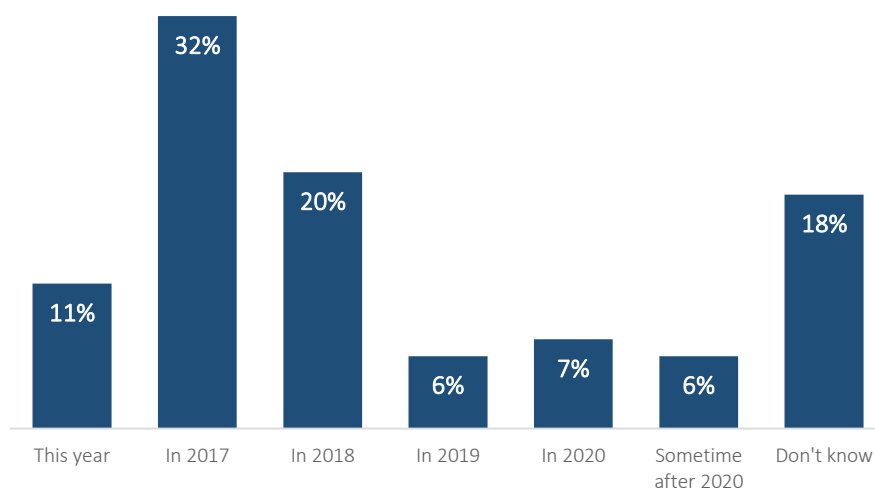
Eighteen percent (18%) of respondents did not know when IPv6 deployment would be completed, even though they indicated that they had a deployment plan in place.

This was slightly higher in East Asia and Oceania (25% and 27% respectively) where respondents indicated they had a plan, but did not know when they expected to deploy IPv6.

This again reflects focus group feedback in which many participants indicated that they were a long way off their planning targets and that the rate of IPv6 deployment had slowed.

### Q 12 - Expected IPv6 deployment / readiness

(Only asked of those respondents who indicated they "Had an IPv6 deployment plan". n=230)



| Deployment completed | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia |
|----------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|
|                      | 64   | 58                  | 108                  | 24        | 59      | 52              | 90         |
| This year            | 6%   | 16%                 | 12%                  | 4%        | 19%     | 12%             | 9%         |
| In 2017              | 41%  | 26%                 | 31%                  | 21%       | 24%     | 42%             | 36%        |
| In 2018              | 13%  | 16%                 | 27%                  | 25%       | 19%     | 23%             | 19%        |
| In 2019              | 6%   | 5%                  | 6%                   | 8%        | 2%      | 6%              | 6%         |
| In 2020              | 11%  | 5%                  | 6%                   | 8%        | 7%      | 0%              | 11%        |
| Sometime after 2020  | 9%   | 3%                  | 5%                   | 8%        | 3%      | 4%              | 8%         |
| Don't know           | 14%  | 29%                 | 15%                  | 25%       | 27%     | 13%             | 12%        |

The next question asked about the main challenges affecting the ability to deploy IPv6. Respondents were able to select up to three challenges from a list supplied.

Forty-six percent (46%) of respondents selected a lack of demand for IPv6 from customers amongst their top three challenges. This was followed by customers not being ready for IPv6 (36%). Focus group feedback supports this, with participants indicating that where IPv6 was deployed in their core network they had few or no customers. Over 40% of respondents from all sub-regions included lack of demand for IPv6 from customers among their top three challenges.

Lack of skills within the organization and no clear business or technical reasons to adopt IPv6 were two other challenges respondents thought were affecting their ability to deploy IPv6, these factors being selected by 28% and 27% of respondents respectively.

Issues mentioned in focus groups such as the lack of backward compatibility for both hardware and software and lack of IPv6 applications were also amongst the top three challenges selected by 19% of respondents.

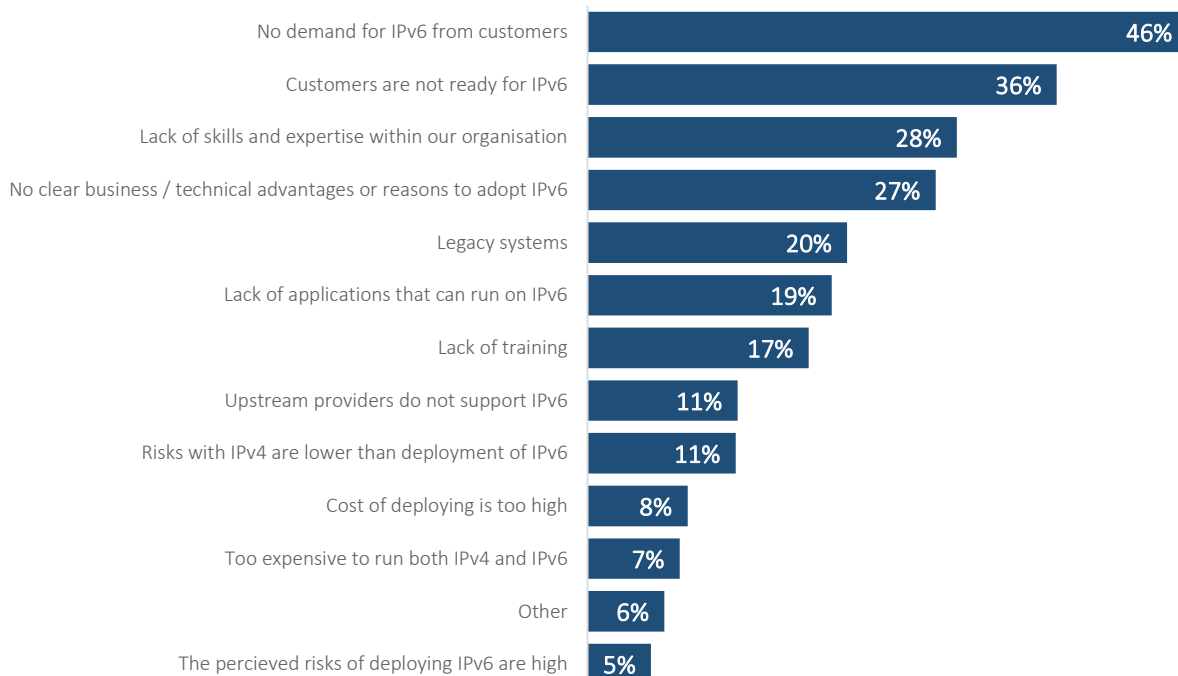
In Oceania, 36% of respondents included a lack of clear business or technical advantages and 32% that legacy systems were in the top three challenges affecting their ability to deploy IPv6. Again, comments from respondents in Oceania suggested that the largest ISP's were "not interested" in IPv6. Focus group discussions also mentioned that many had "accepted carrier grade NATs".

Respondents from LDEs were more likely to cite lack of skills within their organisation (36%) and lack of training (34%) than respondents from developed (28% and 6% respectively) or developing economies (26% and 19% respectively).

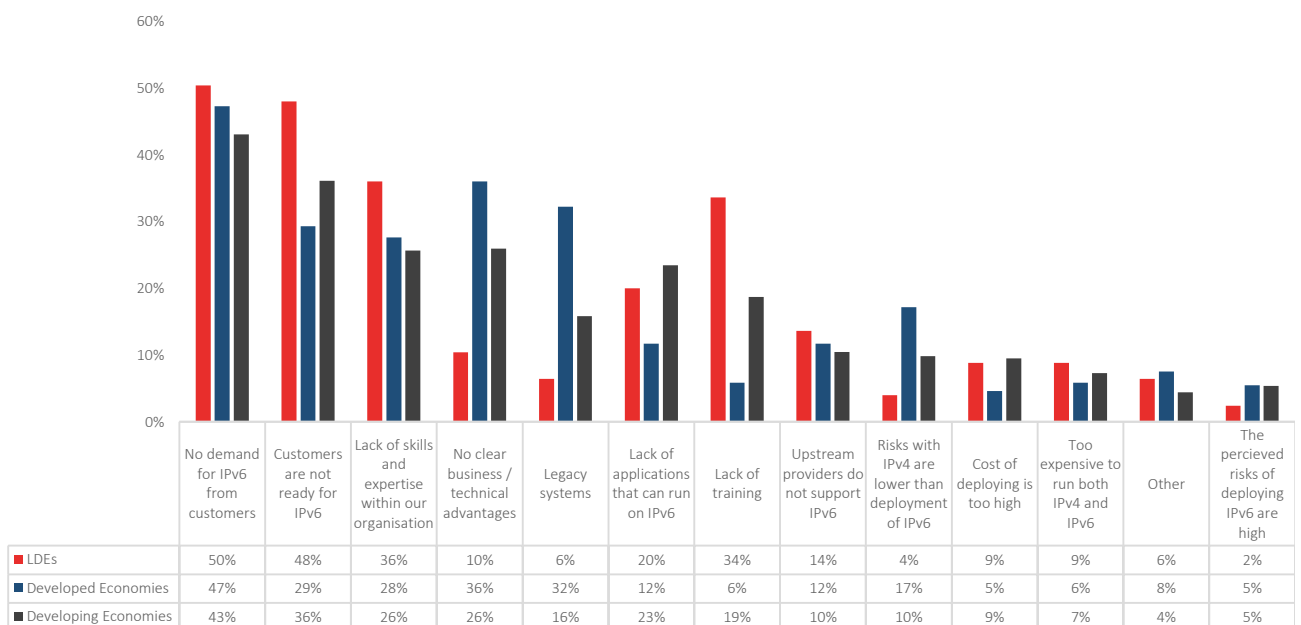
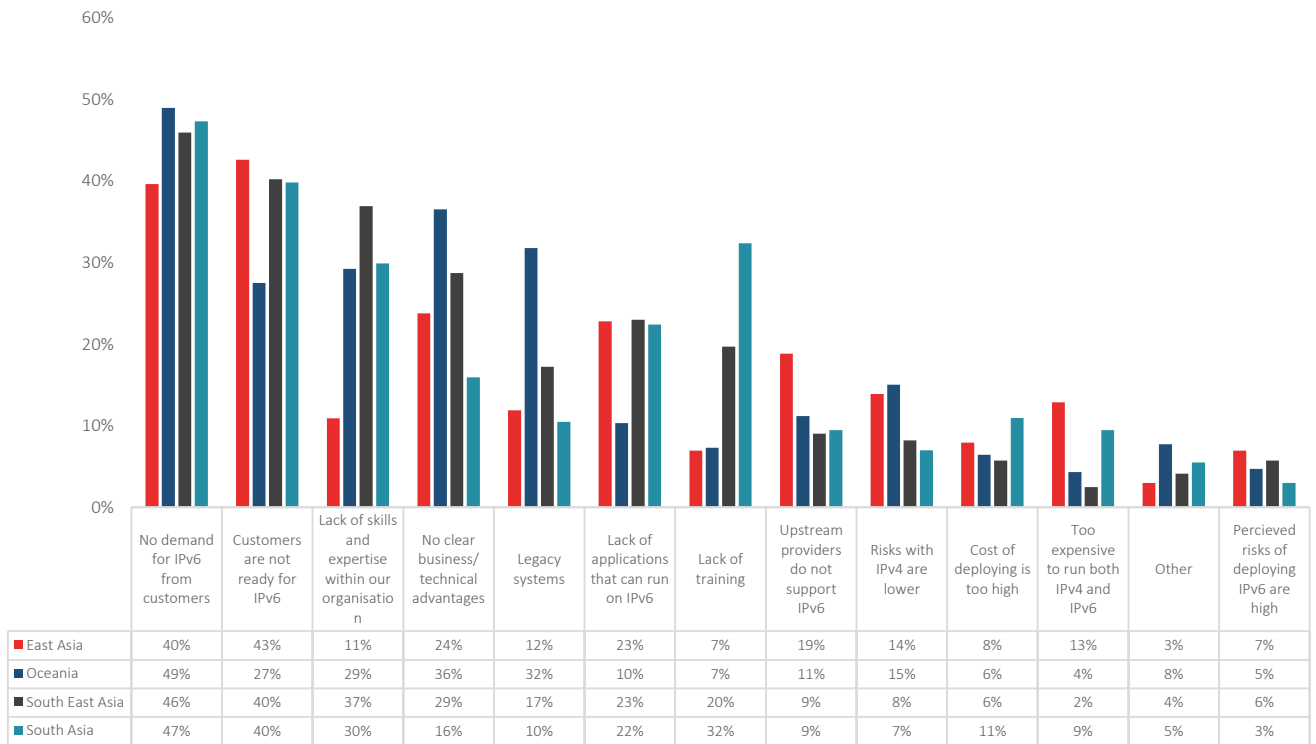
*"We are IPv6 ready but we have zero customers"*

### Q 13 - Main challenges affecting deployment of IPv6

% Respondents Selected (Base n = 680, n = 1634) (Presented to APNIC Members only)



# Main challenges affecting IPv6 deployment



# How can APNIC assist with IPv6 deployment?

## Training & Knowledge Sharing

Providing case studies and examples of best practice, advanced training in IPv6 and knowledge sharing among respondents were frequently mentioned as ways APNIC can assist the transition to IPv6 in the 2016 focus groups.

This is supported in the survey results, with these activities rating highly among respondents' selections of the most effective ways APNIC could assist the transition to IPv6.

Respondents from South (61%) and South East Asia (54%) were most likely to indicate that providing more advanced training in IPv6 is one of the most effective ways APNIC could assist the transition to IPv6. Many free text comments also indicated that "advanced training of IPv6 and use case" and "in depth training for deployment of IPv6" would be beneficial.

Facilitation of knowledge sharing among and between respondents was also seen as effective, with 31% of respondents including this in their top two selections. Respondents from South East Asia (38%) were more likely to believe this would be an effective way in which APNIC could assist with deployment of IPv6.

## Promotion of the Advantages

Promotion of the benefits of deploying IPv6 was a common topic of discussion in the 2016 focus groups, where many participants expressed concern that deployment across the region had slowed.

There was also support for APNIC taking a role in promoting the benefits of IPv6 to both customers and management or decision makers amongst survey respondents, with 38% and 39% respectively including these options in the most effective ways APNIC can assist respondents.

Free text feedback supported this, with comments indicating that APNIC will need to "deliver a clear message on it's advantages", and some comments particularly suggesting presentations and seminars "with management level participants."

Only 4% of respondents think that APNIC should take no action to assist with IPv6 deployment, a strong indication that respondents think APNIC has a significant role to play in this area, although this rises to 7% from developed economies.

Reflecting the outcomes from the focus groups, respondents thought that providing case studies, best practice examples and more advanced training were the most effective ways that APNIC could assist the transition or deployment of IPv6.

## Q 14 - Most effective ways APNIC can assist organisations transition to or deploy IPv6

% Respondents Selected, (Base n = 676, n = 1701) (Presented to APNIC Members only)

|  | Total | East Asia | Oceania | South East Asia | South Asia |
|--|-------|-----------|---------|-----------------|------------|
| Sample Size  | 676   | 99        | 233     | 122             | 200        |
| Total Mentions   | 1701  | 223       | 568     | 328             | 531        |
| Provide case studies and best current practices about IPv6                               | 49%   | 46%       | 46%     | 59%             | 48%        |
| Provide more advanced training in IPv6   | 46%   | 38%       | 35%     | 54%             | 61%        |
| Promote the benefits of IPv6 to management and/or decision makers                        | 39%   | 34%       | 42%     | 41%             | 35%        |
| Promote the benefits of IPv6 to customers/consumers                                      | 38%   | 31%       | 36%     | 39%             | 40%        |
| Facilitate knowledge sharing between member organisations on IPv6 deployment experiences | 31%   | 24%       | 30%     | 38%             | 33%        |
| Promote the advantages of IPv6 to hardware, software and/or content providers            | 24%   | 20%       | 25%     | 20%             | 29%        |
| Promote the advantages of IPv6 to government and related organisations                   | 20%   | 23%       | 21%     | 16%             | 21%        |
| APNIC should take no action to promote or assist with the deployment of IPv6             | 4%    | 7%        | 6%      | 1%              | 1%         |

Respondents were also asked to say in their own words how they think APNIC can assist them to transition or deploy IPv6.

There were many suggestions, predominantly for training

*"Held more training course for IPv6's deployment." South East Asia*

*"Giving more learning tools and training materials." South Asia*

*"Constantly training of ipv6 deployment, more training meeting and technology exchange meeting, provides more ipv6 training ppt, information materials and newest ipv6 technology applications." East Asia*

Many respondents suggested that APNIC provide case studies and facilitate knowledge sharing in the sub-region

*"APNIC is doing an outstanding job promoting of deployment of IPv6. I suggest more of effective case studies should be discussed on events with more audience from government regulatory and key decision makers." South Asia*

*"APNIC should take a leading role in the sub-region to facilitate and assist all respondents to migrate to IPv6 ASAP by providing specialised professional services and facilitate meetings between those deployed and those still planning." Oceania*

Many respondents suggested APNIC assist with promotion of the benefits of IPv6 to customers and decision makers

*"APNIC to encourage members (ISP's) to start deploying IPv6 to its customers." Oceania*

*"...2nd, I suggest APNIC to do a presentation on advantages on IPv6 to my management and decision maker." South East Asia*


*"IPv4 provides for all our requirements, we have no real reason to change so APNIC will need to deliver a clear message on it's advantages for us to put in the effort." Oceania*

*"More seminars in sub-regions with management level participants." South Asia*

There was also mention that there was nothing that APNIC could do:

*"My own feeling on all of this is that IPv6 will only see wide adoption when IPv4 is truly exhausted. IPv6's use of hex numbers make it unwieldy and unapproachable for most of the general public. Apologies about my pessimism however I think the human friendliness of IPv6 has been greatly under considered and this should serve as a lesson to the development of future standards (eg. IPv7)." Oceania*



A nighttime photograph of a city skyline with several illuminated skyscrapers. A large, semi-transparent red rectangle is overlaid on the center of the image, containing white text. The city lights are reflected in a body of water in the foreground.

“I believe APNIC should be one to lead and drive this transition for the region.”



# Training

# Training demand is strong... but many respondents want local, more advanced technical services.

One of the objectives of APNIC is to provide training and educational opportunities that helps improve respondents' technical knowledge, skills and understanding of policies.

Focus group sessions found that demand for training services was strong and feedback in the online survey confirmed this. Eighty-three percent (83%) of respondents agree that training is an important APNIC function. Yet only 20% of respondents indicated that they had attended an APNIC training course over the last twelve months.

.....

While only used by 22% of all respondents over the last two years, most respondents believe that training is an important function of APNIC.

.....

Analysis of the feedback provided by respondents in their own words indicates that low use is most likely a function of location and cost. When asked about the services that could be delivered locally, respondents overwhelmingly mentioned training. Training cost was also mentioned as a barrier to attendance.

To understand satisfaction with current training services, respondents who had used APNIC training were asked to rate the quality of the training provided. Ninety percent (90%) of respondents provided a positive rating of five or higher that APNIC training is relevant and useful, with 86% agreeing in some form that sessions were provided in a suitable format.

There were suggestions for improvement provided both in focus groups and in the free text comments provided by respondents. These included more face-to-face training, accredited training courses, delivery in local language and training conducted in-country or sub-region. Calls for more technical training were common. Many comments indicated that training should be more advanced and detailed, and that case studies would be beneficial.

Eighty percent (80%) of respondents provided a positive rating that APNIC training represents value for money, however, focus groups and respondent comments provided indicate that lower training fees are important in some economies. There was strong support for the idea of providing subsidies for training where necessary, particularly in LDEs where 92% agreed APNIC should subsidise training. A majority of respondents (72%) support the concept of seeking additional, external funding sources to help build its technical training.

Training topics that address the major challenges identified by respondents, those of security and IPv6 implementation, were most frequently mentioned as providing value. This confirms focus group discussions where respondents requested training in topics such as Quality of Service (QoS), prevention of Distributed Denial of Service attacks (DDoS) and more advanced courses in IPv6 and routing. It also confirms the findings in the recent APNIC Training Survey where network security and IPv6 were the most important training topics respondents thought APNIC could offer.



Demand for local language training and support is strong, and more advanced technical training on network security and IPv6 implementation planning are the topics that would provide Member organisations with most benefit.

# The importance of training

In this part of the survey, respondents were asked to indicate if they agreed that training is an important function of APNIC, whether training should be responsive to Member needs and whether subsidies should be offered to increase affordability. Responses were provided on a seven point scale, from Strongly disagree to Strongly agree.

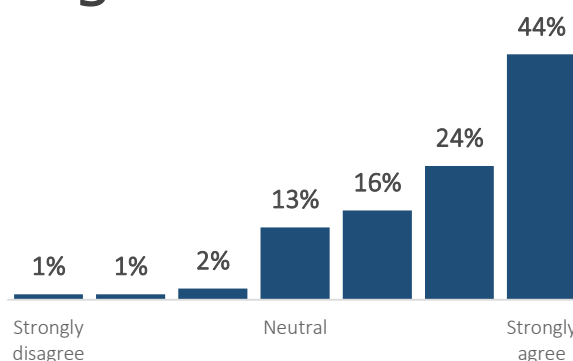
Eighty-three percent (83%) of respondents indicated that the provision of training services is an important APNIC function. Training services are considered significantly more important by respondents in LDEs (93%) and South Asia (92%). This may reflect a lack of local alternatives and the greater reliance of these respondents on the services offered by APNIC.

Respondents from developed economies and East Asia were less likely to agree that training was an important APNIC function.

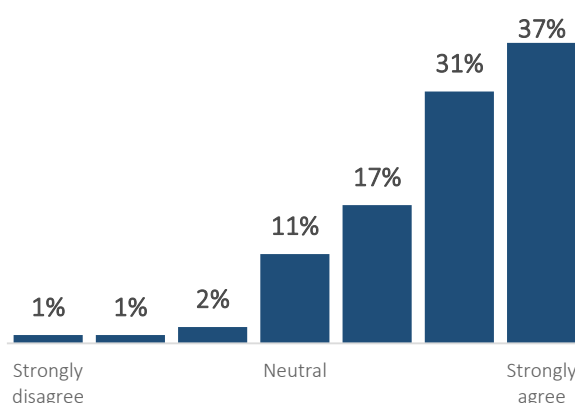
A majority of respondents (85%) also agreed that APNIC training should be responsive to Member requests and needs. Respondents in South East Asia were significantly more likely to support this than respondents in East Asia and Oceania.

Eighty percent (80%) of respondents also agreed that APNIC should subsidise training to increase affordability where necessary. There were significant differences in agreement between respondents from different economy types. Developed economies were much less likely to support subsidised training (69%), compared to 93% in LDEs and 82% in developing economies.

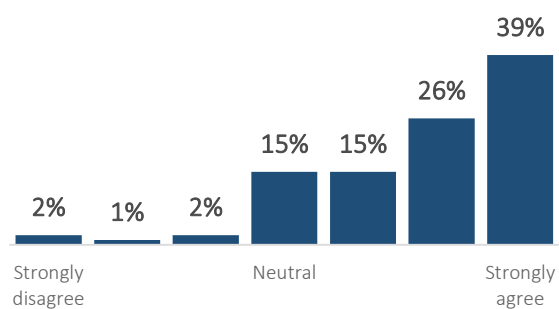
*“To a developed country the fees do not look big but it is often approaching a monthly salary here ...”*



Q 31 - The provision of training is an important function of APNIC



Q 31 - Training offered should be responsive to Member needs



Q31 - APNIC should subsidise training where necessary

Note: Figures may not sum to 100 due to rounding

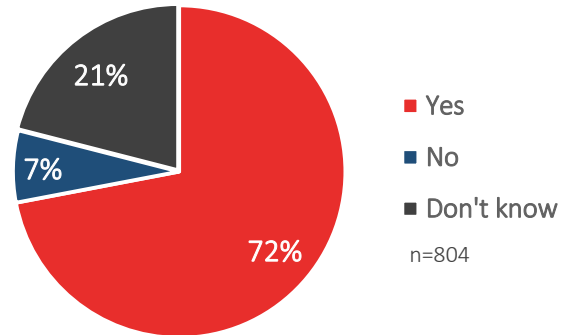
| Q 31  | Total | LDEs | Developed | Developing | East Asia | Oceania | South East Asia | South Asia |
|---|-------|------|-----------|------------|-----------|---------|-----------------|------------|
|   | 797   | 134  | 277       | 386        | 131       | 249     | 159             | 219        |
| The provision of training is an important function of APNIC                 | 5.87  | 6.43 | 5.48      | 5.96       | 5.44      | 5.58    | 6.03            | 6.38       |
| Standard deviation  | 1.32  | 0.98 | 1.35      | 1.31       | 1.52      | 1.35    | 1.10            | 1.10       |
| Training offered by APNIC should be responsive to Member requests and needs | 5.85  | 6.31 | 5.56      | 5.91       | 5.34      | 5.62    | 6.13            | 6.20       |
| Standard deviation  | 1.21  | 1.00 | 1.24      | 1.20       | 1.36      | 1.24    | 0.97            | 1.10       |
| APNIC should subsidise training to increase affordability where necessary   | 5.73  | 6.40 | 5.18      | 5.91       | 5.38      | 5.33    | 6.04            | 6.28       |
| Standard deviation  | 1.39  | 0.97 | 1.43      | 1.34       | 1.50      | 1.44    | 1.10            | 1.16       |

# External resources for training and participation

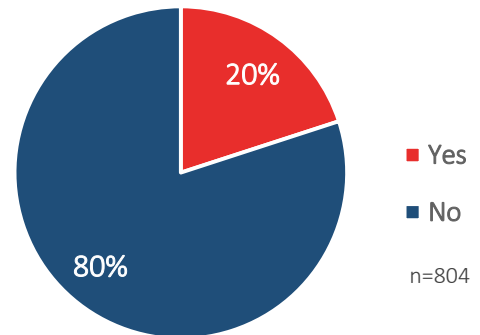
A majority of respondents (72%) believe that APNIC should seek additional external resources to help build its training and technical assistance services. Again, broadening the funding base was more strongly supported by respondents in LDE's and developing economies (85% and 75% respectively).

Respondents from South and South East Asia were also more likely to support the idea of seeking additional external resource to help build training and technical assistance (81% and 80% respectively) than those from East Asia (68%) and Oceania (64%).

A total of one hundred and fifty seven (157) respondents indicated that they had undertaken APNIC training over the last twelve months, or 20% of respondents. Participation was highest amongst respondents in LDEs with 32% indicating they had attended a training course in the past twelve months, while only 8% of respondents from developed economies had taken part in APNIC training.



Q 32 - To reduce reliance on Member funds, should APNIC seek additional external resources to help build its training and technical assistance?



Q 33 - Have you undertaken training in the last twelve months?

**72%**

of respondents agree APNIC should seek additional external resources to build training and technical assistance services



# Training assessment

Those respondents who had taken part in APNIC training were asked to rate the quality of the training provided. Responses were provided on a seven point scale, from Strongly disagree to Strongly agree.

Of respondents who had used APNIC training services, 90% rated the training programs as relevant and useful. Respondents in South Asia and Oceania were significantly more likely than their East Asian counterparts to find APNIC training relevant and useful.

Eighty-six percent (86%) of respondents agreed the training programs were provided in a suitable format.

When asked about value, 81% of respondents provided a rating of five or higher that APNIC training programs represent value for money. Respondents in Oceania were most likely to agree that training programs provide value for money, particularly when compared to respondents from East Asia.

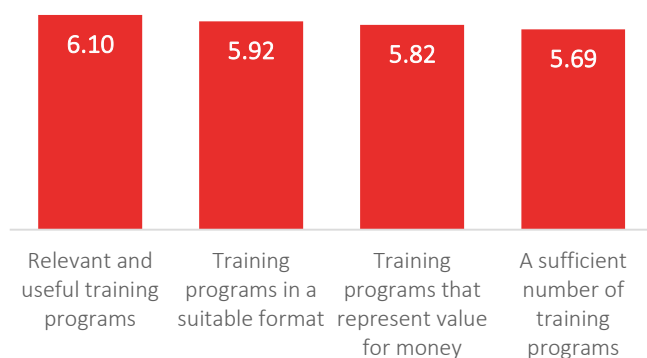
It is also worth noting that respondents ratings of value have improved since 2014, with the mean score for value for money increasing from 5.20 in 2014 to 5.82 in 2016.

The lowest level of satisfaction was with the number of training programs offered, with fewer respondents agreeing that APNIC offers a sufficient number of training programs.

*“APNIC can conduct more sub-regional trainings as we have only very few of those in our sub-region.”*

## Q 34 - Respondents ratings of APNIC Training Services

Mean Score, (n = 157)

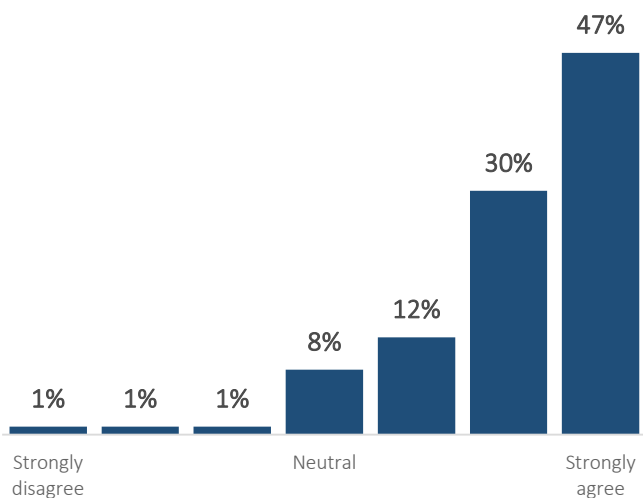


|  | LDEs | Developed | Developing | East Asia | Oceania | South East Asia | South Asia |
|--|------|-----------|------------|-----------|---------|-----------------|------------|
| * Please note small sample sizes                 | 43   | 21        | 92         | 33        | 27      | 43              | 51         |
| Relevant and useful training programs            | 6.37 | 6.10      | 5.97       | 5.39      | 6.26    | 6.16            | 6.37       |
| Training programs in a suitable format           | 6.30 | 5.71      | 5.79       | 5.28      | 5.96    | 6.14            | 6.12       |
| Training programs that represent value for money | 6.07 | 6.05      | 5.65       | 5.39      | 6.15    | 5.79            | 5.94       |
| A sufficient number of training programs         | 6.07 | 5.52      | 5.55       | 5.34      | 5.70    | 5.65            | 5.90       |

# Training assessment

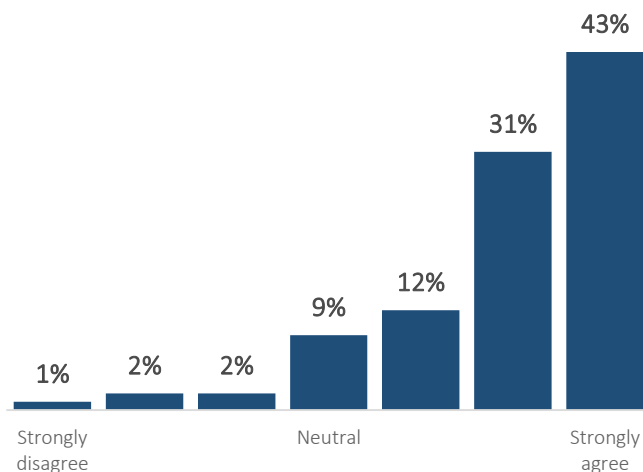
## Relevant and useful training programs

N=157



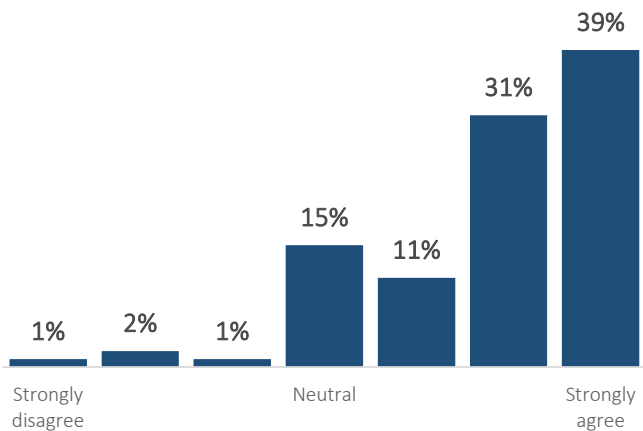
## Training programs in a suitable format

N=157



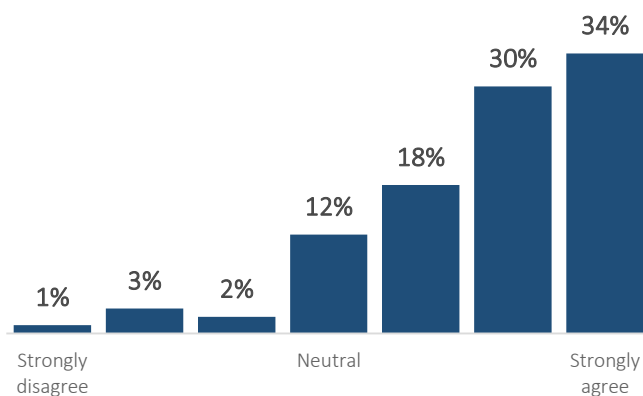
## Training programs that represent value for money

N=157



## A sufficient number of training programs

N=157



Note: Figures may not sum to 100 due to rounding

# Training topics

The last question in this part of the survey asked about the training topics that would be of most value to Member organisations. Respondents were able to choose all of the topics that would assist their organisation.

The most commonly selected topic for potential APNIC training was network security. Seventy percent (70%) of respondents indicated that APNIC training focused on network security would assist their organisation.

## Q 35 - Training Topics of most interest to respondents

% Respondents Selected (base n = 799, n = 4382)  
(Presented to APNIC Members only)

| Training Topics   | Respondents |
|---|-------------|
| Sample Size   | 799         |
| Network security  | 70%         |
| IPv6 deployment planning  | 55%         |
| Routing protocols (BGP, OSPF/IS-IS etc.)  | 45%         |
| Optimizing network architecture   | 43%         |
| DNS and DNSSEC  | 41%         |
| Software Defined Networking (SDN)   | 41%         |
| Virtualization of network functions and/or services                                       | 36%         |
| MPLS  | 34%         |
| Best practices for inter-domain routing   | 33%         |
| QoS   | 32%         |
| Incident handling and response  | 23%         |
| RPSL and Routing Registry   | 22%         |
| IXP design, operation and management  | 20%         |
| CERT/CSIRT operation and management   | 18%         |
| Training of trainers in any of the topics listed here                                     | 16%         |
| RPKI  | 15%         |
| None of these – my organization does not require training or technical support from APNIC | 4%          |
| Other (please specify)  | 1%          |


This confirms the earlier feedback; when asked how APNIC could assist with challenges many comments indicated that training on “best practises in terms of security” would be helpful. Respondents in LDEs were particularly interested in network security training, with 85% indicating it would be of benefit.

More than half (55%) of respondents also indicated that training focused on IPv6 deployment planning would help their organisation, and this was supported by suggestions provided in free text comments. Respondents suggested that “APNIC should have advanced training of IPV6” and that they “need some good training on IPV6 and best practices while deploying IPV6”. There were also comments that “presenting test cases” would help. The recent APNIC Training Survey also found IPv6 training to be the second most important training topic.

Respondents in LDEs (65%) and South Asia (69%) were the most interested in training on IPv6 deployment planning. Respondents from East Asia were significantly less likely than respondents from other sub-regions to indicate that training in IPv6 deployment planning would assist their organisation.

*“APNIC should provide us more training for network security and IPv6 deployment.”*



A nighttime photograph of a city skyline, likely Dubai, with numerous skyscrapers illuminated. A large, semi-transparent red rectangle is overlaid on the upper half of the image, containing white text. The background shows a dark sky with some clouds and a bright light source on the left side, possibly the sun or moon, creating a lens flare effect.

“Focus on local (technical and non-technical) training, Internet awareness and IPv6 adoption”



# Policy Development

# Policy Development Process

This part of the survey looked at respondents' opinions and experiences of the APNIC Policy Development Process for Internet Number Resources.

A significant amount of feedback was provided by respondents, with the majority providing reasons why they did not participate in the Process. A total of forty eight (48) respondents indicated that they had participated in the APNIC Policy Development Process over the last two years. The remaining 1,121 were asked why they had not taken part, using a quantitative question and by providing feedback in their own words.

Thirty six percent (36%) of respondents indicated that they did not participate because they "trust the community to develop the right policies". In the words of one respondent "I believe there are experts who are taking good care of it." Another suggested they were "not confident enough about my technical knowledge to provide proper input."

Forty-five percent (45%) of respondents indicated that they "don't know enough about the process", 32% were unaware they could participate and 22% suggested they did not take part because they hadn't been asked.

Respondents were asked in their own words what APNIC could do to encourage participation. Many respondents' suggested that APNIC should "share information about the process" and "send specific communication on the subject with details of the process" to raise awareness and encourage more people to take part. One respondent simply said that APNIC should "just invite me".

Other respondents suggested that making "the process available for online participation" may encourage greater involvement, while others indicated that language barriers and lack of knowledge stopped them from participating.

Only 2% of respondents indicated they were not interested in participating, supporting the feedback throughout the survey about collaboration and facilitation of information sharing.

*"Provide more information on what is involved and how to participate."*

## Q 37 - Reasons for Non-Participation in APNIC Policy Development Process for Internet Number Resource Policies

% Respondents Selected (base n = 1121, n = 1889)

|   | Total | Member | Stakeholder | East Asia | Oceania | South East Asia | South Asia |
|---|-------|--------|-------------|-----------|---------|-----------------|------------|
| Sample Size   | 1,121 | 773    | 348         | 251       | 217     | 244             | 304        |
| I don't know enough about the process               | 45%   | 45%    | 44%         | 37%       | 48%     | 50%             | 49%        |
| I trust the community to develop the right policies | 36%   | 35%    | 39%         | 41%       | 27%     | 37%             | 39%        |
| I wasn't aware I could participate                  | 32%   | 34%    | 26%         | 19%       | 37%     | 26%             | 44%        |
| No one has asked me to participate                  | 22%   | 22%    | 23%         | 17%       | 26%     | 23%             | 23%        |
| I don't have time to participate                    | 18%   | 21%    | 11%         | 23%       | 26%     | 16%             | 5%         |
| It's too difficult to participate in the process    | 10%   | 11%    | 8%          | 17%       | 6%      | 9%              | 10%        |
| Other   | 3%    | 3%     | 4%          | 2%        | 3%      | 5%              | 3%         |
| I'm not interested in participating                 | 2%    | 2%     | 2%          | 4%        | 3%      | 2%              | 0%         |

Unlike the 2014 Survey, only those respondents who indicated that they had participated in the APNIC Policy Development Process were asked to provide their experience of the process. Ratings were provided on a seven point scale, from Poor to Excellent.

While the number of respondents participating in the Process was very low, those who did provided more positive feedback about all aspects of their involvement than in 2014.\*

Respondents rated the ‘ease of understanding’ of the discussions more positively than other aspects, with 81% of respondents providing a rating higher than neutral.

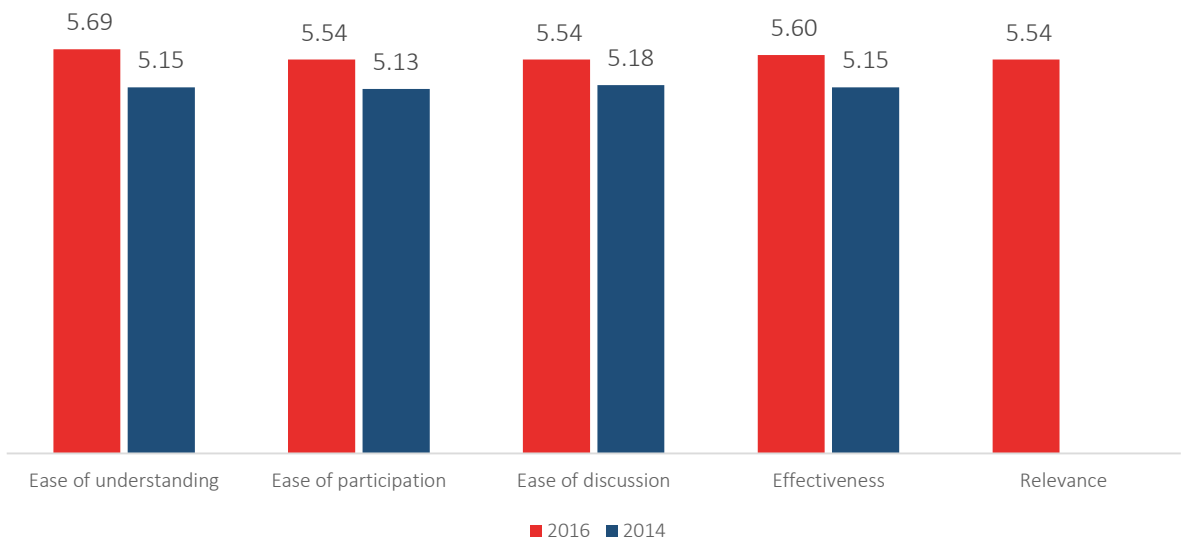
Relevance of the APNIC Policy Development Process to their organisation (77%) was least likely to be rated as a 5, 6 or 7 out of seven.

Because of the low number of responses all of the feedback from respondents about taking part in the Policy Development Process should be seen as suggestive only.

While the number of respondents who participated in the Policy Development Process was very low, those who did provided more positive feedback about their involvement than in 2014.


**Q 39 - Respondents Ratings of the APNIC Policy Development Process for Internet Number Resource Policies**

Mean Score (n = 48) (Presented to respondents who indicated they had participated in the process)



\*n = 48 Please note the small size of the sample which can result in greater variability in mean score results..



A nighttime cityscape featuring a dense cluster of illuminated skyscrapers along a waterfront. The buildings are lit with various colors, including blue, yellow, and red. The lights reflect on the water in the foreground. Overlaid on the scene are several glowing white arcs that sweep across the dark blue sky. A large, semi-transparent red rectangle is positioned in the upper left, containing white text.

“Make the Member aware of the scope and importance of policy development and how much time and effort will it entail.”

Respondents were also asked what they thought APNIC could do to encourage greater participation in the APNIC Policy Development Process for Internet Number Resource policies.

Respondents indicated that awareness campaigns that informed respondents about the process were necessary.

*"APNIC can organize online session for creating awareness on Policy Deployment Process."* South Asia

*"APNIC must announce about the event so many people can participate"* Oceania

*"APNIC should socialize the importance of the Policy Development Process to all Stakeholder."* South East Asia

*"Awareness building among local communities for participating in the policy development process."* South Asia

*"Broadcast or spread this type of news/events not only in website, but also in Social media like Facebook, LinkedIn etc."* South Asia

*"Provide more information on what is involved and how to participate."* Oceania

Other respondents suggested APNIC should invite participation.

*"APNIC could invite me then I could join. ."* South Asia

*"Nothing just invite me and I will participate ?"* South Asia

*"I would like to be actively involved in the region in APNIC's activities, can you please have me onboard?"* South Asia

*"Just invite me "* South East Asia

Several comments from respondents indicated they did not know anything about the Policy Development Process

*"I do not have much knowledge on Policy Development Process "* South Asia

*"I don't know clearly about this process. Please give me some materials or guideline about this process."* South East Asia



# Resource Allocation, External Relations & New Services

# APNIC resource allocation

To understand respondents’ priorities for APNIC service delivery, they were asked to provide their opinions about budget allocation to each of three broad strategic activities.

With 20% of the budget allocated to Corporate Operations, respondents were asked to provide their opinion on the distribution of the remaining 80%, across three categories: Serving Members, Regional development and outreach and Global cooperation.

On average, respondents indicated that 33% of the budget should be allocated to serving Members, 27% to Regional development and outreach activities and 20% to Global cooperation.

Standard deviations should be noted as they provide an indication of the variability of respondents answers to this question.

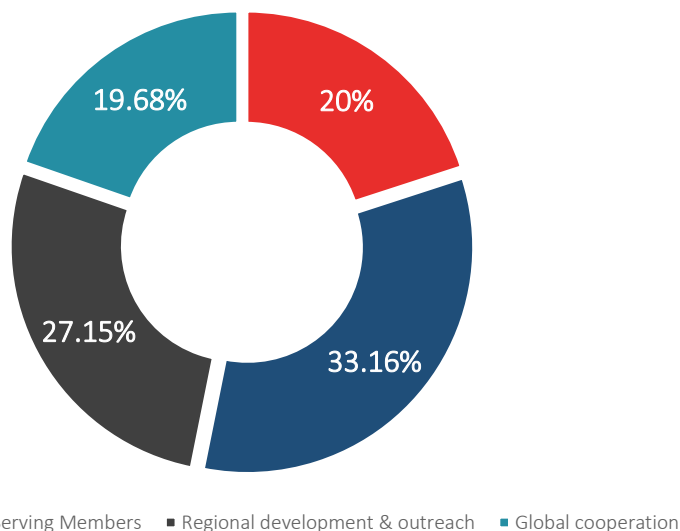
While preferences across sub-regions and development status’ are mostly the same, there appears to be a preference among respondents in LDEs to allocate a larger percentage, on average, of the APNIC budget to Regional development and outreach activities and less to serving Members.

Respondents in developing economies are likely to indicate, on average, that a slightly larger percentage of the budget should go towards Regional development and outreach activities.

Respondents in developed economies, East Asia and Oceania were more likely to allocate a larger percentage of budget funds to serving Members

## Q 21 - Percentage of the total budget respondents think should be allocated to strategic activities.

(n = 806) (Presented to APNIC Members only)



|  | LDEs  | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia |
|--|-------|---------------------|----------------------|-----------|---------|-----------------|------------|
| <b>Serving Members</b>                     |       |                     |                      |           |         |                 |            |
| Mean                                       | 31.41 | 35.73               | 31.94                | 35.57     | 35.70   | 31.37           | 29.71      |
| Std. Dev.                                  | 14.56 | 13.78               | 14.15                | 15.14     | 14.02   | 13.90           | 13.30      |
| <b>Regional development &amp; outreach</b> |       |                     |                      |           |         |                 |            |
| Mean                                       | 29.39 | 24.95               | 27.95                | 25.60     | 25.85   | 27.04           | 30.05      |
| Std. Dev.                                  | 11.99 | 10.86               | 10.85                | 10.83     | 11.48   | 10.84           | 11.06      |
| <b>Global cooperation</b>                  |       |                     |                      |           |         |                 |            |
| Mean                                       | 19.20 | 19.32               | 20.12                | 18.84     | 18.45   | 21.59           | 20.24      |
| Std. Dev.                                  | 12.06 | 10.18               | 11.57                | 11.35     | 10.09   | 12.80           | 11.16      |



# Member Services: Establishing a local presence

There was support for the establishment of local APNIC offices or agencies, in particular in South Asia and LDEs.

Participants in focus groups indicated that ‘having a local support person would add great value’. Providing effective training, lower training costs, expanding in-country outreach and having a local ‘go to’ person were seen as ways in which APNIC could assist with capacity building.

To test this, respondents in economies that do not have an NIR were asked if they think it is important that APNIC establish an office or agency that could deliver some services locally in their economy. Responses were provided on a seven point scale, from Not at all important to Extremely important.

Overall, there was support for the idea of establishing local offices or agencies to deliver services. Sixty-one percent (61%) rated the idea as a 5, 6 or 7 out of seven.

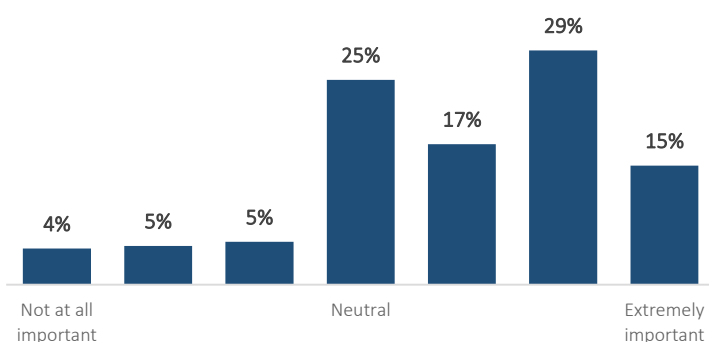
Support for a local presence to service their needs was strongest amongst respondents from the LDEs. Seventy-six percent (76%) of respondents from LDEs indicated a local presence provided varying degrees of importance to them. This compares to 45% from developed economies.

When asked to explain in their own words what services they believed APNIC could deliver locally, a number of respondents suggested training. While the majority of responses made general references to training provision, a number also specifically mentioned IPv6 education and security related training. Others mentioned the benefits of “suitable training time and lower cost” .

Local consultancy, communication with respondents, technical support and awareness programs were also mentioned.

When asked for more general comments about local service delivery, suggestions included webinars, conferences and meetings locally or in the local time zone would be good, and that local representatives would better understand local issues.

However, some respondents felt that a local presence was not really necessary, with several mentions that it would be odd - “a provider of Internet-related services shouldn't require a physical presence”.



*“You just need a bridge. Having a local speaker on staff would not really help - it is someone on the ground that is important. It is a different mind set and there is a different order to doing things.”*

## Q 26 - Respondents ratings of importance of establishing local APNIC offices or agencies to deliver some services locally.

(n=610)

(Not presented if Respondent from China, People's Republic of Korea, India, Indonesia, Republic of Korea, Japan, Taiwan, Vietnam)

|                    | LDE's | Developed | Developing | East Asia | Oceania | South East Asia | South Asia |
|--------------------|-------|-----------|------------|-----------|---------|-----------------|------------|
| Sample             | 136   | 265       | 209        | 44        | 251     | 138             | 138        |
| Mean               | 5.57  | 4.30      | 5.23       | 4.84      | 4.46    | 5.27            | 5.73       |
| Standard Deviation | 1.48  | 1.57      | 1.34       | 1.16      | 1.51    | 1.33            | 1.42       |

Respondents were also asked what services they thought APNIC could deliver locally.

Respondents suggestions included local training, networking and local knowledge sharing and collaboration sessions

*“Advance training and workshop (hands-on).” South East Asia*

*“Training about new Internet technology” South East Asia*

*“More trainings for companies and lower down the cost of trainings.” South East Asia*

*“Training classes, seminars and community sharing sessions.” South East Asia*

*“More frequent collaboration, laboratory trainings and IT Security awareness programs.” South East Asia*

*“Face to face training” Oceania*

Many suggestions were for specific IPv6, security or technical training

*“Courses and training for Network Awareness, Network Best Practices, IPv6 and Internet Landscape.” South East Asia*

*“IPv6 education” Oceania*

Local workshops, seminars, meetings and consultations were also mentioned.

*“Local community event, exchange and seminars.” South East Asia*

*“We need more APNIC regional meeting” South Asia*

# Collecting regional industry data

It was suggested during focus group discussions that, as an independent source of regional information, APNIC is in a position to facilitate information collection and sharing.

APNIC has received suggestions from previous surveys and focus groups that it could assist with the collection of data on trend and benchmarks for regional Internet, infrastructure and related technical and business activities.

To test wider interest in this idea the survey asked respondents if they (or their organisation) would be interested in contributing to data in order to develop trend and benchmark information.

Forty-three percent (43%) of respondents expressed an interest in being involved and contributing data to build regional trend and benchmark information. There was mention that the initiative would “bring the sharing of best practices into the forefront of APNIC Member services”

Another 37% indicated they wanted more information before deciding. Only 7% of respondents were not interested in contributing, while 13% either didn't know or did not make the decision.

Comments suggest that privacy concerns are the main reason for those who wanted more information, and these provide guidance for APNIC for future discussions. It was suggested that “some information/data cannot be given due to confidentiality agreements as well as security issues” and that it would need to be known “how this information is used before releasing to APNIC”.

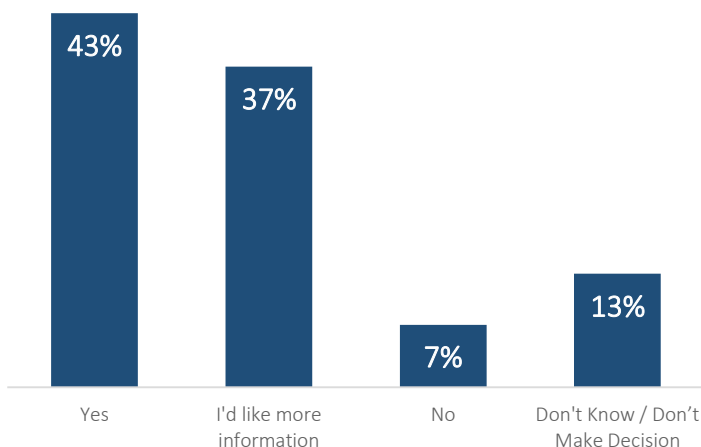
When analysed from a sub-regional perspective, respondents in South Asia were the most likely to indicate that they would be willing to participate with 61% providing positive support.

Oceania respondents were least likely to be willing to contribute, with only 29% indicating they or their organisation would be willing to participate. However, 41% of respondents in Oceania indicated they would need more information to make a decision on whether to be involved, with references within the free text comments to security of shared data and privacy concerns. This may be reflective of the stringent privacy framework in place in some economies within the Oceania sub-region.


LDEs were more likely to indicate a willingness to provide data to build trend and benchmark information, suggesting that such initiatives may be of more value to these organisations. Sixty seven percent (67%) of respondents from LDEs agreed that they would participate, compared to only 26% from developed economies.

## Q 24 - Interest in contributing to trend and benchmark information

(n = 798) (Presented to APNIC Members only)



43% of respondents are willing to contribute to trend and benchmark data.



“I am not against it in principle. I would need to be sure that information provided could not be used in a manner detrimental to our own operations and/or customers (i.e. privacy and anonymity would have to be completely water-tight!) ”

# Global cooperation & external relations

As in 2014, respondents were asked to indicate which other organisations, groups and communities APNIC should focus its external relations activities on. Respondents were asked to rate the amount of focus APNIC should provide to each organisation type, on a seven point scale from Least focus to Most focus. To allow comparison to 2014, mean scores showing the average level of focus respondents suggest should be dedicated to each group are shown below.

Feedback remained relatively consistent with 2014. While there was a change in the order of priority, the top three groups respondents rated as most important for APNIC to focus on were Network Operator Groups (NOGs), Asia Pacific and Global Internet technical organisations.

Eighty percent (80%) suggested that APNIC should focus its external relations efforts on NOGs. Respondents in LDEs (88%) and South Asia (86%) provided the strongest support for a focus on NOGs.

This supports focus group feedback that capacity building and development activities, such as assistance to NOGs was important to aid Internet development in the region.

Collaboration with other RIRs, national agencies and Internet organisations to assist with cyber crime was another common thread in focus group discussions and this is reflected in the survey findings.

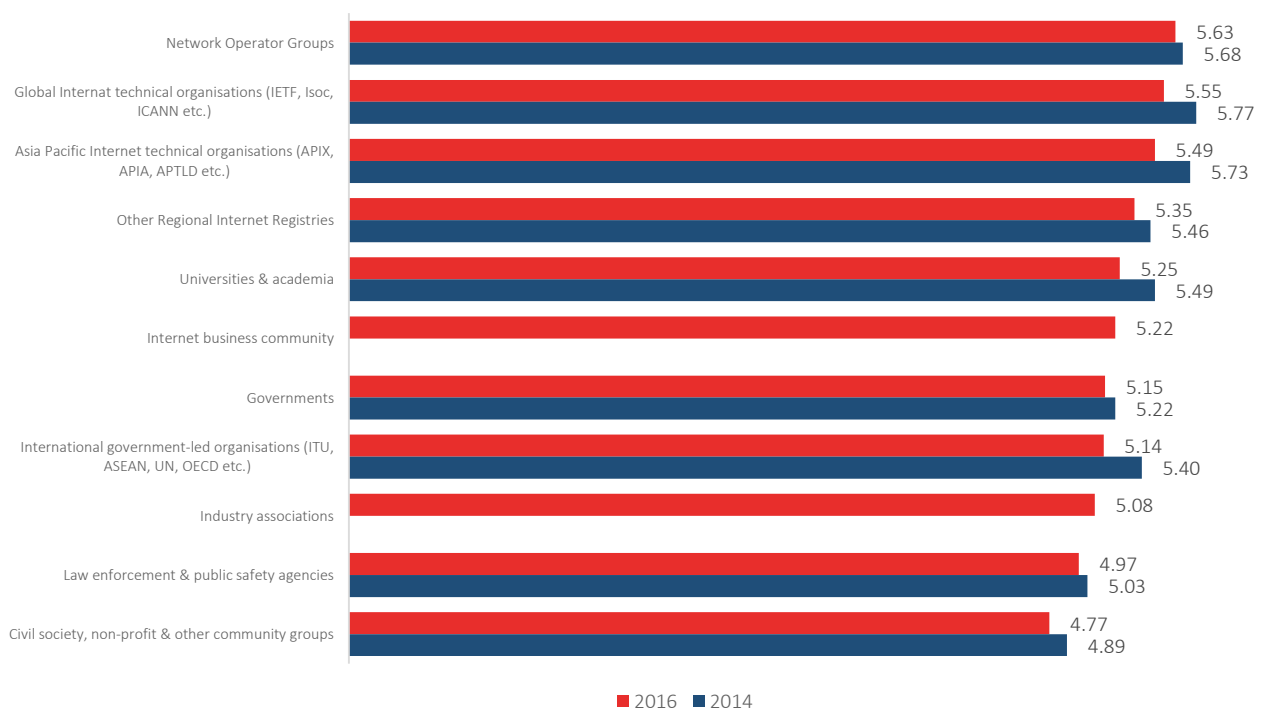
Overall, respondents also supported an external relations focus on Asia Pacific (76%) and global Internet (78%) technical organisations. Seventy-one percent (71%) also suggested focus should be placed on relationships with other RIRs.

Respondents in LDEs were significantly more likely to indicate that APNIC should dedicate most focus on Asia Pacific Internet technical organisations than respondents in developed economies.

Fewer respondents suggested that APNIC should focus on civil society groups, law enforcement agencies or industry associations.

## Q 29 - External relations focus.

Mean scores (n = 1,137) (Presented to all respondents)







# Member Engagement

# This final section of the report looks at some of the more intangible aspects of APNIC Membership.

After investigating APNIC services and strategic priorities, this part of the survey looked at how respondents feel about their Membership of APNIC.

Indicators such as reputation, respect and whether respondents feel involved, consulted and valued were examined and responses provided on a seven point scale from Strongly disagree to Strongly agree.

Eighty-four percent (84%) of respondents provided positive ratings that APNIC is respected in the Internet community. This supports the focus groups, where that APNIC was seen as a well respected organisation that is important to belong to. Despite this, fewer respondents (60%) agree that APNIC Membership enhances their organisation's credibility.

When asked about their Membership, 67% of respondents agreed APNIC seeks their opinions on issues relevant to APNIC services and the challenges of the Internet community and 65% also provided positive ratings when asked if they are treated as a valued Member of APNIC.

Despite strong support for APNIC's performance across many areas, this result reflects focus group conversations in which many participants mentioned that their contact with APNIC was mostly transactional in nature, however this should not be regarded as an indication of discontent, it is merely the way in which they interact with APNIC.

Seventy percent (70%) of respondents believe they have enough opportunity to provide feedback and input into APNIC activities. In the words of one respondent, "survey(s) ... are essential for APNIC to get respondents opinion / suggestion in planning activities."

However there were also suggestions for more, and more frequent, meetings with respondents and that "APNIC should have regular meetings with their members."

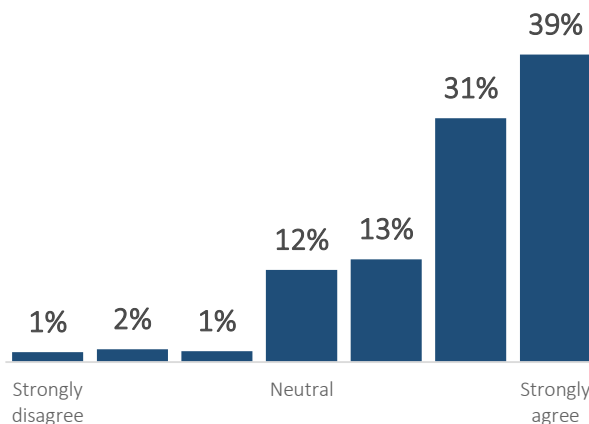
Although there is strong support for APNIC's performance across many areas, this result reflects focus group conversations in which many participants mentioned that their contact with APNIC was mainly transactional.

# Member engagement indicators

## Respect

Participants in focus groups indicated that APNIC is a well respected organisation that is important to belong to. This is also supported by the survey results, with 83% of respondents providing a positive rating to the question.

Reflecting feedback in other parts of the survey, respondents from LDEs and South Asia were most likely to agree that APNIC is respected in the Internet community.



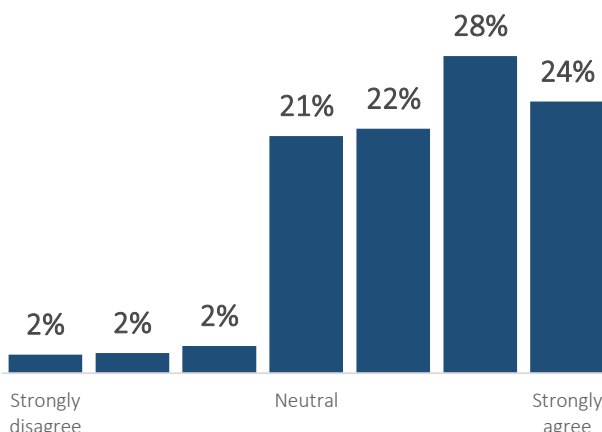
**Q 22 - APNIC is respected in the Internet community**

Mean=5.86, Std Dev.=1.30 N=610 (Presented to APNIC Members only)

## Transparency

As in 2014, there was majority agreement with APNIC’s openness and transparency. Seventy-four percent (74%) of respondents provided a rating of five or higher that APNIC was open and transparent in all its activities.

Once again, respondents in LDEs and South Asia were more likely to provide positive ratings to the question on openness and transparency. The mean score for this question of 5.38 compares favourably to all questions related to transparency included in the 2014 survey.



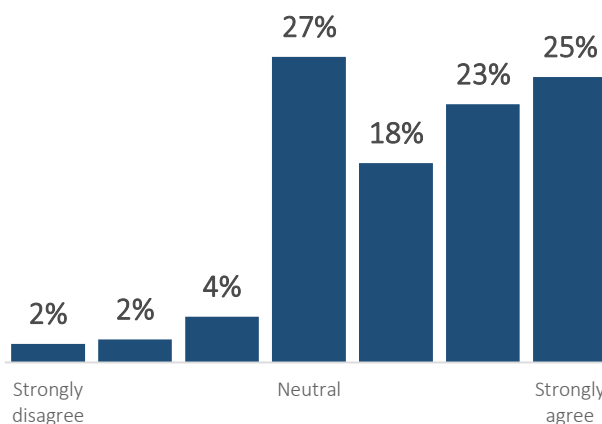
**Q 22 - APNIC is open and transparent in all its activities**

Mean=5.38, Std Dev.=1.35 N=610 (Presented to APNIC Members only)

## Value

Sixty-six percent (66%) of respondents provided a positive response when asked if they were treated as a valued Member of APNIC.

Although there is strong support for APNIC’s performance across many areas, this result reflects focus group conversations in which many participants felt that their contact with APNIC was mostly transactional. However, this should not be regarded as an indication of discontent, it is simply the way in which they interact with APNIC.



**Q 22 - I am treated as a valued Member of APNIC**

Mean=5.25, Std Dev.=1.43 n=610 (Presented to APNIC Members only)

Note: Figures may not sum to 100 due to rounding

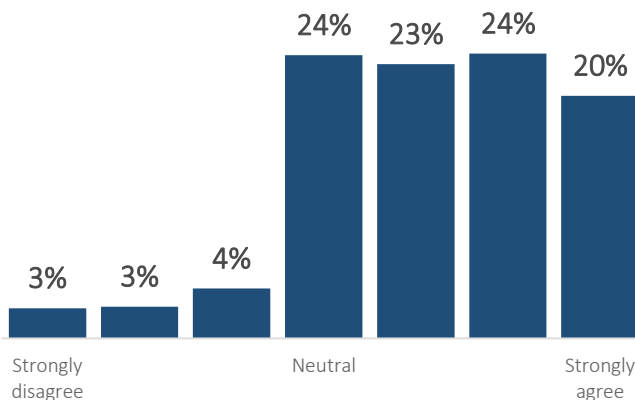


# Member engagement indicators

## Consultation

Sixty-seven percent (67%) of respondents were positive in their rating of whether APNIC seeks their opinions on issues relevant to APNIC services and the challenges of the Internet community.

This also supports the question that was asked about having enough opportunity to provide input into APNIC activities on the next page, where 70% of respondents answered in the affirmative.

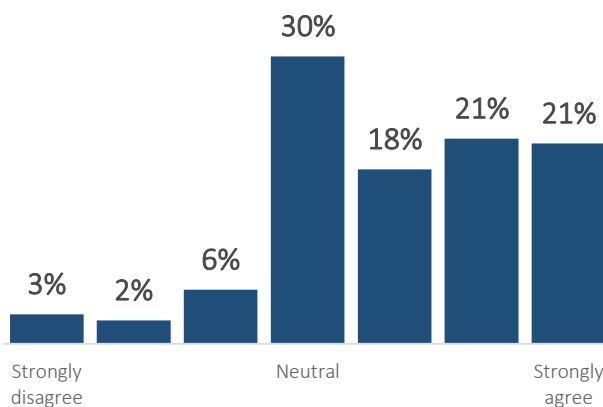


**Q 22 - APNIC seeks my opinion on issues relevant to APNIC services**  
 Mean=5.14, Std Dev.=1.44 N=610 (Presented to APNIC Members only)

## Credibility

Participants in focus groups indicated that membership of APNIC conveyed status, and that it was important to belong, and 60% of respondents to the survey also agreed that Membership enhances their organisation’s credibility.

Again, respondents from LDEs (73%) were more likely to provide a rating of five or higher when asked whether Membership enhances their reputation, compared to 46% of respondents from developed economies.



**Q 22 - Membership enhances my organisations reputation/credibility**  
 Mean=5.02, Std Dev.=1.50 N=610 (Presented to APNIC Members only)

Note: Figures may not sum to 100 due to rounding

*“In this market if you are not a Member of APNIC, then you’re nobody”*

## Member feedback & involvement

When asked if they believe they have enough opportunity to provide input into APNIC activities, 70% of respondents agreed. Only six percent (6%) indicated they did not have enough opportunities to provide feedback to APNIC.

Respondents in LDE's (82%) and South Asia (77%) were the most satisfied with the feedback opportunities they receive, while 60% of respondents from Oceania believe they have enough opportunity to provide input into APNIC activities.

Some free text feedback suggested reasons why respondents are satisfied with mention that "APNIC has already all the way possible for members to share feedback."

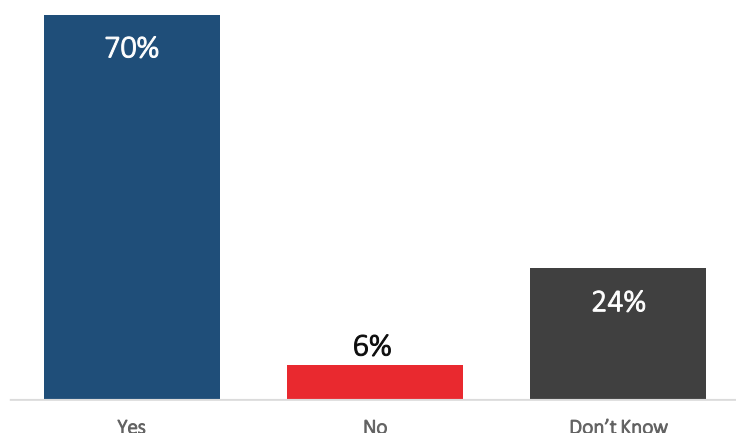
Other feedback, however, provided suggestions about ways in which APNIC might improve or provide greater opportunities for respondents to become involved.

Respondents suggested more frequent meetings and that "APNIC EC must come meet with us to understand our issues." Several other comments suggested APNIC "provide local events that don't cost a fortune to attend", while others thought that APNIC could "invite the Member organizations to participate".

Mention was also made that "there should be earlier involvement in gathering feedback, decision making, thought process, actions and eventual results."

### Q 23 - APNIC Members have enough opportunity to provide feedback into APNIC activities

n = 802 (Presented to APNIC Members only)



*"We have enough opportunity for providing feedback but I can see people are just ignoring such activities. Need more awareness and implementation on feedback approaches"*

# Endorsement

Understanding how respondents speak about APNIC to others provides insight into respondents overall perceptions.

Ten percent (10%) of respondents speak highly of APNIC without being asked and 31% tend to speak highly if they are asked. Very few speak negatively of the organisation, the majority being neutral when speaking about APNIC.

This supports focus group feedback that contact with APNIC is largely transactional for most participants. Further analysis of the data supports this, showing that respondents who have had the least contact with APNIC are more likely to indicate that they are neutral in the way in which they speak about the organisation.

Those respondents who have had a greater number of interactions with APNIC are significantly more likely to provide positive endorsement of APNIC than those with fewer contacts.

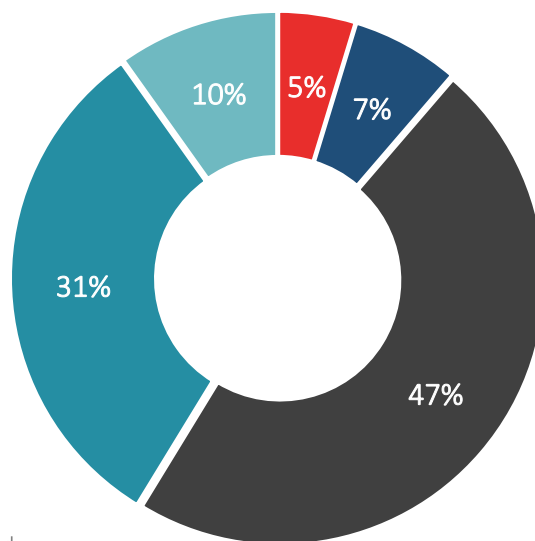
On average, APNIC Members are more likely to provide favourable endorsement of APNIC than members of NIRs or other stakeholders, although the proportion who speak highly without being asked is consistent at 10%.

Reflecting feedback throughout the survey, respondents from LDEs are the most likely to speak highly of APNIC – 17% speak highly without being asked.

Respondents from East Asia were the most likely to provide negative word of mouth, with 23% indicating they either speak critically or tend to be critical about APNIC. Fourteen percent (14%) of respondents from South East Asia are either critical or tend to be critical when speaking about APNIC. This compares to 7% from South Asia and 4% from Oceania.

**Q 41 - Respondents Endorsement of APNIC**  
(n=1,167) (Presented to all respondents)

- Critical without being asked
- Tend to be critical if asked
- I am neutral
- Tend to speak highly if asked
- Speak highly without being asked



|                                  | Total | LDEs | Developed | Developing | East Asia | Oceania | South East Asia | South Asia |
|----------------------------------|-------|------|-----------|------------|-----------|---------|-----------------|------------|
| Sample Size                      | 1167  | 169  | 314       | 685        | 265       | 282     | 257             | 318        |
| Critical without being asked     | 5%    | 4%   | 1%        | 7%         | 11%       | 1%      | 4%              | 4%         |
| Tend to be critical if asked     | 7%    | 4%   | 4%        | 8%         | 12%       | 3%      | 9%              | 3%         |
| I am neutral                     | 47%   | 39%  | 52%       | 47%        | 49%       | 49%     | 54%             | 39%        |
| Tend to speak highly if asked    | 31%   | 37%  | 36%       | 28%        | 20%       | 38%     | 26%             | 39%        |
| Speak highly without being asked | 10%   | 17%  | 7%        | 10%        | 9%        | 9%      | 6%              | 15%        |
| Mean Score                       | 3.35  | 3.59 | 3.44      | 3.25       | 3.04      | 3.50    | 3.20            | 3.59       |
| Standard Deviation               | 0.92  | 0.94 | 0.72      | 0.98       | 1.04      | 0.76    | 0.86            | 0.91       |

A nighttime photograph of a city skyline, likely Singapore, featuring the Marina Bay Sands and other skyscrapers. The image is overlaid with several bright, white, curved light trails that create a sense of motion and connectivity. A semi-transparent red rectangular box is positioned in the center, containing a quote in white text.

“Since APNIC interacts with many leading providers, it can act as a common platform of Knowledge Transfer and providing the best practices [from] across the world.”

# Conclusion

In conclusion, we would like to take the opportunity to thank all APNIC respondents for participating in the 2016 Survey. Your input is extremely valuable.

The robust sample size of 1,175 provides APNIC with clear direction on the preferences and opinions of the Internet community.

The 2016 Survey highlighted many of the challenges facing the Internet community, and provided many suggestions for ways in which APNIC can assist Members.

We trust this information forms a solid basis upon which APNIC can craft their strategic plans and service delivery for the coming two years.

If there are any questions about this report, please do not hesitate to contact Survey Matters.

# About Survey Matters

Survey Matters specialise in providing services to the Member-based and not for profit sector.

Survey Matters have helped a wide range of organisations understand their value proposition - what is important to respondents, how the organisation can help and how satisfied they are with their performance. We also work with the sector to generate and build industry data and knowledge to support advocacy, promotion, industry development and marketing activities.

**For further information, please contact:**

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# APNIC 2016 Survey Appendix A

APNIC Definitions of Economies and Sub-regions

# APNIC Definitions of Economies & Sub-regions\*

## East Asia

CN  
HK  
JP  
MO  
MN  
KP  
KR  
TW

## South Asia

AF  
BD  
BT  
IN  
MV  
NP  
PK  
LK

## South-East Asia

BN  
KH  
CX  
ID  
LA  
MY  
MM  
PH  
SG  
TH  
TL  
VN

## Oceania

AS  
AU  
CK  
FJ  
PF  
GU  
KI  
MH  
NR  
NC  
NZ  
NU  
NF  
MP  
PW  
PG  
PN  
WS  
SB  
TK  
TO  
TV  
VU  
WF

## Least developed regions

AF  
BD  
BT  
KH  
KI  
LA  
MM  
NP  
SB  
TL  
VU

\*Based on the country code list published in ISO 3166, which can be accessed via <https://www.iso.org/obp/ui/#search>



APNIC 2016 Survey  
Appendix B

Survey Data Tables &  
Segmentation by Region & Classification of Economies

# Overview

This Appendix B provides the full results for all questions asked in the 2016 APNIC Survey.

These are presented as full frequency and / or mean scores. When analysing the survey data, the data has been cross tabulated the results by respondents' relationship with APNIC (Member or Stakeholder), APNIC sub-region (East Asia, Oceania, South East Asia and South Asia) and Classification of Economies (Developed, Developing and Least Developed Economies (LDEs)) based on the UN classifications referenced in Appendix A.

Questions marked with an asterix (\*) were asked only of APNIC Members.

Q2. What type of organization do you work for?

|  | Total        | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | Eastern Asia | Oceania    | South Eastern Asia | Southern Asia | Non Asia Pacific |
|--|--------------|----------------------|-------------------|------------|---------------------|----------------------|--------------|------------|--------------------|---------------|------------------|
| <b>Sample Size</b>                     | <b>1,169</b> | <b>806</b>           | <b>363</b>        | <b>169</b> | <b>315</b>          | <b>685</b>           | <b>264</b>   | <b>282</b> | <b>257</b>         | <b>320</b>    | <b>45</b>        |
| Internet service provider (ISP)        | 32%          | 33%                  | 32%               | 49%        | 16%                 | 36%                  | 37%          | 14%        | 37%                | 44%           | 16%              |
| Telecommunications/Mobile operator     | 11%          | 13%                  | 7%                | 14%        | 11%                 | 11%                  | 8%           | 13%        | 12%                | 9%            | 20%              |
| Hosting/Data centre                    | 11%          | 11%                  | 10%               | 5%         | 14%                 | 11%                  | 15%          | 13%        | 10%                | 7%            | 7%               |
| Academic/Educational/Research          | 9%           | 8%                   | 9%                | 5%         | 10%                 | 9%                   | 6%           | 11%        | 12%                | 7%            | 2%               |
| Other                                  | 7%           | 7%                   | 7%                | 5%         | 12%                 | 6%                   | 3%           | 12%        | 4%                 | 8%            | 11%              |
| Banking/Financial                      | 6%           | 7%                   | 4%                | 6%         | 8%                  | 5%                   | 5%           | 7%         | 5%                 | 6%            | 11%              |
| Government/Regulator/Municipality      | 5%           | 4%                   | 6%                | 4%         | 9%                  | 3%                   | 1%           | 12%        | 5%                 | 2%            | 0%               |
| Non-profit/NGO/Internet community      | 4%           | 2%                   | 9%                | 3%         | 3%                  | 5%                   | 6%           | 3%         | 2%                 | 4%            | 7%               |
| Enterprise/Manufacturing/Retail        | 3%           | 4%                   | 3%                | 1%         | 5%                  | 3%                   | 5%           | 5%         | 2%                 | 3%            | 2%               |
| Software vendor                        | 3%           | 2%                   | 3%                | 1%         | 4%                  | 3%                   | 2%           | 4%         | 1%                 | 3%            | 7%               |
| Media/Entertainment                    | 2%           | 2%                   | 1%                | 2%         | 3%                  | 2%                   | 2%           | 2%         | 2%                 | 1%            | 7%               |
| Domain name registry/Registrar         | 2%           | 1%                   | 3%                | 0%         | 0%                  | 3%                   | 3%           | 0%         | 5%                 | 0%            | 2%               |
| NREN/Research network                  | 1%           | 1%                   | 2%                | 3%         | 1%                  | 1%                   | 3%           | 1%         | 0%                 | 2%            | 0%               |
| Infrastructure (transport/hospital)    | 1%           | 1%                   | 0%                | 1%         | 2%                  | 1%                   | 1%           | 2%         | 0%                 | 1%            | 2%               |
| Internet exchange point (IXP)          | 1%           | 1%                   | 1%                | 1%         | 1%                  | 1%                   | 1%           | 0%         | 2%                 | 1%            | 4%               |
| Hardware vendor                        | 1%           | 0%                   | 1%                | 1%         | 1%                  | 1%                   | 2%           | 0%         | 0%                 | 1%            | 2%               |
| Industrial (construction, mining, oil) | 1%           | 0%                   | 1%                | 1%         | 1%                  | 0%                   | 0%           | 1%         | 0%                 | 1%            | 0%               |

Q3. What is your organisation's relationship with APNIC?

|                                  | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|----------------------------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                      | 1,175 | 806                  | 369               | 170  | 316                 | 689                  | 268       | 283     | 257             | 321        | 46               |
| APNIC Member/Account Holder      | 69%   | 100%                 | 0%                | 80%  | 88%                 | 57%                  | 50%       | 89%     | 62%             | 69%        | 85%              |
| Member of an NIR in APNIC Region | 20%   | 0%                   | 63%               | 5%   | 4%                  | 31%                  | 42%       | 3%      | 26%             | 13%        | 4%               |
| Other Stakeholder                | 12%   | 0%                   | 37%               | 15%  | 8%                  | 12%                  | 8%        | 8%      | 12%             | 18%        | 11%              |

Q4. How many times have you used an APNIC service, contacted or interacted with APNIC in the past two (2) years?

|                             | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non APNIC |
|-----------------------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|-----------|
| Sample Size                 | 1175  | 806                  | 369               | 170  | 316                 | 689                  | 268       | 282     | 257             | 321        | 46        |
| None                        | 12%   | 9%                   | 20%               | 9%   | 12%                 | 13%                  | 12%       | 12%     | 12%             | 14%        | 4%        |
| 1-5 times                   | 49%   | 52%                  | 42%               | 36%  | 63%                 | 45%                  | 43%       | 63%     | 47%             | 39%        | 72%       |
| More than 5 times           | 28%   | 32%                  | 21%               | 39%  | 21%                 | 29%                  | 35%       | 20%     | 27%             | 31%        | 22%       |
| Don't know/I can't remember | 11%   | 8%                   | 18%               | 15%  | 4%                  | 13%                  | 9%        | 5%      | 14%             | 16%        | 2%        |

## Q5. Over the past 2 years have you?



(Select all that apply)

|                            | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|----------------------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                | 1030  | 735                  | 295               | 155  | 278                 | 597                  | 235       | 247     | 227             | 276        | 44               |
| Total Mentions             | 4545  | 3684                 | 861               | 884  | 1316                | 2345                 | 760       | 1160    | 1076            | 1326       | 222              |
| Visited the website        | 75%   | 77%                  | 71%               | 81%  | 82%                 | 70%                  | 65%       | 83%     | 76%             | 76%        | 73%              |
| Used MyAPNIC               | 59%   | 59%                  | 0%                | 49%  | 64%                 | 30%                  | 23%       | 59%     | 39%             | 40%        | 68%              |
| Applied for IP addresses   | 53%   | 53%                  | 0%                | 48%  | 44%                 | 32%                  | 20%       | 43%     | 44%             | 41%        | 55%              |
| Used the Whois Database    | 49%   | 53%                  | 39%               | 49%  | 60%                 | 43%                  | 36%       | 58%     | 50%             | 48%        | 66%              |
| Received IP addresses      | 45%   | 45%                  | 0%                | 45%  | 41%                 | 25%                  | 15%       | 41%     | 32%             | 36%        | 48%              |
| Read the blog              | 43%   | 41%                  | 46%               | 54%  | 40%                 | 41%                  | 37%       | 42%     | 42%             | 50%        | 39%              |
| Contacted the helpdesk     | 33%   | 33%                  | 0%                | 32%  | 28%                 | 19%                  | 11%       | 28%     | 26%             | 27%        | 30%              |
| Used reverse DNS           | 27%   | 27%                  | 0%                | 20%  | 33%                 | 13%                  | 11%       | 32%     | 17%             | 16%        | 30%              |
| Handling your query        | 22%   | 0%                   | 22%               | 3%   | 4%                  | 8%                   | 10%       | 3%      | 5%              | 7%         | 2%               |
| Attend conference/event    | 22%   | 21%                  | 24%               | 39%  | 14%                 | 21%                  | 21%       | 15%     | 33%             | 21%        | 16%              |
| Attended training          | 22%   | 22%                  | 20%               | 44%  | 9%                  | 22%                  | 16%       | 13%     | 27%             | 32%        | 5%               |
| Personally met with APNIC  | 17%   | 16%                  | 22%               | 34%  | 10%                 | 17%                  | 13%       | 12%     | 21%             | 24%        | 16%              |
| Attended presentation      | 15%   | 13%                  | 22%               | 24%  | 9%                  | 16%                  | 12%       | 9%      | 21%             | 18%        | 18%              |
| Technical assistance       | 13%   | 13%                  | 0%                | 15%  | 11%                 | 8%                   | 2%        | 11%     | 11%             | 13%        | 14%              |
| Transferred IPv4 addresses | 12%   | 12%                  | 0%                | 9%   | 10%                 | 8%                   | 9%        | 9%      | 10%             | 7%         | 7%               |
| Participate SIGs/Meeting's | 7%    | 5%                   | 11%               | 7%   | 6%                  | 7%                   | 9%        | 4%      | 7%              | 7%         | 11%              |
| Used RPKI services         | 5%    | 5%                   | 0%                | 11%  | 3%                  | 3%                   | 1%        | 2%      | 4%              | 8%         | 2%               |
| Policy Development         | 5%    | 4%                   | 7%                | 5%   | 3%                  | 5%                   | 7%        | 2%      | 5%              | 5%         | 5%               |
| None of these              | 2%    | 1%                   | 5%                | 1%   | 1%                  | 4%                   | 5%        | 1%      | 2%              | 3%         | 0%               |
| Other                      | 2%    | 1%                   | 4%                | 1%   | 2%                  | 2%                   | 2%        | 2%      | 2%              | 1%         | 2%               |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|               | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| APNIC website | 772   | 564                  | 208               | 125  | 229                 | 418                  | 152       | 206     | 173             | 209        | 32               |
| Poor          | 0%    | 0%                   | 0%                | 1%   | 0%                  | 0%                   | 1%        | 0%      | 0%              | 0%         | 0%               |
| 2             | 0%    | 0%                   | 0%                | 0%   | 0%                  | 0%                   | 0%        | 0%      | 1%              | 0%         | 0%               |
| 3             | 1%    | 1%                   | 0%                | 1%   | 2%                  | 1%                   | 1%        | 1%      | 1%              | 1%         | 3%               |
| Neutral       | 12%   | 12%                  | 13%               | 8%   | 14%                 | 13%                  | 15%       | 14%     | 15%             | 7%         | 13%              |
| 5             | 19%   | 19%                  | 19%               | 12%  | 30%                 | 16%                  | 20%       | 27%     | 19%             | 10%        | 25%              |
| 6             | 40%   | 42%                  | 34%               | 42%  | 43%                 | 37%                  | 34%       | 44%     | 39%             | 40%        | 41%              |
| Excellent     | 27%   | 25%                  | 34%               | 37%  | 11%                 | 33%                  | 30%       | 14%     | 26%             | 41%        | 19%              |
| Top 3         | 86%   | 86%                  | 86%               | 90%  | 84%                 | 86%                  | 84%       | 84%     | 84%             | 91%        | 84%              |
| Mean          | 5.78  | 5.76                 | 5.84              | 6.02 | 5.47                | 5.88                 | 5.74      | 5.54    | 5.73            | 6.11       | 5.59             |
| Std. Dev.     | 1.06  | 1.03                 | 1.12              | 1.04 | 0.96                | 1.07                 | 1.13      | 0.98    | 1.06            | 1.00       | 1.04             |

|           | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|-----------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| MyAPNIC   | 430   | 430                  | -                 | 76   | 177                 | 177                  | 55        | 145     | 89              | 111        | 30               |
| Poor      | 0%    | 0%                   | -                 | 0%   | 0%                  | 0%                   | 0%        | 0%      | 0%              | 0%         | 0%               |
| 2         | 0%    | 0%                   | -                 | 0%   | 1%                  | 1%                   | 2%        | 1%      | 0%              | 0%         | 0%               |
| 3         | 2%    | 2%                   | -                 | 0%   | 3%                  | 1%                   | 4%        | 3%      | 0%              | 1%         | 0%               |
| Neutral   | 7%    | 7%                   | -                 | 5%   | 8%                  | 7%                   | 18%       | 8%      | 4%              | 5%         | 3%               |
| 5         | 19%   | 19%                  | -                 | 12%  | 25%                 | 15%                  | 16%       | 23%     | 22%             | 8%         | 30%              |
| 6         | 42%   | 42%                  | -                 | 33%  | 46%                 | 41%                  | 42%       | 45%     | 45%             | 33%        | 47%              |
| Excellent | 30%   | 30%                  | -                 | 50%  | 18%                 | 34%                  | 18%       | 21%     | 28%             | 53%        | 20%              |
| Top 3     | 90%   | 90%                  | -                 | 95%  | 88%                 | 91%                  | 76%       | 88%     | 96%             | 95%        | 97%              |
| Mean      | 5.90  | 5.90                 | -                 | 6.28 | 5.64                | 5.99                 | 5.47      | 5.70    | 5.97            | 6.33       | 5.83             |
| Std. Dev. | 1.01  | 1.01                 | -                 | 0.87 | 1.01                | 0.99                 | 1.20      | 1.04    | 0.83            | 0.88       | 0.79             |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                               | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-------------------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>IP address application</b> | <b>389</b> | <b>389</b>           | <b>-</b>          | <b>74</b>  | <b>123</b>          | <b>192</b>           | <b>46</b>  | <b>105</b> | <b>100</b>      | <b>114</b> | <b>24</b>        |
| <b>Poor</b>                   | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>                      | 0%         | 0%                   | -                 | 0%         | 0%                  | 1%                   | 2%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>                      | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>                | 7%         | 7%                   | -                 | 7%         | 7%                  | 7%                   | 13%        | 8%         | 7%              | 4%         | 4%               |
| <b>5</b>                      | 16%        | 16%                  | -                 | 12%        | 20%                 | 16%                  | 20%        | 21%        | 17%             | 11%        | 13%              |
| <b>6</b>                      | 36%        | 36%                  | -                 | 36%        | 38%                 | 34%                  | 26%        | 40%        | 40%             | 32%        | 33%              |
| <b>Excellent</b>              | 41%        | 41%                  | -                 | 45%        | 35%                 | 43%                  | 39%        | 31%        | 36%             | 52%        | 50%              |
| <b>Top 3</b>                  | <b>93%</b> | <b>93%</b>           | <b>-</b>          | <b>93%</b> | <b>93%</b>          | <b>93%</b>           | <b>85%</b> | <b>92%</b> | <b>93%</b>      | <b>96%</b> | <b>96%</b>       |
| Mean                          | 6.09       | 6.09                 | -                 | 6.19       | 6.01                | 6.11                 | 5.85       | 5.95       | 6.05            | 6.32       | 6.29             |
| Std. Dev.                     | 0.94       | 0.94                 | -                 | 0.90       | 0.92                | 0.97                 | 1.21       | 0.91       | 0.90            | 0.84       | 0.86             |

|                       | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Whois Database</b> | <b>501</b> | <b>387</b>           | <b>114</b>        | <b>76</b>  | <b>167</b>          | <b>258</b>           | <b>83</b>  | <b>144</b> | <b>113</b>      | <b>132</b> | <b>29</b>        |
| <b>Poor</b>           | 1%         | 1%                   | 1%                | 0%         | 1%                  | 1%                   | 4%         | 1%         | 0%              | 0%         | 0%               |
| <b>2</b>              | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>              | 0%         | 1%                   | 0%                | 0%         | 1%                  | 0%                   | 0%         | 1%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>        | 6%         | 5%                   | 11%               | 3%         | 7%                  | 7%                   | 6%         | 8%         | 7%              | 5%         | 3%               |
| <b>5</b>              | 15%        | 16%                  | 13%               | 14%        | 20%                 | 12%                  | 14%        | 18%        | 17%             | 8%         | 28%              |
| <b>6</b>              | 41%        | 43%                  | 33%               | 30%        | 50%                 | 38%                  | 43%        | 48%        | 41%             | 30%        | 45%              |
| <b>Excellent</b>      | 37%        | 35%                  | 41%               | 53%        | 22%                 | 41%                  | 33%        | 24%        | 35%             | 56%        | 24%              |
| <b>Top 3</b>          | <b>92%</b> | <b>94%</b>           | <b>88%</b>        | <b>97%</b> | <b>91%</b>          | <b>92%</b>           | <b>90%</b> | <b>90%</b> | <b>93%</b>      | <b>95%</b> | <b>97%</b>       |
| Mean                  | 6.03       | 6.04                 | 6.01              | 6.33       | 5.81                | 6.09                 | 5.88       | 5.83       | 6.04            | 6.37       | 5.90             |
| Std. Dev.             | 1.00       | 0.97                 | 1.11              | 0.82       | 0.96                | 1.05                 | 1.27       | 1.00       | 0.90            | 0.85       | 0.82             |



**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                       | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| IP address allocation | 331        | 331                  | -                 | 70         | 114                 | 147                  | 36         | 102        | 73              | 99         | 21               |
| Poor                  | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 2                     | 0%         | 0%                   | -                 | 0%         | 0%                  | 1%                   | 3%         | 0%         | 0%              | 0%         | 0%               |
| 3                     | 1%         | 1%                   | -                 | 1%         | 0%                  | 1%                   | 0%         | 0%         | 3%              | 0%         | 0%               |
| Neutral               | 7%         | 7%                   | -                 | 10%        | 7%                  | 5%                   | 14%        | 8%         | 8%              | 3%         | 0%               |
| 5                     | 14%        | 14%                  | -                 | 9%         | 20%                 | 12%                  | 14%        | 19%        | 12%             | 10%        | 19%              |
| 6                     | 37%        | 37%                  | -                 | 30%        | 41%                 | 36%                  | 28%        | 40%        | 45%             | 28%        | 43%              |
| Excellent             | 42%        | 42%                  | -                 | 50%        | 32%                 | 46%                  | 42%        | 33%        | 32%             | 59%        | 38%              |
| Top 3                 | <b>92%</b> | <b>92%</b>           | -                 | <b>89%</b> | <b>93%</b>          | <b>94%</b>           | <b>83%</b> | <b>92%</b> | <b>89%</b>      | <b>97%</b> | <b>100%</b>      |
| Mean                  | 6.11       | 6.11                 | -                 | 6.17       | 5.97                | 6.19                 | 5.89       | 5.99       | 5.95            | 6.42       | 6.19             |
| Std. Dev.             | 0.96       | 0.96                 | -                 | 1.05       | 0.90                | 0.95                 | 1.26       | 0.92       | 1.01            | 0.80       | 0.75             |

|            | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| APNIC Blog | 440        | 303                  | 137               | 84         | 112                 | 244                  | 87         | 103        | 95              | 138        | 17               |
| Poor       | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 1%         | 0%         | 0%              | 0%         | 0%               |
| 2          | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 1%         | 0%         | 0%              | 0%         | 0%               |
| 3          | 0%         | 1%                   | 0%                | 0%         | 1%                  | 0%                   | 0%         | 1%         | 0%              | 1%         | 0%               |
| Neutral    | 18%        | 18%                  | 16%               | 15%        | 25%                 | 15%                  | 24%        | 25%        | 14%             | 13%        | 0%               |
| 5          | 23%        | 21%                  | 27%               | 17%        | 21%                 | 25%                  | 22%        | 22%        | 28%             | 20%        | 18%              |
| 6          | 31%        | 33%                  | 27%               | 35%        | 36%                 | 27%                  | 23%        | 34%        | 32%             | 31%        | 47%              |
| Excellent  | 28%        | 27%                  | 30%               | 33%        | 17%                 | 31%                  | 29%        | 17%        | 26%             | 35%        | 35%              |
| Top 3      | <b>81%</b> | <b>80%</b>           | <b>84%</b>        | <b>85%</b> | <b>74%</b>          | <b>84%</b>           | <b>74%</b> | <b>74%</b> | <b>86%</b>      | <b>86%</b> | <b>100%</b>      |
| Mean       | 5.66       | 5.64                 | 5.71              | 5.86       | 5.43                | 5.70                 | 5.48       | 5.42       | 5.71            | 5.86       | 6.18             |
| Std. Dev.  | 1.11       | 1.13                 | 1.07              | 1.05       | 1.07                | 1.14                 | 1.30       | 1.08       | 1.01            | 1.06       | 0.73             |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                       | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>APNIC helpdesk</b> | <b>241</b> | <b>241</b>           | -                 | <b>50</b>  | <b>79</b>           | <b>112</b>           | <b>25</b>  | <b>70</b>  | <b>58</b>       | <b>75</b>  | <b>13</b>        |
| <b>Poor</b>           | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>              | 0%         | 0%                   | -                 | 0%         | 1%                  | 0%                   | 0%         | 1%         | 0%              | 0%         | 0%               |
| <b>3</b>              | 2%         | 2%                   | -                 | 2%         | 3%                  | 1%                   | 4%         | 1%         | 0%              | 3%         | 0%               |
| <b>Neutral</b>        | 7%         | 7%                   | -                 | 8%         | 5%                  | 7%                   | 8%         | 6%         | 9%              | 5%         | 8%               |
| <b>5</b>              | 8%         | 8%                   | -                 | 4%         | 5%                  | 13%                  | 8%         | 6%         | 10%             | 9%         | 8%               |
| <b>6</b>              | 36%        | 36%                  | -                 | 24%        | 42%                 | 37%                  | 40%        | 39%        | 45%             | 24%        | 38%              |
| <b>Excellent</b>      | 47%        | 47%                  | -                 | 62%        | 44%                 | 43%                  | 40%        | 47%        | 36%             | 59%        | 46%              |
| <b>Top 3</b>          | <b>91%</b> | <b>91%</b>           | -                 | <b>90%</b> | <b>91%</b>          | <b>92%</b>           | <b>88%</b> | <b>91%</b> | <b>91%</b>      | <b>92%</b> | <b>92%</b>       |
| Mean                  | 6.19       | 6.19                 | -                 | 6.36       | 6.16                | 6.13                 | 6.04       | 6.20       | 6.09            | 6.31       | 6.23             |
| Std. Dev.             | 1.00       | 1.00                 | -                 | 1.03       | 1.06                | 0.95                 | 1.10       | 1.04       | 0.90            | 1.03       | 0.93             |

|                            | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|----------------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Reverse DNS service</b> | <b>202</b> | <b>202</b>           | -                 | <b>31</b>  | <b>92</b>           | <b>79</b>            | <b>26</b>  | <b>79</b>  | <b>39</b>       | <b>45</b>  | <b>13</b>        |
| <b>Poor</b>                | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>                   | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>                   | 2%         | 2%                   | -                 | 0%         | 4%                  | 0%                   | 4%         | 4%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>             | 6%         | 6%                   | -                 | 3%         | 8%                  | 5%                   | 12%        | 9%         | 0%              | 4%         | 0%               |
| <b>5</b>                   | 14%        | 14%                  | -                 | 3%         | 16%                 | 15%                  | 12%        | 16%        | 18%             | 7%         | 15%              |
| <b>6</b>                   | 41%        | 41%                  | -                 | 29%        | 48%                 | 38%                  | 42%        | 49%        | 41%             | 29%        | 31%              |
| <b>Excellent</b>           | 37%        | 37%                  | -                 | 65%        | 24%                 | 42%                  | 31%        | 22%        | 41%             | 60%        | 54%              |
| <b>Top 3</b>               | <b>92%</b> | <b>92%</b>           | -                 | <b>97%</b> | <b>88%</b>          | <b>95%</b>           | <b>85%</b> | <b>87%</b> | <b>100%</b>     | <b>96%</b> | <b>100%</b>      |
| Mean                       | 6.05       | 6.05                 | -                 | 6.55       | 5.79                | 6.16                 | 5.85       | 5.76       | 6.23            | 6.44       | 6.38             |
| Std. Dev.                  | 0.96       | 0.96                 | -                 | 0.72       | 1.03                | 0.87                 | 1.12       | 1.02       | 0.74            | 0.81       | 0.77             |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                     | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs        | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---------------------|------------|----------------------|-------------------|-------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Handling your query | 64         | -                    | 64                | 5           | 10                  | 49                   | 24         | 8          | 12              | 19         | 1                |
| Poor                | 2%         | -                    | 2%                | 0%          | 0%                  | 2%                   | 0%         | 0%         | 0%              | 5%         | 0%               |
| 2                   | 0%         | -                    | 0%                | 0%          | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 3                   | 3%         | -                    | 3%                | 0%          | 10%                 | 2%                   | 4%         | 13%        | 0%              | 0%         | 0%               |
| Neutral             | 16%        | -                    | 16%               | 0%          | 20%                 | 16%                  | 17%        | 25%        | 17%             | 11%        | 0%               |
| 5                   | 11%        | -                    | 11%               | 0%          | 20%                 | 10%                  | 17%        | 13%        | 8%              | 0%         | 100%             |
| 6                   | 27%        | -                    | 27%               | 0%          | 30%                 | 29%                  | 21%        | 25%        | 42%             | 26%        | 0%               |
| Excellent           | 42%        | -                    | 42%               | 100%        | 20%                 | 41%                  | 42%        | 25%        | 33%             | 58%        | 0%               |
| Top 3               | <b>80%</b> | -                    | <b>80%</b>        | <b>100%</b> | <b>70%</b>          | <b>80%</b>           | <b>79%</b> | <b>63%</b> | <b>83%</b>      | <b>84%</b> | <b>100%</b>      |
| Mean                | 5.83       | -                    | 5.83              | 7.00        | 5.30                | 5.82                 | 5.79       | 5.25       | 5.92            | 6.11       | 5.00             |
| Std. Dev.           | 1.35       | -                    | 1.35              | 0.00        | 1.34                | 1.36                 | 1.28       | 1.49       | 1.08            | 1.56       | -                |

|                   | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Conference/Events | 226        | 156                  | 70                | 60         | 38                  | 128                  | 49         | 36         | 76              | 57         | 7                |
| Poor              | 0%         | 1%                   | 0%                | 0%         | 0%                  | 1%                   | 2%         | 0%         | 0%              | 0%         | 0%               |
| 2                 | 0%         | 1%                   | 0%                | 0%         | 0%                  | 1%                   | 0%         | 0%         | 1%              | 0%         | 0%               |
| 3                 | 0%         | 0%                   | 1%                | 0%         | 0%                  | 1%                   | 0%         | 0%         | 0%              | 2%         | 0%               |
| Neutral           | 7%         | 6%                   | 7%                | 3%         | 5%                  | 9%                   | 10%        | 3%         | 8%              | 2%         | 14%              |
| 5                 | 15%        | 16%                  | 14%               | 13%        | 16%                 | 16%                  | 12%        | 17%        | 22%             | 11%        | 0%               |
| 6                 | 37%        | 40%                  | 30%               | 33%        | 53%                 | 34%                  | 43%        | 39%        | 37%             | 30%        | 57%              |
| Excellent         | 39%        | 36%                  | 47%               | 50%        | 26%                 | 38%                  | 33%        | 42%        | 32%             | 56%        | 29%              |
| Top 3             | <b>92%</b> | <b>92%</b>           | <b>91%</b>        | <b>97%</b> | <b>95%</b>          | <b>89%</b>           | <b>88%</b> | <b>97%</b> | <b>91%</b>      | <b>96%</b> | <b>86%</b>       |
| Mean              | 6.05       | 6.01                 | 6.14              | 6.30       | 6.00                | 5.95                 | 5.90       | 6.19       | 5.88            | 6.37       | 6.00             |
| Std. Dev.         | 1.02       | 1.02                 | 1.01              | 0.83       | 0.81                | 1.14                 | 1.18       | 0.82       | 1.03            | 0.88       | 1.00             |

## Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?

(Only the specific services selected above will be presented for each respondent)

|                  | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Training</b>  | <b>222</b> | <b>163</b>           | <b>59</b>         | <b>68</b>  | <b>25</b>           | <b>129</b>           | <b>37</b>  | <b>33</b>  | <b>62</b>       | <b>88</b>  | <b>2</b>         |
| <b>Poor</b>      | 0%         | 0%                   | 2%                | 0%         | 0%                  | 1%                   | 3%         | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>         | 0%         | 1%                   | 0%                | 0%         | 0%                  | 1%                   | 0%         | 0%         | 0%              | 1%         | 0%               |
| <b>3</b>         | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>   | 8%         | 7%                   | 10%               | 6%         | 12%                 | 9%                   | 19%        | 9%         | 5%              | 6%         | 0%               |
| <b>5</b>         | 19%        | 20%                  | 15%               | 22%        | 24%                 | 16%                  | 19%        | 18%        | 21%             | 17%        | 50%              |
| <b>6</b>         | 33%        | 34%                  | 29%               | 22%        | 44%                 | 36%                  | 22%        | 39%        | 44%             | 27%        | 50%              |
| <b>Excellent</b> | 39%        | 37%                  | 44%               | 50%        | 20%                 | 37%                  | 38%        | 33%        | 31%             | 49%        | 0%               |
| <b>Top 3</b>     | <b>91%</b> | <b>92%</b>           | <b>88%</b>        | <b>94%</b> | <b>88%</b>          | <b>90%</b>           | <b>78%</b> | <b>91%</b> | <b>95%</b>      | <b>93%</b> | <b>100%</b>      |
| Mean             | 6.00       | 6.00                 | 6.00              | 6.16       | 5.72                | 5.97                 | 5.68       | 5.97       | 6.00            | 6.16       | 5.50             |
| Std. Dev.        | 1.05       | 0.99                 | 1.20              | 0.97       | 0.94                | 1.10                 | 1.40       | 0.95       | 0.85            | 1.03       | 0.71             |

|                           | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---------------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Meeting with APNIC</b> | <b>178</b> | <b>114</b>           | <b>64</b>         | <b>51</b>  | <b>27</b>           | <b>100</b>           | <b>31</b>  | <b>29</b>  | <b>46</b>       | <b>66</b>  | <b>6</b>         |
| <b>Poor</b>               | 1%         | 1%                   | 0%                | 0%         | 4%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 17%              |
| <b>2</b>                  | 1%         | 1%                   | 0%                | 2%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 2%         | 0%               |
| <b>3</b>                  | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>            | 7%         | 6%                   | 8%                | 8%         | 4%                  | 7%                   | 10%        | 3%         | 7%              | 8%         | 0%               |
| <b>5</b>                  | 9%         | 11%                  | 6%                | 6%         | 15%                 | 9%                   | 6%         | 10%        | 15%             | 5%         | 17%              |
| <b>6</b>                  | 29%        | 33%                  | 20%               | 29%        | 33%                 | 27%                  | 29%        | 28%        | 35%             | 21%        | 67%              |
| <b>Excellent</b>          | 54%        | 48%                  | 66%               | 55%        | 44%                 | 57%                  | 55%        | 59%        | 43%             | 65%        | 0%               |
| <b>Top 3</b>              | <b>92%</b> | <b>92%</b>           | <b>92%</b>        | <b>90%</b> | <b>93%</b>          | <b>93%</b>           | <b>90%</b> | <b>97%</b> | <b>93%</b>      | <b>91%</b> | <b>83%</b>       |
| Mean                      | 6.27       | 6.18                 | 6.44              | 6.25       | 6.04                | 6.34                 | 6.29       | 6.41       | 6.15            | 6.39       | 5.00             |
| Std. Dev.                 | 1.03       | 1.08                 | 0.92              | 1.09       | 1.32                | 0.91                 | 0.97       | 0.82       | 0.92            | 1.05       | 2.00             |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                     | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Presentation</b> | 157        | 93                   | 64                | 37         | 26                  | 94                   | 28         | 22         | 48              | 51         | 8                |
| <b>Poor</b>         | 1%         | 1%                   | 0%                | 3%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 2%         | 0%               |
| <b>2</b>            | 2%         | 2%                   | 2%                | 0%         | 12%                 | 0%                   | 0%         | 5%         | 0%              | 0%         | 25%              |
| <b>3</b>            | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>      | 7%         | 3%                   | 13%               | 5%         | 8%                  | 7%                   | 11%        | 9%         | 6%              | 6%         | 0%               |
| <b>5</b>            | 14%        | 12%                  | 17%               | 19%        | 8%                  | 14%                  | 7%         | 23%        | 15%             | 14%        | 13%              |
| <b>6</b>            | 41%        | 46%                  | 34%               | 38%        | 62%                 | 37%                  | 39%        | 36%        | 48%             | 35%        | 63%              |
| <b>Excellent</b>    | 35%        | 35%                  | 34%               | 35%        | 12%                 | 41%                  | 43%        | 27%        | 31%             | 43%        | 0%               |
| <b>Top 3</b>        | <b>90%</b> | <b>94%</b>           | <b>86%</b>        | <b>92%</b> | <b>81%</b>          | <b>93%</b>           | <b>89%</b> | <b>86%</b> | <b>94%</b>      | <b>92%</b> | <b>75%</b>       |
| Mean                | 5.96       | 6.03                 | 5.86              | 5.92       | 5.42                | 6.13                 | 6.14       | 5.68       | 6.04            | 6.08       | 4.88             |
| Std. Dev.           | 1.11       | 1.11                 | 1.13              | 1.21       | 1.45                | 0.92                 | 0.97       | 1.25       | 0.85            | 1.15       | 1.81             |

|                             | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia   | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|-------------|------------|-----------------|------------|------------------|
| <b>Technical assistance</b> | 99         | 99                   | -                 | 23         | 30                  | 46                   | 5           | 28         | 25              | 35         | 6                |
| <b>Poor</b>                 | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%          | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>                    | 1%         | 1%                   | -                 | 0%         | 3%                  | 0%                   | 0%          | 4%         | 0%              | 0%         | 0%               |
| <b>3</b>                    | 1%         | 1%                   | -                 | 4%         | 0%                  | 0%                   | 0%          | 0%         | 4%              | 0%         | 0%               |
| <b>Neutral</b>              | 3%         | 3%                   | -                 | 4%         | 0%                  | 4%                   | 0%          | 0%         | 0%              | 9%         | 0%               |
| <b>5</b>                    | 12%        | 12%                  | -                 | 4%         | 10%                 | 17%                  | 20%         | 7%         | 12%             | 14%        | 17%              |
| <b>6</b>                    | 33%        | 33%                  | -                 | 30%        | 33%                 | 35%                  | 0%          | 32%        | 48%             | 31%        | 17%              |
| <b>Excellent</b>            | 49%        | 49%                  | -                 | 57%        | 53%                 | 43%                  | 80%         | 57%        | 36%             | 46%        | 67%              |
| <b>Top 3</b>                | <b>95%</b> | <b>95%</b>           | -                 | <b>91%</b> | <b>97%</b>          | <b>96%</b>           | <b>100%</b> | <b>96%</b> | <b>96%</b>      | <b>91%</b> | <b>100%</b>      |
| Mean                        | 6.24       | 6.24                 | -                 | 6.30       | 6.30                | 6.17                 | 6.60        | 6.36       | 6.12            | 6.14       | 6.50             |
| Std. Dev.                   | 0.97       | 0.97                 | -                 | 1.06       | 1.06                | 0.88                 | 0.89        | 1.06       | 0.93            | 0.97       | 0.84             |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                       | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>IPv4 transfers</b> | <b>88</b>  | <b>88</b>            | -                 | <b>14</b>  | <b>27</b>           | <b>47</b>            | <b>20</b>  | <b>22</b>  | <b>23</b>       | <b>20</b>  | <b>3</b>         |
| <b>Poor</b>           | 1%         | 1%                   | -                 | 7%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 5%         | 0%               |
| <b>2</b>              | 1%         | 1%                   | -                 | 0%         | 4%                  | 0%                   | 5%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>              | 2%         | 2%                   | -                 | 0%         | 7%                  | 0%                   | 5%         | 5%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>        | 13%        | 13%                  | -                 | 7%         | 7%                  | 17%                  | 25%        | 9%         | 9%              | 10%        | 0%               |
| <b>5</b>              | 16%        | 16%                  | -                 | 29%        | 19%                 | 11%                  | 10%        | 18%        | 4%              | 30%        | 33%              |
| <b>6</b>              | 36%        | 36%                  | -                 | 14%        | 44%                 | 38%                  | 20%        | 45%        | 48%             | 30%        | 33%              |
| <b>Excellent</b>      | 31%        | 31%                  | -                 | 43%        | 19%                 | 34%                  | 35%        | 23%        | 39%             | 25%        | 33%              |
| <b>Top 3</b>          | <b>83%</b> | <b>83%</b>           | -                 | <b>86%</b> | <b>81%</b>          | <b>83%</b>           | <b>65%</b> | <b>86%</b> | <b>91%</b>      | <b>85%</b> | <b>100%</b>      |
| Mean                  | 5.73       | 5.73                 | -                 | 5.64       | 5.48                | 5.89                 | 5.40       | 5.73       | 6.17            | 5.50       | 6.00             |
| Std. Dev.             | 1.26       | 1.26                 | -                 | 1.69       | 1.31                | 1.07                 | 1.57       | 1.08       | 0.89            | 1.43       | 1.00             |

|                         | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs        | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-------------------------|------------|----------------------|-------------------|-------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>SIG/Meetings etc</b> | <b>70</b>  | <b>39</b>            | <b>31</b>         | <b>11</b>   | <b>16</b>           | <b>43</b>            | <b>20</b>  | <b>10</b>  | <b>15</b>       | <b>20</b>  | <b>5</b>         |
| <b>Poor</b>             | 1%         | 0%                   | 3%                | 0%          | 0%                  | 2%                   | 5%         | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>                | 0%         | 0%                   | 0%                | 0%          | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>                | 1%         | 3%                   | 0%                | 0%          | 0%                  | 2%                   | 0%         | 0%         | 0%              | 5%         | 0%               |
| <b>Neutral</b>          | 13%        | 5%                   | 23%               | 0%          | 6%                  | 19%                  | 20%        | 10%        | 13%             | 10%        | 0%               |
| <b>5</b>                | 21%        | 28%                  | 13%               | 27%         | 50%                 | 9%                   | 10%        | 30%        | 13%             | 20%        | 80%              |
| <b>6</b>                | 37%        | 44%                  | 29%               | 45%         | 38%                 | 35%                  | 30%        | 30%        | 60%             | 35%        | 20%              |
| <b>Excellent</b>        | 26%        | 21%                  | 32%               | 27%         | 6%                  | 33%                  | 35%        | 30%        | 13%             | 30%        | 0%               |
| <b>Top 3</b>            | <b>84%</b> | <b>92%</b>           | <b>74%</b>        | <b>100%</b> | <b>94%</b>          | <b>77%</b>           | <b>75%</b> | <b>90%</b> | <b>87%</b>      | <b>85%</b> | <b>100%</b>      |
| Mean                    | 5.67       | 5.74                 | 5.58              | 6.00        | 5.44                | 5.67                 | 5.60       | 5.80       | 5.73            | 5.75       | 5.20             |
| Std. Dev.               | 1.18       | 0.94                 | 1.43              | 0.77        | 0.73                | 1.38                 | 1.57       | 1.03       | 0.88            | 1.16       | 0.45             |

**Q6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?**

*(Only the specific services selected above will be presented for each respondent)*

|                     | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>RPKI service</b> | <b>40</b>  | <b>40</b>            | <b>-</b>          | <b>17</b>  | <b>8</b>            | <b>15</b>            | <b>3</b>   | <b>6</b>   | <b>8</b>        | <b>22</b>  | <b>1</b>         |
| <b>Poor</b>         | 3%         | 3%                   | -                 | 6%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 5%         | 0%               |
| <b>2</b>            | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>            | 0%         | 0%                   | -                 | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>Neutral</b>      | 13%        | 13%                  | -                 | 6%         | 13%                 | 20%                  | 33%        | 33%        | 13%             | 5%         | 0%               |
| <b>5</b>            | 15%        | 15%                  | -                 | 6%         | 25%                 | 20%                  | 33%        | 17%        | 0%              | 18%        | 0%               |
| <b>6</b>            | 33%        | 33%                  | -                 | 24%        | 38%                 | 40%                  | 33%        | 17%        | 50%             | 27%        | 100%             |
| <b>Excellent</b>    | 38%        | 38%                  | -                 | 59%        | 25%                 | 20%                  | 0%         | 33%        | 38%             | 45%        | 0%               |
| <b>Top 3</b>        | <b>85%</b> | <b>85%</b>           | <b>-</b>          | <b>88%</b> | <b>88%</b>          | <b>80%</b>           | <b>67%</b> | <b>67%</b> | <b>88%</b>      | <b>91%</b> | <b>100%</b>      |
| Mean                | 5.85       | 5.85                 | -                 | 6.12       | 5.75                | 5.60                 | 5.00       | 5.50       | 6.13            | 5.95       | 6.00             |
| Std. Dev.           | 1.29       | 1.29                 | -                 | 1.58       | 1.04                | 1.06                 | 1.00       | 1.38       | 0.99            | 1.43       | -                |

|                           | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs        | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---------------------------|------------|----------------------|-------------------|-------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Policy Development</b> | <b>48</b>  | <b>27</b>            | <b>21</b>         | <b>8</b>    | <b>8</b>            | <b>32</b>            | <b>16</b>  | <b>4</b>   | <b>12</b>       | <b>14</b>  | <b>2</b>         |
| <b>Poor</b>               | 0%         | 0%                   | 0%                | 0%          | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>2</b>                  | 0%         | 0%                   | 0%                | 0%          | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| <b>3</b>                  | 2%         | 0%                   | 5%                | 0%          | 0%                  | 3%                   | 0%         | 0%         | 0%              | 7%         | 0%               |
| <b>Neutral</b>            | 13%        | 15%                  | 10%               | 0%          | 25%                 | 13%                  | 19%        | 25%        | 0%              | 7%         | 50%              |
| <b>5</b>                  | 21%        | 22%                  | 19%               | 25%         | 25%                 | 19%                  | 13%        | 0%         | 42%             | 14%        | 50%              |
| <b>6</b>                  | 42%        | 37%                  | 48%               | 38%         | 50%                 | 41%                  | 50%        | 50%        | 33%             | 43%        | 0%               |
| <b>Excellent</b>          | 23%        | 26%                  | 19%               | 38%         | 0%                  | 25%                  | 19%        | 25%        | 25%             | 29%        | 0%               |
| <b>Top 3</b>              | <b>85%</b> | <b>85%</b>           | <b>86%</b>        | <b>100%</b> | <b>75%</b>          | <b>84%</b>           | <b>81%</b> | <b>75%</b> | <b>100%</b>     | <b>86%</b> | <b>50%</b>       |
| Mean                      | 5.71       | 5.74                 | 5.67              | 6.13        | 5.25                | 5.72                 | 5.69       | 5.75       | 5.83            | 5.79       | 4.50             |
| Std. Dev.                 | 1.03       | 1.02                 | 1.06              | 0.83        | 0.89                | 1.08                 | 1.01       | 1.26       | 0.83            | 1.19       | 0.71             |

Q8. \* Thinking about APNIC overall, how would you rate the following?



|                            | Total      | APNIC Account Holder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|----------------------------|------------|----------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Quality of Service</b>  | <b>733</b> | <b>733</b>           | <b>129</b> | <b>250</b>          | <b>354</b>           | <b>113</b> | <b>222</b> | <b>153</b>      | <b>207</b> | <b>38</b>        |
| Poor                       | 0%         | 0%                   | 0%         | 0%                  | 0%                   | 1%         | 0%         | 0%              | 0%         | 0%               |
| 2                          | 0%         | 0%                   | 0%         | 0%                  | 0%                   | 1%         | 0%         | 0%              | 0%         | 0%               |
| 3                          | 1%         | 1%                   | 0%         | 1%                  | 1%                   | 2%         | 1%         | 0%              | 0%         | 0%               |
| Neutral                    | 7%         | 7%                   | 7%         | 8%                  | 7%                   | 17%        | 7%         | 6%              | 4%         | 5%               |
| 5                          | 15%        | 15%                  | 9%         | 18%                 | 15%                  | 12%        | 19%        | 18%             | 11%        | 13%              |
| 6                          | 41%        | 41%                  | 35%        | 44%                 | 41%                  | 35%        | 45%        | 51%             | 32%        | 37%              |
| Excellent                  | 36%        | 36%                  | 49%        | 29%                 | 36%                  | 33%        | 27%        | 25%             | 53%        | 45%              |
| Top 3                      | <b>92%</b> | <b>92%</b>           | <b>93%</b> | <b>91%</b>          | <b>92%</b>           | <b>80%</b> | <b>92%</b> | <b>94%</b>      | <b>96%</b> | <b>95%</b>       |
| Mean                       | 6.03       | 6.03                 | 6.26       | 5.91                | 6.03                 | 5.73       | 5.91       | 5.96            | 6.34       | 6.21             |
| Std. Dev.                  | 0.95       | 0.95                 | 0.90       | 0.94                | 0.98                 | 1.26       | 0.91       | 0.82            | 0.83       | 0.87             |
| <b>Value of services</b>   | <b>732</b> | <b>732</b>           | <b>128</b> | <b>250</b>          | <b>354</b>           | <b>113</b> | <b>222</b> | <b>153</b>      | <b>206</b> | <b>38</b>        |
| Poor                       | 0%         | 0%                   | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 2                          | 0%         | 0%                   | 0%         | 0%                  | 1%                   | 2%         | 0%         | 0%              | 0%         | 0%               |
| 3                          | 1%         | 1%                   | 0%         | 2%                  | 1%                   | 2%         | 2%         | 0%              | 0%         | 0%               |
| Neutral                    | 8%         | 8%                   | 6%         | 12%                 | 7%                   | 17%        | 10%        | 7%              | 3%         | 11%              |
| 5                          | 14%        | 14%                  | 9%         | 16%                 | 13%                  | 12%        | 17%        | 18%             | 7%         | 16%              |
| 6                          | 40%        | 40%                  | 37%        | 42%                 | 40%                  | 37%        | 43%        | 46%             | 36%        | 32%              |
| Excellent                  | 37%        | 37%                  | 48%        | 28%                 | 38%                  | 30%        | 29%        | 30%             | 52%        | 42%              |
| Top 3                      | <b>90%</b> | <b>90%</b>           | <b>94%</b> | <b>87%</b>          | <b>92%</b>           | <b>80%</b> | <b>88%</b> | <b>93%</b>      | <b>96%</b> | <b>89%</b>       |
| Mean                       | 6.02       | 6.02                 | 6.26       | 5.84                | 6.06                 | 5.72       | 5.87       | 5.99            | 6.37       | 6.05             |
| Std. Dev.                  | 0.99       | 0.99                 | 0.87       | 1.02                | 0.98                 | 1.21       | 1.00       | 0.86            | 0.80       | 1.01             |
| <b>Value of membership</b> | <b>733</b> | <b>733</b>           | <b>128</b> | <b>250</b>          | <b>355</b>           | <b>114</b> | <b>222</b> | <b>153</b>      | <b>206</b> | <b>38</b>        |
| Poor                       | 0%         | 0%                   | 1%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 1%         | 0%               |
| 2                          | 1%         | 1%                   | 0%         | 2%                  | 1%                   | 2%         | 2%         | 0%              | 0%         | 0%               |
| 3                          | 2%         | 2%                   | 0%         | 3%                  | 2%                   | 3%         | 3%         | 0%              | 1%         | 0%               |
| Neutral                    | 12%        | 12%                  | 9%         | 16%                 | 9%                   | 18%        | 14%        | 10%             | 5%         | 18%              |
| 5                          | 16%        | 16%                  | 7%         | 21%                 | 15%                  | 17%        | 23%        | 20%             | 7%         | 8%               |
| 6                          | 35%        | 35%                  | 30%        | 35%                 | 36%                  | 32%        | 35%        | 41%             | 32%        | 32%              |
| Excellent                  | 35%        | 35%                  | 52%        | 24%                 | 37%                  | 29%        | 24%        | 29%             | 54%        | 42%              |
| Top 3                      | <b>86%</b> | <b>86%</b>           | <b>90%</b> | <b>80%</b>          | <b>88%</b>           | <b>77%</b> | <b>81%</b> | <b>90%</b>      | <b>93%</b> | <b>82%</b>       |
| Mean                       | 5.86       | 5.86                 | 6.23       | 5.56                | 5.94                 | 5.61       | 5.57       | 5.88            | 6.28       | 5.97             |
| Std. Dev.                  | 1.15       | 1.15                 | 1.06       | 1.19                | 1.10                 | 1.25       | 1.19       | 0.95            | 1.05       | 1.13             |



Q9.\* Over the last two (2) years, would you say that APNIC's service delivery to your organisation has:

|                        | Total      | APNIC Account Holder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|------------------------|------------|----------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size            | 723        | 723                  | 128        | 248                 | 347                  | 113        | 219        | 150             | 203        | 38               |
| Declined significantly | 1%         | 1%                   | 1%         | 0%                  | 1%                   | 1%         | 0%         | 1%              | 0%         | 0%               |
| Declined slightly      | 1%         | 1%                   | 0%         | 0%                  | 2%                   | 4%         | 0%         | 0%              | 1%         | 0%               |
| Stayed the same        | 43%        | 43%                  | 16%        | 69%                 | 33%                  | 41%        | 69%        | 33%             | 21%        | 55%              |
| Improved slightly      | 33%        | 33%                  | 40%        | 22%                 | 38%                  | 34%        | 21%        | 42%             | 39%        | 29%              |
| Improved significantly | 23%        | 23%                  | 43%        | 8%                  | 26%                  | 21%        | 9%         | 24%             | 39%        | 16%              |
| <b>Top 2</b>           | <b>56%</b> | <b>56%</b>           | <b>83%</b> | <b>30%</b>          | <b>64%</b>           | <b>55%</b> | <b>30%</b> | <b>66%</b>      | <b>78%</b> | 45%              |
| Mean                   | 3.76       | 3.76                 | 4.24       | 3.36                | 3.88                 | 3.71       | 3.37       | 3.87            | 4.17       | 3.61             |
| Std. Dev.              | 0.83       | 0.83                 | 0.78       | 0.65                | 0.84                 | 0.87       | 0.67       | 0.82            | 0.78       | 0.75             |

SSQ5. \*\*Overall, how would you rate your experience dealing with APNIC?



|             | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size | 292        | -                    | 292               | 26         | 28                  | 238                  | 117        | 25         | 74              | 69         | 6                |
| Poor        | 2%         | -                    | 2%                | 0%         | 7%                  | 2%                   | 3%         | 4%         | 1%              | 1%         | 17%              |
| 2           | 0%         | -                    | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 3           | 1%         | -                    | 1%                | 0%         | 0%                  | 2%                   | 2%         | 0%         | 3%              | 0%         | 0%               |
| Neutral     | 20%        | -                    | 20%               | 15%        | 14%                 | 21%                  | 22%        | 8%         | 26%             | 16%        | 17%              |
| 5           | 13%        | -                    | 13%               | 19%        | 14%                 | 12%                  | 12%        | 8%         | 19%             | 6%         | 33%              |
| 6           | 24%        | -                    | 24%               | 23%        | 32%                 | 23%                  | 14%        | 36%        | 31%             | 30%        | 17%              |
| Excellent   | 39%        | -                    | 39%               | 42%        | 32%                 | 40%                  | 48%        | 44%        | 20%             | 46%        | 17%              |
| Top 3       | <b>76%</b> | -                    | <b>76%</b>        | <b>85%</b> | <b>79%</b>          | <b>75%</b>           | <b>74%</b> | <b>88%</b> | <b>70%</b>      | <b>83%</b> | <b>67%</b>       |
| Mean        | 5.70       | -                    | 5.70              | 5.92       | 5.54                | 5.70                 | 5.74       | 6.00       | 5.35            | 6.01       | 4.67             |
| Std. Dev.   | 1.40       | -                    | 1.40              | 1.13       | 1.64                | 1.40                 | 1.49       | 1.38       | 1.27            | 1.24       | 2.07             |

Q11. \*Has your organisation already deployed or are you ready for deployment of IPv6?

|   | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                               | 805   | 136  | 279                 | 390                  | 134       | 251     | 160             | 221        | 39               |
| Yes, IPv6 is fully deployed               | 15%   | 8%   | 14%                 | 19%                  | 24%       | 7%      | 24%             | 10%        | 41%              |
| Yes, IPv6 is deployed in our core network | 21%   | 18%  | 17%                 | 25%                  | 28%       | 17%     | 20%             | 21%        | 23%              |
| Have a deployment plan                    | 29%   | 47%  | 21%                 | 28%                  | 18%       | 24%     | 33%             | 41%        | 13%              |
| No  | 35%   | 27%  | 48%                 | 29%                  | 31%       | 53%     | 24%             | 29%        | 23%              |

Q12. \*When do you expect the deployment to be completed?

|                     | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---------------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size         | 230   | 64   | 58                  | 108                  | 24        | 59      | 52              | 90         | 5                |
| This year           | 11%   | 6%   | 16%                 | 12%                  | 4%        | 19%     | 12%             | 9%         | 0%               |
| In 2017             | 32%   | 41%  | 26%                 | 31%                  | 21%       | 24%     | 42%             | 36%        | 20%              |
| In 2018             | 20%   | 13%  | 16%                 | 27%                  | 25%       | 19%     | 23%             | 19%        | 0%               |
| In 2019             | 6%    | 6%   | 5%                  | 6%                   | 8%        | 2%      | 6%              | 6%         | 40%              |
| In 2020             | 7%    | 11%  | 5%                  | 6%                   | 8%        | 7%      | 0%              | 11%        | 0%               |
| Sometime after 2020 | 6%    | 9%   | 3%                  | 5%                   | 8%        | 3%      | 4%              | 8%         | 0%               |
| Don't know          | 18%   | 14%  | 29%                 | 15%                  | 25%       | 27%     | 13%             | 12%        | 40%              |

Q13. \*What are the MAIN challenges that are affecting your organisation's deployment of IPv6?

|   | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size   | 680   | 125  | 239                 | 316                  | 101       | 233     | 122             | 201        | 23               |
| Total Mentions  | 1634  | 311  | 579                 | 744                  | 224       | 561     | 301             | 489        | 59               |
| No demand for IPv6 from customers                                 | 46%   | 50%  | 47%                 | 43%                  | 40%       | 49%     | 46%             | 47%        | 30%              |
| Customers are not ready for IPv6                                  | 36%   | 48%  | 29%                 | 36%                  | 43%       | 27%     | 40%             | 40%        | 35%              |
| Lack of skills and expertise within our organisation              | 28%   | 36%  | 28%                 | 26%                  | 11%       | 29%     | 37%             | 30%        | 35%              |
| No clear business / technical advantages or reasons to adopt IPv6 | 27%   | 10%  | 36%                 | 26%                  | 24%       | 36%     | 29%             | 16%        | 22%              |
| Legacy systems  | 20%   | 6%   | 32%                 | 16%                  | 12%       | 32%     | 17%             | 10%        | 30%              |
| Lack of applications that can run on IPv6                         | 19%   | 20%  | 12%                 | 23%                  | 23%       | 10%     | 23%             | 22%        | 30%              |
| Lack of training  | 17%   | 34%  | 6%                  | 19%                  | 7%        | 7%      | 20%             | 32%        | 9%               |
| Upstream providers do not support IPv6                            | 11%   | 14%  | 12%                 | 10%                  | 19%       | 11%     | 9%              | 9%         | 13%              |
| Risks with IPv4 are lower than deployment of IPv6                 | 11%   | 4%   | 17%                 | 10%                  | 14%       | 15%     | 8%              | 7%         | 17%              |
| Cost of deploying is too high                                     | 8%    | 9%   | 5%                  | 9%                   | 8%        | 6%      | 6%              | 11%        | 0%               |
| Too expensive to run both IPv4 and IPv6                           | 7%    | 9%   | 6%                  | 7%                   | 13%       | 4%      | 2%              | 9%         | 13%              |
| Other   | 6%    | 6%   | 8%                  | 4%                   | 3%        | 8%      | 4%              | 5%         | 13%              |
| The perceived risks of deploying IPv6 are high                    | 5%    | 2%   | 5%                  | 5%                   | 7%        | 5%      | 6%              | 3%         | 9%               |

Q14. \*What do you think are the MOST EFFECTIVE ways that APNIC could assist your organisation to transition to or deploy IPv6?

|  | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size  | 676   | 124  | 238                 | 314                  | 99        | 233     | 122             | 200        | 22               |
| Total Mentions   | 1701  | 333  | 572                 | 796                  | 223       | 568     | 328             | 531        | 51               |
| Provide case studies and best current practices about IPv6                               | 49%   | 46%  | 45%                 | 53%                  | 46%       | 46%     | 59%             | 48%        | 45%              |
| Provide more advanced training in IPv6   | 46%   | 60%  | 32%                 | 52%                  | 38%       | 35%     | 54%             | 61%        | 27%              |
| Promote the benefits of IPv6 to management and/or decision makers                        | 39%   | 35%  | 43%                 | 37%                  | 34%       | 42%     | 41%             | 35%        | 50%              |
| Promote the benefits of IPv6 to customers/consumers                                      | 38%   | 40%  | 41%                 | 34%                  | 31%       | 36%     | 39%             | 40%        | 50%              |
| Facilitate knowledge sharing between member organisations on IPv6 deployment experiences | 31%   | 34%  | 26%                 | 33%                  | 24%       | 30%     | 38%             | 33%        | 18%              |
| Promote the advantages of IPv6 to hardware, software and/or content providers            | 24%   | 28%  | 23%                 | 24%                  | 20%       | 25%     | 20%             | 29%        | 14%              |
| Promote the advantages of IPv6 to government and related organisations                   | 20%   | 25%  | 22%                 | 17%                  | 23%       | 21%     | 16%             | 21%        | 18%              |
| APNIC should take no action to promote or assist with the deployment of IPv6             | 4%    | 0%   | 7%                  | 3%                   | 7%        | 6%      | 1%              | 1%         | 9%               |

Q16. \*Thinking about your Internet-related services, products or activities (in particular those related to APNIC’s role and responsibilities) what are the MAIN challenges facing your organisation? Please rank these in order of their importance, where 1 is the MOST important challenge.

|   | Rank1 | Rank2 | Rank3 | Rank4 | Rank5 | Rank6 | Rank7 | Rank8 | Rank9 | Rank10 | Rank11 | Rank12 | Rank13 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|
| Network security – intrusion and other breaches | 16%   | 13%   | 12%   | 8%    | 9%    | 6%    | 7%    | 4%    | 10%   | 4%     | 4%     | 3%     | 4%     |
| DDoS attacks                                    | 13%   | 11%   | 9%    | 8%    | 10%   | 6%    | 6%    | 12%   | 2%    | 5%     | 4%     | 5%     | 11%    |
| Getting more IPv4 addresses                     | 10%   | 6%    | 6%    | 7%    | 6%    | 4%    | 7%    | 10%   | 7%    | 7%     | 4%     | 5%     | 3%     |
| Management of bandwidth or network capacity     | 8%    | 6%    | 11%   | 10%   | 13%   | 12%   | 9%    | 4%    | 11%   | 9%     | 10%    | 8%     | 5%     |
| Phishing, Spam, Malware, Ransomware             | 7%    | 11%   | 7%    | 8%    | 8%    | 6%    | 10%   | 8%    | 2%    | 6%     | 4%     | 1%     | 3%     |
| Hiring and/or keeping skilled employees         | 7%    | 7%    | 8%    | 10%   | 7%    | 7%    | 7%    | 3%    | 7%    | 10%    | 3%     | 7%     | 9%     |
| Customer unwillingness to use IPv6              | 7%    | 6%    | 8%    | 6%    | 4%    | 12%   | 5%    | 8%    | 6%    | 2%     | 4%     | 3%     | 11%    |
| Lack of awareness of IPv6 in my organization    | 6%    | 7%    | 4%    | 7%    | 5%    | 3%    | 5%    | 9%    | 11%   | 5%     | 7%     | 11%    | 1%     |
| Deploying IPv6 in customer networks             | 5%    | 5%    | 6%    | 3%    | 9%    | 4%    | 10%   | 9%    | 5%    | 12%    | 8%     | 9%     | 9%     |
| Cost of deploying IPv6                          | 5%    | 6%    | 5%    | 5%    | 4%    | 7%    | 10%   | 2%    | 9%    | 10%    | 9%     | 8%     | 0%     |
| Routing security                                | 5%    | 6%    | 8%    | 10%   | 6%    | 10%   | 6%    | 5%    | 6%    | 6%     | 8%     | 8%     | 4%     |
| Lack of IPv6 applications                       | 4%    | 6%    | 6%    | 8%    | 6%    | 5%    | 4%    | 9%    | 6%    | 6%     | 8%     | 7%     | 7%     |
| Risks of deploying IPv6                         | 3%    | 4%    | 4%    | 2%    | 3%    | 7%    | 9%    | 6%    | 4%    | 5%     | 11%    | 9%     | 12%    |
| Deploying NAT                                   | 2%    | 4%    | 3%    | 5%    | 4%    | 7%    | 0%    | 2%    | 10%   | 4%     | 12%    | 4%     | 12%    |
| Brokers selling/leasing IPv4 addresses          | 1%    | 2%    | 1%    | 3%    | 3%    | 2%    | 6%    | 9%    | 2%    | 7%     | 4%     | 11%    | 5%     |
| <b>Total</b>                                    |       |       |       |       |       |       |       |       |       |        |        |        |        |

Q17. \* Do you believe APNIC has a role to play in helping you address these challenges?

|   | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                                     | 777   | 129  | 273                 | 375                  | 130       | 246     | 153             | 210        | 38               |
| Getting more IPv4 addresses                     | 80%   | 83%  | 73%                 | 84%                  | 81%       | 73%     | 84%             | 86%        | 74%              |
| Routing security                                | 67%   | 73%  | 58%                 | 72%                  | 75%       | 57%     | 77%             | 65%        | 74%              |
| Brokers leasing / selling IPv4 addresses        | 65%   | 51%  | 66%                 | 68%                  | 73%       | 68%     | 67%             | 55%        | 58%              |
| Risks of deploying IPv6                         | 65%   | 74%  | 57%                 | 68%                  | 76%       | 59%     | 69%             | 66%        | 50%              |
| Lack of awareness of IPv6 in my organisation    | 63%   | 66%  | 55%                 | 68%                  | 72%       | 56%     | 63%             | 67%        | 55%              |
| Customer unwillingness to use IPv6              | 61%   | 67%  | 57%                 | 63%                  | 66%       | 55%     | 62%             | 65%        | 63%              |
| Network security – intrusion and other breaches | 54%   | 70%  | 35%                 | 64%                  | 62%       | 36%     | 68%             | 65%        | 41%              |
| Deploying IPv6 in customer networks             | 54%   | 61%  | 41%                 | 61%                  | 67%       | 44%     | 60%             | 57%        | 38%              |
| DDoS attacks                                    | 53%   | 67%  | 39%                 | 60%                  | 56%       | 40%     | 63%             | 64%        | 44%              |
| Cost of deploying IPv6                          | 52%   | 55%  | 41%                 | 58%                  | 65%       | 44%     | 55%             | 53%        | 37%              |
| Lack of IPv6 applications                       | 50%   | 65%  | 30%                 | 60%                  | 58%       | 31%     | 58%             | 67%        | 31%              |
| Phishing, Spam etc.                             | 50%   | 67%  | 32%                 | 58%                  | 55%       | 32%     | 63%             | 62%        | 46%              |
| Management of bandwidth & capacity              | 34%   | 48%  | 15%                 | 44%                  | 46%       | 18%     | 46%             | 43%        | 15%              |
| Deploying NAT                                   | 33%   | 41%  | 13%                 | 45%                  | 49%       | 16%     | 38%             | 44%        | 11%              |
| Hiring / keeping skilled employees              | 33%   | 46%  | 10%                 | 46%                  | 58%       | 11%     | 39%             | 44%        | 8%               |

Q19. \*Do you think that the APNIC Executive Council and Secretariat understand the challenges faced in providing your Internet-related services, products or activities?

|                    | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--------------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| <b>Sample Size</b> | 805   | 135  | 279                 | 391                  | 134       | 251     | 160             | 221        | 39               |
| <b>Yes</b>         | 61%   | 78%  | 49%                 | 65%                  | 63%       | 49%     | 63%             | 74%        | 59%              |
| <b>No</b>          | 4%    | 1%   | 5%                  | 4%                   | 4%        | 4%      | 3%              | 4%         | 8%               |
| <b>Unsure</b>      | 35%   | 21%  | 46%                 | 31%                  | 33%       | 47%     | 35%             | 22%        | 33%              |



The majority of APNIC’s resources and expenditure in the 2016 activity plan are allocated to serving Members. The APNIC EC allocates the annual budget across four (4) categories:

**Serving Members** – technical infrastructure, customer service, registration services and Member training

**Regional Development & Outreach** – APNIC conferences, community engagement, regional technical development, APNIC foundation

**Global Cooperation** – global technical community collaboration, global outreach and information sharing, inter-Governmental outreach and coordination

**Corporate** – finance & administration, human resource management, legal and governance, facilities (which equate to 20% of the total budget)

Q 21. \*Apart from Corporate operations, please indicate what percentage of the total budget you think should be allocated to these other APNIC services and activities?

|                             | Total      | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------------|------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Service Members</b>      | <b>806</b> | <b>136</b> | <b>279</b>          | <b>391</b>           | <b>134</b> | <b>251</b> | <b>160</b>      | <b>222</b> | <b>39</b>        |
| Mean                        | 33.16      | 31.41      | 35.73               | 31.94                | 35.57      | 35.70      | 31.37           | 29.71      | 35.59            |
| Std. Dev.                   | 14.20      | 14.56      | 13.78               | 14.15                | 15.14      | 14.02      | 13.90           | 13.30      | 13.72            |
| <b>Regional Development</b> | <b>806</b> | <b>136</b> | <b>279</b>          | <b>391</b>           | <b>134</b> | <b>251</b> | <b>160</b>      | <b>222</b> | <b>39</b>        |
| Mean                        | 27.15      | 29.39      | 24.95               | 27.95                | 25.60      | 25.85      | 27.04           | 30.05      | 24.82            |
| Std. Dev.                   | 11.17      | 11.99      | 10.86               | 10.85                | 10.83      | 11.48      | 10.84           | 11.06      | 9.32             |
| <b>Global Outreach</b>      | <b>806</b> | <b>136</b> | <b>279</b>          | <b>391</b>           | <b>134</b> | <b>251</b> | <b>160</b>      | <b>222</b> | <b>39</b>        |
| Mean                        | 19.68      | 19.20      | 19.32               | 20.12                | 18.84      | 18.45      | 21.59           | 20.24      | 19.59            |
| Std. Dev.                   | 11.19      | 12.06      | 10.18               | 11.57                | 11.35      | 10.09      | 12.80           | 11.16      | 9.62             |

Q 22. \*Thinking about your membership of APNIC, please indicate how much you AGREE with the following statements:

| APNIC provides essential Internet resource services that cannot be accessed elsewhere | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size   | 797   | 132  | 279                 | 386                  | 132       | 250     | 159             | 217        | 39               |
| Strongly disagree   | 3%    | 5%   | 1%                  | 3%                   | 3%        | 2%      | 3%              | 4%         | 0%               |
| 2   | 3%    | 5%   | 2%                  | 2%                   | 4%        | 1%      | 2%              | 4%         | 5%               |
| 3   | 2%    | 2%   | 1%                  | 2%                   | 5%        | 1%      | 3%              | 1%         | 0%               |
| Neutral   | 18%   | 15%  | 13%                 | 22%                  | 26%       | 13%     | 23%             | 18%        | 3%               |
| 5   | 18%   | 17%  | 19%                 | 17%                  | 16%       | 18%     | 17%             | 18%        | 23%              |
| 6   | 24%   | 16%  | 28%                 | 24%                  | 20%       | 28%     | 27%             | 18%        | 36%              |
| Strongly agree  | 33%   | 40%  | 35%                 | 30%                  | 27%       | 37%     | 26%             | 38%        | 33%              |
| Top 3   | 75%   | 73%  | 82%                 | 70%                  | 63%       | 83%     | 70%             | 74%        | 92%              |
| Mean  | 5.51  | 5.45 | 5.71                | 5.38                 | 5.16      | 5.77    | 5.35            | 5.47       | 5.85             |
| Std. Dev.   | 1.49  | 1.72 | 1.33                | 1.51                 | 1.60      | 1.31    | 1.45            | 1.64       | 1.23             |

| APNIC provides other services of value to my organisation which cannot be found elsewhere in my country or economy | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size  | 797   | 132  | 279                 | 386                  | 132       | 250     | 159             | 217        | 39               |
| Strongly disagree  | 3%    | 5%   | 3%                  | 3%                   | 2%        | 2%      | 1%              | 6%         | 3%               |
| 2  | 3%    | 2%   | 4%                  | 2%                   | 3%        | 4%      | 1%              | 2%         | 0%               |
| 3  | 5%    | 7%   | 4%                  | 5%                   | 9%        | 4%      | 4%              | 5%         | 0%               |
| Neutral  | 25%   | 20%  | 29%                 | 23%                  | 25%       | 25%     | 23%             | 23%        | 36%              |
| 5  | 20%   | 20%  | 23%                 | 19%                  | 21%       | 21%     | 25%             | 15%        | 26%              |
| 6  | 21%   | 18%  | 20%                 | 22%                  | 18%       | 21%     | 25%             | 19%        | 23%              |
| Strongly agree   | 23%   | 27%  | 18%                 | 26%                  | 23%       | 22%     | 21%             | 29%        | 13%              |
| Top 3  | 65%   | 65%  | 61%                 | 68%                  | 61%       | 64%     | 71%             | 64%        | 62%              |
| Mean   | 5.14  | 5.09 | 4.99                | 5.26                 | 5.05      | 5.10    | 5.30            | 5.12       | 5.03             |
| Std. Dev.  | 1.52  | 1.67 | 1.45                | 1.50                 | 1.50      | 1.50    | 1.28            | 1.73       | 1.25             |

Q 22. \*Thinking about your membership of APNIC, please indicate how much you AGREE with the following statements:

| I choose to use APNIC services because they are of higher quality than other services available | Total      | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---|------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size   | 796        | 132        | 279                 | 385                  | 131        | 250        | 158             | 218        | 39               |
| Strongly disagree   | 3%         | 2%         | 5%                  | 2%                   | 1%         | 5%         | 1%              | 2%         | 8%               |
| 2   | 3%         | 2%         | 4%                  | 3%                   | 4%         | 2%         | 2%              | 3%         | 8%               |
| 3   | 3%         | 2%         | 4%                  | 4%                   | 8%         | 4%         | 3%              | 1%         | 3%               |
| Neutral   | 30%        | 20%        | 45%                 | 22%                  | 27%        | 44%        | 25%             | 17%        | 38%              |
| 5   | 17%        | 15%        | 15%                 | 18%                  | 18%        | 16%        | 20%             | 17%        | 8%               |
| 6   | 22%        | 24%        | 16%                 | 26%                  | 23%        | 18%        | 31%             | 22%        | 13%              |
| Strongly agree  | 22%        | 35%        | 11%                 | 26%                  | 20%        | 11%        | 18%             | 39%        | 23%              |
| Top 3   | <b>61%</b> | <b>74%</b> | <b>43%</b>          | <b>70%</b>           | <b>60%</b> | <b>45%</b> | <b>70%</b>      | <b>77%</b> | <b>44%</b>       |
| Mean  | 5.10       | 5.57       | 4.54                | 5.34                 | 5.05       | 4.62       | 5.27            | 5.63       | 4.62             |
| Std. Dev.   | 1.50       | 1.44       | 1.46                | 1.43                 | 1.44       | 1.43       | 1.30            | 1.48       | 1.84             |

| I am treated as a valued member of APNIC | Total      | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--|------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
|  | 796        | 132        | 279                 | 385                  | 131        | 250        | 158             | 218        | 39               |
| Strongly disagree                        | 2%         | 1%         | 3%                  | 1%                   | 2%         | 3%         | 1%              | 1%         | 0%               |
| 2  | 2%         | 3%         | 2%                  | 2%                   | 3%         | 2%         | 1%              | 3%         | 0%               |
| 3  | 4%         | 1%         | 5%                  | 4%                   | 7%         | 4%         | 4%              | 1%         | 8%               |
| Neutral                                  | 27%        | 18%        | 35%                 | 24%                  | 29%        | 35%        | 26%             | 17%        | 28%              |
| 5  | 18%        | 12%        | 19%                 | 18%                  | 22%        | 17%        | 19%             | 14%        | 18%              |
| 6  | 23%        | 24%        | 20%                 | 24%                  | 19%        | 22%        | 28%             | 22%        | 18%              |
| Strongly agree                           | 25%        | 41%        | 16%                 | 26%                  | 19%        | 17%        | 21%             | 41%        | 28%              |
| Top 3                                    | <b>65%</b> | <b>78%</b> | <b>55%</b>          | <b>69%</b>           | <b>60%</b> | <b>56%</b> | <b>68%</b>      | <b>78%</b> | <b>64%</b>       |
| Mean                                     | 5.25       | 5.76       | 4.89                | 5.35                 | 4.98       | 4.94       | 5.30            | 5.73       | 5.31             |
| Std. Dev.                                | 1.43       | 1.39       | 1.42                | 1.39                 | 1.43       | 1.44       | 1.29            | 1.41       | 1.36             |

Q 22. \*Thinking about your membership of APNIC, please indicate how much you AGREE with the following statements:

| APNIC seeks my opinions on issues relevant to APNIC services and the challenges of the Internet community | Total      | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---|------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size   | 794        | 131        | 279                 | 384                  | 130        | 250        | 158             | 217        | 39               |
| Strongly disagree   | 3%         | 2%         | 4%                  | 2%                   | 1%         | 4%         | 1%              | 3%         | 0%               |
| 2   | 3%         | 1%         | 3%                  | 3%                   | 4%         | 3%         | 2%              | 2%         | 5%               |
| 3   | 4%         | 3%         | 5%                  | 4%                   | 5%         | 5%         | 4%              | 2%         | 8%               |
| Neutral   | 24%        | 23%        | 22%                 | 25%                  | 28%        | 23%        | 25%             | 22%        | 15%              |
| 5   | 23%        | 21%        | 26%                 | 21%                  | 21%        | 26%        | 25%             | 18%        | 23%              |
| 6   | 24%        | 19%        | 25%                 | 24%                  | 25%        | 23%        | 31%             | 18%        | 28%              |
| Strongly agree  | 20%        | 31%        | 14%                 | 21%                  | 17%        | 16%        | 12%             | 34%        | 21%              |
| Top 3   | <b>67%</b> | <b>71%</b> | <b>66%</b>          | <b>67%</b>           | <b>62%</b> | <b>65%</b> | <b>68%</b>      | <b>71%</b> | <b>72%</b>       |
| Mean  | 5.14       | 5.40       | 4.97                | 5.18                 | 5.05       | 4.95       | 5.14            | 5.41       | 5.23             |
| Std. Dev.   | 1.44       | 1.43       | 1.46                | 1.42                 | 1.38       | 1.50       | 1.21            | 1.54       | 1.42             |

| APNIC Membership enhances my organisation's reputation/credibility | Total      | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--|------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size  | 793        | 133        | 278                 | 382                  | 129        | 249        | 158             | 218        | 39               |
| Strongly disagree  | 3%         | 2%         | 6%                  | 1%                   | 1%         | 6%         | 2%              | 1%         | 5%               |
| 2  | 2%         | 2%         | 4%                  | 2%                   | 1%         | 3%         | 2%              | 2%         | 5%               |
| 3  | 6%         | 2%         | 7%                  | 5%                   | 11%        | 6%         | 6%              | 2%         | 5%               |
| Neutral  | 30%        | 21%        | 37%                 | 27%                  | 32%        | 37%        | 25%             | 23%        | 23%              |
| 5  | 18%        | 18%        | 19%                 | 17%                  | 19%        | 19%        | 16%             | 17%        | 21%              |
| 6  | 21%        | 22%        | 15%                 | 25%                  | 15%        | 14%        | 34%             | 23%        | 26%              |
| Strongly agree   | 21%        | 33%        | 12%                 | 23%                  | 22%        | 14%        | 16%             | 32%        | 15%              |
| Top 3  | <b>60%</b> | <b>73%</b> | <b>46%</b>          | <b>64%</b>           | <b>56%</b> | <b>47%</b> | <b>65%</b>      | <b>72%</b> | <b>62%</b>       |
| Mean   | 5.02       | 5.50       | 4.53                | 5.22                 | 4.99       | 4.57       | 5.15            | 5.50       | 4.87             |
| Std. Dev.  | 1.50       | 1.43       | 1.54                | 1.40                 | 1.41       | 1.56       | 1.38            | 1.39       | 1.63             |

Q 22. \*Thinking about your membership of APNIC, please indicate how much you AGREE with the following statements:

| APNIC is open and transparent in all of its activities | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size  | 795   | 133  | 279                 | 383                  | 130       | 250     | 158             | 218        | 39               |
| Strongly disagree                                      | 2%    | 2%   | 3%                  | 1%                   | 2%        | 3%      | 1%              | 1%         | 0%               |
| 2  | 2%    | 3%   | 1%                  | 2%                   | 2%        | 1%      | 4%              | 1%         | 3%               |
| 3  | 2%    | 2%   | 3%                  | 2%                   | 4%        | 3%      | 2%              | 2%         | 0%               |
| Neutral  | 21%   | 14%  | 25%                 | 20%                  | 24%       | 26%     | 21%             | 13%        | 21%              |
| 5  | 22%   | 20%  | 25%                 | 19%                  | 19%       | 24%     | 22%             | 19%        | 21%              |
| 6  | 28%   | 26%  | 27%                 | 30%                  | 29%       | 25%     | 32%             | 28%        | 28%              |
| Strongly agree   | 24%   | 35%  | 16%                 | 26%                  | 21%       | 18%     | 18%             | 36%        | 28%              |
| Top 3  | 73%   | 80%  | 68%                 | 75%                  | 69%       | 68%     | 72%             | 83%        | 77%              |
| Mean   | 5.38  | 5.63 | 5.15                | 5.47                 | 5.28      | 5.16    | 5.27            | 5.74       | 5.56             |
| Std. Dev.  | 1.35  | 1.40 | 1.33                | 1.32                 | 1.35      | 1.36    | 1.35            | 1.28       | 1.25             |

| APNIC is respected in the Internet community | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                                  | 796   | 134  | 279                 | 383                  | 130       | 250     | 159             | 218        | 39               |
| Strongly disagree                            | 1%    | 1%   | 2%                  | 1%                   | 1%        | 2%      | 1%              | 1%         | 0%               |
| 2  | 2%    | 1%   | 1%                  | 2%                   | 1%        | 1%      | 4%              | 1%         | 3%               |
| 3  | 1%    | 0%   | 2%                  | 1%                   | 3%        | 2%      | 1%              | 0%         | 3%               |
| Neutral                                      | 12%   | 7%   | 13%                 | 13%                  | 16%       | 14%     | 14%             | 7%         | 5%               |
| 5  | 13%   | 6%   | 14%                 | 15%                  | 18%       | 14%     | 16%             | 8%         | 13%              |
| 6  | 31%   | 21%  | 37%                 | 31%                  | 29%       | 36%     | 36%             | 24%        | 28%              |
| Strongly agree                               | 39%   | 63%  | 31%                 | 37%                  | 32%       | 32%     | 28%             | 59%        | 49%              |
| Top 3  | 84%   | 90%  | 82%                 | 83%                  | 79%       | 82%     | 81%             | 91%        | 90%              |
| Mean   | 5.86  | 6.31 | 5.69                | 5.82                 | 5.66      | 5.71    | 5.62            | 6.28       | 6.08             |
| Std. Dev.                                    | 1.30  | 1.22 | 1.34                | 1.26                 | 1.28      | 1.34    | 1.33            | 1.13       | 1.22             |

Q 23. \*Do you believe APNIC members have enough opportunity to provide feedback and input into APNIC activities?

|             | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|-------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size | 802   | 134  | 279                 | 389                  | 132       | 251     | 160             | 220        | 39               |
| Yes         | 70%   | 82%  | 59%                 | 74%                  | 71%       | 60%     | 76%             | 77%        | 67%              |
| No          | 6%    | 5%   | 6%                  | 6%                   | 8%        | 6%      | 4%              | 7%         | 3%               |
| Don't know  | 24%   | 13%  | 34%                 | 20%                  | 21%       | 34%     | 20%             | 15%        | 31%              |

Q24. \* APNIC has received suggestions to provide information on trends and benchmarks for regional Internet infrastructure and related technical and business activities. Such activity will require further member consultation and data collection from APNIC Members who choose to participate. Would you (or your organisation) be interested in being part of such activity?

|   | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                               | 798   | 132  | 279                 | 387                  | 132       | 251     | 159             | 217        | 39               |
| Yes                                       | 43%   | 67%  | 26%                 | 47%                  | 42%       | 29%     | 45%             | 61%        | 26%              |
| I'd like more information before deciding | 37%   | 23%  | 42%                 | 38%                  | 38%       | 41%     | 40%             | 29%        | 38%              |
| No  | 7%    | 2%   | 15%                 | 3%                   | 6%        | 14%     | 1%              | 3%         | 15%              |
| Don't know/I wouldn't make the decision   | 13%   | 8%   | 17%                 | 12%                  | 14%       | 16%     | 14%             | 7%         | 21%              |

Q 26. \* Thinking about service delivery from APNIC, how IMPORTANT do you think it is that APNIC establish an office or agency that could deliver some services locally in your economy/country?

|                      | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|----------------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size          | 610   | 136  | 265                 | 209                  | 44        | 251     | 138             | 138        | 39               |
| Not at all important | 4%    | 4%   | 7%                  | 1%                   | 0%        | 5%      | 2%              | 3%         | 18%              |
| 2                    | 5%    | 1%   | 8%                  | 2%                   | 2%        | 7%      | 3%              | 1%         | 15%              |
| 3                    | 5%    | 2%   | 7%                  | 5%                   | 9%        | 7%      | 3%              | 3%         | 8%               |
| Neutral              | 25%   | 16%  | 32%                 | 22%                  | 30%       | 34%     | 18%             | 13%        | 31%              |
| 5                    | 17%   | 9%   | 21%                 | 18%                  | 25%       | 21%     | 17%             | 10%        | 8%               |
| 6                    | 29%   | 39%  | 18%                 | 36%                  | 30%       | 18%     | 45%             | 35%        | 15%              |
| Extremely important  | 15%   | 29%  | 6%                  | 16%                  | 5%        | 8%      | 12%             | 36%        | 5%               |
| Top 3                | 60%   | 76%  | 45%                 | 70%                  | 59%       | 47%     | 74%             | 80%        | 28%              |
| Mean                 | 4.90  | 5.57 | 4.30                | 5.23                 | 4.84      | 4.46    | 5.27            | 5.73       | 3.62             |
| Std. Dev.            | 1.57  | 1.48 | 1.57                | 1.34                 | 1.16      | 1.51    | 1.33            | 1.42       | 1.84             |



Q 29. APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

| Network Operator Groups (NOGs) | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--------------------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size                    | 1137       | 788                  | 349               | 166        | 311                 | 660                  | 253        | 277        | 256             | 305        | 45               |
| Least focus                    | 1%         | 1%                   | 2%                | 1%         | 1%                  | 1%                   | 1%         | 1%         | 0%              | 2%         | 0%               |
| 2                              | 1%         | 1%                   | 1%                | 1%         | 0%                  | 1%                   | 2%         | 0%         | 1%              | 1%         | 0%               |
| 3                              | 2%         | 2%                   | 2%                | 0%         | 3%                  | 2%                   | 4%         | 3%         | 2%              | 0%         | 0%               |
| Neutral                        | 16%        | 15%                  | 17%               | 10%        | 19%                 | 16%                  | 21%        | 18%        | 15%             | 11%        | 11%              |
| 4                              | 20%        | 21%                  | 20%               | 12%        | 29%                 | 18%                  | 20%        | 27%        | 21%             | 12%        | 29%              |
| 5                              | 31%        | 33%                  | 27%               | 29%        | 34%                 | 30%                  | 27%        | 33%        | 34%             | 29%        | 42%              |
| Most focus                     | 29%        | 28%                  | 31%               | 47%        | 15%                 | 31%                  | 26%        | 18%        | 28%             | 45%        | 18%              |
| Top 3                          | <b>80%</b> | <b>82%</b>           | <b>78%</b>        | <b>88%</b> | <b>77%</b>          | <b>80%</b>           | <b>73%</b> | <b>78%</b> | <b>83%</b>      | <b>86%</b> | <b>89%</b>       |
| Mean                           | 5.63       | 5.66                 | 5.57              | 6.06       | 5.36                | 5.66                 | 5.40       | 5.41       | 5.70            | 5.97       | 5.67             |
| Std. Dev.                      | 1.24       | 1.19                 | 1.34              | 1.18       | 1.12                | 1.27                 | 1.36       | 1.16       | 1.12            | 1.26       | 0.90             |

| Governments | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size | 1134       | 788                  | 346               | 163        | 310                 | 661                  | 254        | 276        | 255             | 303        | 45               |
| Least focus | 2%         | 2%                   | 3%                | 1%         | 3%                  | 2%                   | 2%         | 3%         | 1%              | 2%         | 4%               |
| 2           | 2%         | 2%                   | 1%                | 1%         | 3%                  | 2%                   | 3%         | 2%         | 0%              | 2%         | 9%               |
| 3           | 3%         | 3%                   | 3%                | 2%         | 4%                  | 3%                   | 6%         | 4%         | 1%              | 2%         | 2%               |
| Neutral     | 27%        | 25%                  | 32%               | 21%        | 29%                 | 27%                  | 30%        | 26%        | 27%             | 24%        | 31%              |
| 5           | 23%        | 25%                  | 18%               | 18%        | 25%                 | 23%                  | 20%        | 28%        | 25%             | 21%        | 18%              |
| 6           | 23%        | 24%                  | 21%               | 27%        | 26%                 | 21%                  | 18%        | 26%        | 25%             | 22%        | 27%              |
| Most focus  | 20%        | 19%                  | 21%               | 29%        | 9%                  | 22%                  | 21%        | 13%        | 20%             | 27%        | 9%               |
| Top 3       | <b>66%</b> | <b>68%</b>           | <b>60%</b>        | <b>75%</b> | <b>61%</b>          | <b>66%</b>           | <b>59%</b> | <b>66%</b> | <b>70%</b>      | <b>70%</b> | <b>53%</b>       |
| Mean        | 5.15       | 5.17                 | 5.10              | 5.53       | 4.86                | 5.19                 | 5.00       | 5.02       | 5.29            | 5.33       | 4.64             |
| Std. Dev.   | 1.39       | 1.36                 | 1.45              | 1.33       | 1.35                | 1.39                 | 1.48       | 1.33       | 1.23            | 1.43       | 1.57             |

Q 29. APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

| International government-led organizations (ITU, ASEAN, UN, OECD, APECTEL, APT) | Total      | APNIC Account Holder | APNIC Stakeholder |  | LDEs       | Developed Economies | Developing Economies |  | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---|------------|----------------------|-------------------|--|------------|---------------------|----------------------|--|------------|------------|-----------------|------------|------------------|
| Sample Size   | 1125       | 782                  | 343               |  | 161        | 312                 | 652                  |  | 252        | 276        | 253             | 298        | 45               |
| Least focus   | 2%         | 1%                   | 2%                |  | 1%         | 2%                  | 2%                   |  | 2%         | 2%         | 0%              | 2%         | 4%               |
| 2   | 2%         | 2%                   | 1%                |  | 2%         | 3%                  | 2%                   |  | 2%         | 2%         | 1%              | 2%         | 4%               |
| 3   | 4%         | 4%                   | 4%                |  | 1%         | 6%                  | 4%                   |  | 4%         | 7%         | 3%              | 2%         | 2%               |
| Neutral   | 27%        | 26%                  | 29%               |  | 17%        | 34%                 | 26%                  |  | 31%        | 32%        | 26%             | 22%        | 20%              |
| 4   | 25%        | 26%                  | 21%               |  | 20%        | 29%                 | 23%                  |  | 20%        | 31%        | 25%             | 23%        | 22%              |
| 5   | 21%        | 22%                  | 19%               |  | 32%        | 17%                 | 20%                  |  | 18%        | 17%        | 23%             | 25%        | 22%              |
| Most focus  | 20%        | 19%                  | 23%               |  | 25%        | 9%                  | 24%                  |  | 24%        | 10%        | 21%             | 24%        | 24%              |
| Top 3   | <b>66%</b> | <b>67%</b>           | <b>63%</b>        |  | <b>78%</b> | <b>55%</b>          | <b>67%</b>           |  | <b>62%</b> | <b>58%</b> | <b>70%</b>      | <b>72%</b> | <b>69%</b>       |
| Mean  | 5.13       | 5.13                 | 5.14              |  | 5.50       | 4.73                | 5.23                 |  | 5.15       | 4.76       | 5.29            | 5.33       | 5.16             |
| Std. Dev.   | 1.36       | 1.34                 | 1.43              |  | 1.32       | 1.28                | 1.37                 |  | 1.42       | 1.28       | 1.25            | 1.39       | 1.62             |

| Asia-Pacific Internet technical organizations (APIX, APIA, APTLD, APCERT, APAN) | Total      | APNIC Account Holder | APNIC Stakeholder |  | LDEs       | Developed Economies | Developing Economies |  | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---|------------|----------------------|-------------------|--|------------|---------------------|----------------------|--|------------|------------|-----------------|------------|------------------|
| Sample Size   | 1136       | 788                  | 348               |  | 161        | 313                 | 662                  |  | 252        | 278        | 257             | 302        | 46               |
| Least focus   | 1%         | 1%                   | 2%                |  | 1%         | 1%                  | 1%                   |  | 2%         | 1%         | 0%              | 1%         | 2%               |
| 2   | 1%         | 1%                   | 1%                |  | 2%         | 1%                  | 1%                   |  | 2%         | 0%         | 0%              | 2%         | 0%               |
| 3   | 2%         | 2%                   | 3%                |  | 1%         | 2%                  | 2%                   |  | 2%         | 2%         | 3%              | 1%         | 2%               |
| Neutral   | 20%        | 20%                  | 19%               |  | 14%        | 22%                 | 20%                  |  | 23%        | 20%        | 19%             | 16%        | 26%              |
| 4   | 22%        | 23%                  | 18%               |  | 17%        | 29%                 | 19%                  |  | 19%        | 28%        | 23%             | 17%        | 26%              |
| 5   | 29%        | 31%                  | 24%               |  | 31%        | 31%                 | 27%                  |  | 25%        | 32%        | 30%             | 27%        | 24%              |
| Most focus  | 26%        | 22%                  | 34%               |  | 34%        | 14%                 | 30%                  |  | 27%        | 17%        | 25%             | 36%        | 20%              |
| Top 3   | <b>76%</b> | <b>77%</b>           | <b>76%</b>        |  | <b>82%</b> | <b>74%</b>          | <b>76%</b>           |  | <b>71%</b> | <b>77%</b> | <b>78%</b>      | <b>80%</b> | <b>70%</b>       |
| Mean  | 5.49       | 5.45                 | 5.58              |  | 5.71       | 5.26                | 5.55                 |  | 5.38       | 5.35       | 5.55            | 5.70       | 5.24             |
| Std. Dev.   | 1.28       | 1.23                 | 1.40              |  | 1.31       | 1.18                | 1.31                 |  | 1.41       | 1.18       | 1.14            | 1.35       | 1.30             |

Q 29. APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

| Global Internet technical organizations (IETF, IAB, Internet Society, ICANN, W3C) | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size   | 1134       | 786                  | 348               | 162        | 311                 | 661                  | 256        | 277        | 255             | 300        | 45               |
| Least focus   | 1%         | 0%                   | 2%                | 1%         | 1%                  | 1%                   | 1%         | 1%         | 0%              | 1%         | 2%               |
| 2   | 1%         | 1%                   | 1%                | 1%         | 1%                  | 2%                   | 3%         | 0%         | 0%              | 1%         | 2%               |
| 3   | 2%         | 2%                   | 2%                | 1%         | 3%                  | 2%                   | 2%         | 3%         | 3%              | 2%         | 2%               |
| Neutral   | 18%        | 17%                  | 20%               | 10%        | 17%                 | 20%                  | 24%        | 16%        | 18%             | 14%        | 9%               |
| 4   | 21%        | 21%                  | 22%               | 23%        | 25%                 | 19%                  | 18%        | 25%        | 25%             | 18%        | 20%              |
| 5   | 29%        | 32%                  | 24%               | 28%        | 36%                 | 27%                  | 24%        | 36%        | 31%             | 25%        | 36%              |
| Most focus  | 27%        | 27%                  | 29%               | 37%        | 17%                 | 30%                  | 28%        | 18%        | 22%             | 39%        | 29%              |
| Top 3   | <b>78%</b> | <b>79%</b>           | <b>75%</b>        | <b>88%</b> | <b>78%</b>          | <b>75%</b>           | <b>70%</b> | <b>79%</b> | <b>78%</b>      | <b>82%</b> | <b>84%</b>       |
| Mean  | 5.55       | 5.58                 | 5.47              | 5.84       | 5.41                | 5.54                 | 5.39       | 5.45       | 5.51            | 5.79       | 5.64             |
| Std. Dev.   | 1.26       | 1.21                 | 1.36              | 1.20       | 1.18                | 1.30                 | 1.38       | 1.17       | 1.13            | 1.29       | 1.37             |

| Internet business community (external to APNIC membership) | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size  | 1137       | 786                  | 351               | 162        | 311                 | 664                  | 255        | 277        | 256             | 303        | 45               |
| Least focus  | 1%         | 1%                   | 2%                | 1%         | 2%                  | 1%                   | 2%         | 3%         | 0%              | 1%         | 0%               |
| 2  | 1%         | 1%                   | 1%                | 1%         | 2%                  | 1%                   | 1%         | 1%         | 1%              | 1%         | 4%               |
| 3  | 4%         | 4%                   | 5%                | 2%         | 7%                  | 4%                   | 5%         | 5%         | 3%              | 2%         | 11%              |
| Neutral  | 25%        | 25%                  | 25%               | 18%        | 31%                 | 24%                  | 28%        | 32%        | 21%             | 20%        | 22%              |
| 4  | 23%        | 24%                  | 21%               | 22%        | 27%                 | 22%                  | 20%        | 27%        | 27%             | 19%        | 27%              |
| 5  | 25%        | 26%                  | 23%               | 28%        | 25%                 | 24%                  | 21%        | 24%        | 28%             | 25%        | 27%              |
| Most focus   | 20%        | 18%                  | 24%               | 27%        | 6%                  | 25%                  | 23%        | 9%         | 20%             | 30%        | 9%               |
| Top 3  | <b>68%</b> | <b>68%</b>           | <b>68%</b>        | <b>77%</b> | <b>58%</b>          | <b>70%</b>           | <b>64%</b> | <b>59%</b> | <b>75%</b>      | <b>75%</b> | <b>62%</b>       |
| Mean   | 5.22       | 5.20                 | 5.26              | 5.50       | 4.79                | 5.35                 | 5.19       | 4.85       | 5.36            | 5.52       | 4.87             |
| Std. Dev.  | 1.33       | 1.30                 | 1.38              | 1.30       | 1.24                | 1.33                 | 1.38       | 1.28       | 1.19            | 1.35       | 1.31             |

Q 29. APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

| Universities | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size  | 1132       | 786                  | 346               | 162        | 311                 | 659                  | 253        | 277        | 253             | 303        | 45               |
| Least focus  | 2%         | 1%                   | 3%                | 2%         | 3%                  | 2%                   | 2%         | 3%         | 0%              | 2%         | 2%               |
| 2            | 2%         | 2%                   | 1%                | 2%         | 3%                  | 1%                   | 2%         | 2%         | 0%              | 1%         | 9%               |
| 3            | 3%         | 3%                   | 3%                | 1%         | 4%                  | 3%                   | 4%         | 3%         | 3%              | 2%         | 4%               |
| Neutral      | 23%        | 21%                  | 26%               | 18%        | 24%                 | 24%                  | 28%        | 22%        | 23%             | 20%        | 20%              |
| 4            | 24%        | 26%                  | 18%               | 23%        | 31%                 | 21%                  | 21%        | 31%        | 25%             | 18%        | 29%              |
| 5            | 25%        | 26%                  | 23%               | 26%        | 26%                 | 24%                  | 21%        | 26%        | 27%             | 25%        | 20%              |
| Most focus   | 21%        | 20%                  | 25%               | 28%        | 10%                 | 25%                  | 21%        | 13%        | 21%             | 31%        | 16%              |
| Top 3        | <b>70%</b> | <b>72%</b>           | <b>66%</b>        | <b>77%</b> | <b>66%</b>          | <b>70%</b>           | <b>63%</b> | <b>70%</b> | <b>74%</b>      | <b>74%</b> | <b>64%</b>       |
| Mean         | 5.25       | 5.26                 | 5.22              | 5.48       | 4.93                | 5.35                 | 5.11       | 5.05       | 5.38            | 5.49       | 4.87             |
| Std. Dev.    | 1.37       | 1.31                 | 1.50              | 1.39       | 1.34                | 1.36                 | 1.44       | 1.33       | 1.20            | 1.43       | 1.55             |

| Civil society, non-profit and other community groups | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size  | 1132       | 786                  | 346               | 163        | 312                 | 657                  | 253        | 278        | 253             | 302        | 45               |
| Least focus  | 4%         | 3%                   | 4%                | 3%         | 6%                  | 2%                   | 4%         | 6%         | 1%              | 3%         | 4%               |
| 2  | 3%         | 2%                   | 3%                | 4%         | 3%                  | 2%                   | 3%         | 3%         | 2%              | 3%         | 0%               |
| 3  | 4%         | 5%                   | 2%                | 2%         | 6%                  | 4%                   | 5%         | 5%         | 4%              | 2%         | 9%               |
| Neutral  | 35%        | 37%                  | 32%               | 29%        | 44%                 | 33%                  | 32%        | 45%        | 34%             | 31%        | 33%              |
| 4  | 24%        | 25%                  | 21%               | 22%        | 25%                 | 24%                  | 22%        | 22%        | 28%             | 22%        | 31%              |
| 5  | 18%        | 18%                  | 21%               | 28%        | 13%                 | 19%                  | 17%        | 12%        | 21%             | 23%        | 20%              |
| Most focus   | 12%        | 10%                  | 17%               | 11%        | 3%                  | 17%                  | 18%        | 6%         | 10%             | 16%        | 2%               |
| Top 3  | <b>54%</b> | <b>52%</b>           | <b>59%</b>        | <b>61%</b> | <b>40%</b>          | <b>59%</b>           | <b>57%</b> | <b>41%</b> | <b>59%</b>      | <b>60%</b> | <b>53%</b>       |
| Mean   | 4.77       | 4.69                 | 4.95              | 4.90       | 4.29                | 4.97                 | 4.88       | 4.37       | 4.90            | 4.97       | 4.56             |
| Std. Dev.  | 1.39       | 1.35                 | 1.47              | 1.41       | 1.30                | 1.38                 | 1.49       | 1.37       | 1.22            | 1.42       | 1.24             |

Q 29. APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

| Other Regional Internet Registries (AFRINIC, ARIN, LACNIC, RIPE NCC) | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size  | 1131       | 787                  | 344               | 161        | 311                 | 659                  | 253        | 276        | 256             | 300        | 45               |
| Least focus  | 2%         | 1%                   | 2%                | 1%         | 2%                  | 2%                   | 3%         | 3%         | 0%              | 1%         | 0%               |
| 2  | 2%         | 2%                   | 2%                | 2%         | 2%                  | 2%                   | 2%         | 2%         | 2%              | 2%         | 0%               |
| 3  | 3%         | 2%                   | 4%                | 1%         | 2%                  | 3%                   | 5%         | 2%         | 3%              | 1%         | 7%               |
| Neutral  | 22%        | 21%                  | 25%               | 16%        | 27%                 | 21%                  | 24%        | 27%        | 24%             | 16%        | 16%              |
| 4  | 21%        | 23%                  | 17%               | 27%        | 22%                 | 19%                  | 19%        | 22%        | 23%             | 22%        | 13%              |
| 5  | 25%        | 26%                  | 24%               | 24%        | 27%                 | 25%                  | 24%        | 28%        | 24%             | 25%        | 29%              |
| Most focus   | 25%        | 25%                  | 26%               | 29%        | 18%                 | 27%                  | 24%        | 17%        | 24%             | 33%        | 36%              |
| Top 3  | <b>71%</b> | <b>73%</b>           | <b>67%</b>        | <b>80%</b> | <b>67%</b>          | <b>71%</b>           | <b>66%</b> | <b>67%</b> | <b>71%</b>      | <b>80%</b> | <b>78%</b>       |
| Mean   | 5.35       | 5.39                 | 5.27              | 5.55       | 5.20                | 5.38                 | 5.20       | 5.15       | 5.34            | 5.62       | 5.71             |
| Std. Dev.  | 1.38       | 1.33                 | 1.48              | 1.28       | 1.33                | 1.42                 | 1.51       | 1.36       | 1.31            | 1.32       | 1.29             |

| Law enforcement and other public safety agencies | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|--|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size                                      | 1130       | 785                  | 345               | 162        | 312                 | 656                  | 253        | 276        | 254             | 300        | 46               |
| Least focus                                      | 3%         | 3%                   | 3%                | 2%         | 5%                  | 2%                   | 2%         | 5%         | 1%              | 3%         | 4%               |
| 2  | 3%         | 3%                   | 3%                | 2%         | 4%                  | 2%                   | 4%         | 3%         | 2%              | 3%         | 7%               |
| 3  | 4%         | 4%                   | 4%                | 2%         | 6%                  | 3%                   | 4%         | 7%         | 3%              | 2%         | 4%               |
| Neutral  | 29%        | 29%                  | 29%               | 23%        | 33%                 | 28%                  | 31%        | 31%        | 31%             | 23%        | 35%              |
| 4  | 23%        | 23%                  | 22%               | 20%        | 24%                 | 23%                  | 21%        | 25%        | 27%             | 20%        | 20%              |
| 5  | 23%        | 23%                  | 23%               | 26%        | 21%                 | 23%                  | 18%        | 22%        | 26%             | 24%        | 24%              |
| Most focus                                       | 16%        | 15%                  | 16%               | 24%        | 6%                  | 18%                  | 21%        | 8%         | 10%             | 24%        | 7%               |
| Top 3  | <b>61%</b> | <b>62%</b>           | <b>61%</b>        | <b>70%</b> | <b>52%</b>          | <b>64%</b>           | <b>60%</b> | <b>55%</b> | <b>63%</b>      | <b>69%</b> | <b>50%</b>       |
| Mean   | 4.97       | 4.97                 | 4.97              | 5.32       | 4.56                | 5.08                 | 5.04       | 4.64       | 5.00            | 5.25       | 4.57             |
| Std. Dev.  | 1.42       | 1.42                 | 1.44              | 1.40       | 1.43                | 1.38                 | 1.44       | 1.44       | 1.19            | 1.49       | 1.47             |

Q 29. APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

| Industry associations | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size           | 1125       | 784                  | 341               | 161        | 311                 | 653                  | 251        | 277        | 252             | 299        | 45               |
| Least focus           | 2%         | 1%                   | 2%                | 2%         | 2%                  | 1%                   | 1%         | 2%         | 0%              | 3%         | 2%               |
| 2                     | 2%         | 2%                   | 1%                | 2%         | 1%                  | 2%                   | 4%         | 1%         | 1%              | 1%         | 0%               |
| 3                     | 5%         | 4%                   | 5%                | 4%         | 5%                  | 4%                   | 6%         | 3%         | 3%              | 4%         | 18%              |
| Neutral               | 28%        | 28%                  | 27%               | 22%        | 30%                 | 28%                  | 30%        | 31%        | 31%             | 22%        | 16%              |
| 4                     | 25%        | 26%                  | 22%               | 23%        | 27%                 | 24%                  | 22%        | 29%        | 25%             | 24%        | 22%              |
| 5                     | 23%        | 24%                  | 21%               | 28%        | 25%                 | 21%                  | 17%        | 25%        | 27%             | 23%        | 29%              |
| Most focus            | 16%        | 14%                  | 21%               | 18%        | 9%                  | 20%                  | 21%        | 9%         | 12%             | 23%        | 13%              |
| Top 3                 | <b>64%</b> | <b>65%</b>           | <b>64%</b>        | <b>69%</b> | <b>61%</b>          | <b>65%</b>           | <b>59%</b> | <b>63%</b> | <b>65%</b>      | <b>70%</b> | <b>64%</b>       |
| Mean                  | 5.08       | 5.06                 | 5.13              | 5.17       | 4.90                | 5.15                 | 5.02       | 4.96       | 5.11            | 5.24       | 4.96             |
| Std. Dev.             | 1.31       | 1.26                 | 1.43              | 1.39       | 1.24                | 1.32                 | 1.43       | 1.19       | 1.15            | 1.43       | 1.45             |

Q31. Under its Bylaws, one of the objectives of APNIC is to provide training and educational opportunities that further Members' technical knowledge, skills and policy understanding of the industry. Thinking about the provision of training services by APNIC, how much do you AGREE that:



| The provision of training is an important APNIC function | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size  | 797   | 134  | 277                 | 386                  | 131       | 249     | 159             | 219        | 39               |
| Strongly disagree  | 1%    | 0%   | 2%                  | 1%                   | 2%        | 2%      | 0%              | 1%         | 3%               |
| 2  | 1%    | 1%   | 2%                  | 1%                   | 3%        | 2%      | 1%              | 0%         | 0%               |
| 3  | 2%    | 0%   | 2%                  | 2%                   | 3%        | 2%      | 1%              | 0%         | 0%               |
| Neutral  | 13%   | 6%   | 16%                 | 12%                  | 20%       | 15%     | 10%             | 7%         | 15%              |
| 5  | 16%   | 10%  | 23%                 | 12%                  | 16%       | 21%     | 14%             | 9%         | 21%              |
| 6  | 24%   | 15%  | 29%                 | 24%                  | 24%       | 28%     | 30%             | 16%        | 23%              |
| Strongly agree   | 44%   | 68%  | 26%                 | 48%                  | 32%       | 31%     | 44%             | 67%        | 38%              |
| Top 3  | 83%   | 93%  | 78%                 | 84%                  | 72%       | 80%     | 88%             | 92%        | 82%              |
| Mean   | 5.87  | 6.43 | 5.48                | 5.96                 | 5.44      | 5.58    | 6.03            | 6.38       | 5.74             |
| Std. Dev.  | 1.32  | 0.98 | 1.35                | 1.31                 | 1.52      | 1.35    | 1.10            | 1.10       | 1.35             |

| Training offered by APNIC should be responsive to Member requests and needs | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size   | 797   | 134  | 277                 | 386                  | 131       | 249     | 159             | 219        | 39               |
| Strongly disagree   | 1%    | 0%   | 1%                  | 0%                   | 1%        | 2%      | 0%              | 0%         | 0%               |
| 2   | 1%    | 1%   | 1%                  | 1%                   | 4%        | 1%      | 0%              | 1%         | 0%               |
| 3   | 2%    | 0%   | 2%                  | 2%                   | 3%        | 2%      | 1%              | 0%         | 0%               |
| Neutral   | 11%   | 7%   | 13%                 | 11%                  | 18%       | 11%     | 8%              | 10%        | 13%              |
| 5   | 17%   | 9%   | 23%                 | 16%                  | 26%       | 22%     | 13%             | 10%        | 13%              |
| 6   | 31%   | 25%  | 36%                 | 29%                  | 25%       | 36%     | 35%             | 24%        | 36%              |
| Strongly agree  | 37%   | 57%  | 23%                 | 41%                  | 24%       | 25%     | 43%             | 55%        | 38%              |
| Top 3   | 85%   | 92%  | 82%                 | 85%                  | 75%       | 84%     | 91%             | 89%        | 87%              |
| Mean  | 5.85  | 6.31 | 5.56                | 5.91                 | 5.34      | 5.62    | 6.13            | 6.20       | 6.00             |
| Std. Dev.   | 1.21  | 1.00 | 1.24                | 1.20                 | 1.36      | 1.24    | 0.97            | 1.10       | 1.03             |

Q31. Under its Bylaws, one of the objectives of APNIC is to provide training and educational opportunities that further Members' technical knowledge, skills and policy understanding of the industry. Thinking about the provision of training services by APNIC, how much do you AGREE that:



| APNIC should subsidise training to increase affordability where necessary | Total      | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|---|------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| <b>Subsidise training</b>   | <b>794</b> | <b>133</b> | <b>277</b>          | <b>384</b>           | <b>130</b> | <b>249</b> | <b>159</b>      | <b>217</b> | <b>39</b>        |
| <b>Strongly disagree</b>  | 2%         | 0%         | 4%                  | 1%                   | 2%         | 3%         | 0%              | 0%         | 8%               |
| <b>2</b>  | 1%         | 1%         | 1%                  | 2%                   | 3%         | 1%         | 1%              | 1%         | 0%               |
| <b>3</b>  | 2%         | 0%         | 3%                  | 2%                   | 3%         | 4%         | 1%              | 0%         | 0%               |
| <b>Neutral</b>  | 15%        | 7%         | 23%                 | 13%                  | 21%        | 20%        | 11%             | 10%        | 15%              |
| <b>5</b>  | 15%        | 7%         | 24%                 | 11%                  | 15%        | 22%        | 13%             | 6%         | 28%              |
| <b>6</b>  | 26%        | 23%        | 26%                 | 26%                  | 28%        | 24%        | 30%             | 21%        | 33%              |
| <b>Strongly agree</b>   | 39%        | 63%        | 19%                 | 45%                  | 28%        | 26%        | 45%             | 61%        | 15%              |
| <b>Top 3</b>  | <b>79%</b> | <b>92%</b> | <b>69%</b>          | <b>82%</b>           | <b>71%</b> | <b>72%</b> | <b>87%</b>      | <b>88%</b> | <b>77%</b>       |
| Mean  | 5.73       | 6.40       | 5.18                | 5.91                 | 5.38       | 5.33       | 6.04            | 6.28       | 5.18             |
| Std. Dev.   | 1.39       | 0.97       | 1.43                | 1.34                 | 1.50       | 1.44       | 1.10            | 1.16       | 1.54             |



Q32. To reduce reliance on Member funds, do you believe APNIC should seek additional external resources to help build its training and technical assistance services?



|             | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|-------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size | 804   | 135  | 279                 | 390                  | 133       | 251     | 160             | 221        | 39               |
| Yes         | 72%   | 85%  | 61%                 | 75%                  | 68%       | 64%     | 80%             | 81%        | 54%              |
| No          | 7%    | 4%   | 11%                 | 6%                   | 6%        | 10%     | 6%              | 5%         | 18%              |
| Don't know  | 21%   | 11%  | 27%                 | 19%                  | 26%       | 26%     | 14%             | 14%        | 28%              |

Q33. Have you undertaken APNIC training in the last twelve (12) months?



|             | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|-------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size | 804   | 135  | 279                 | 390                  | 133       | 251     | 160             | 221        | 39               |
| Yes         | 20%   | 32%  | 8%                  | 24%                  | 26%       | 11%     | 27%             | 23%        | 5%               |
| No          | 80%   | 68%  | 92%                 | 76%                  | 74%       | 89%     | 73%             | 77%        | 95%              |

Q34. Thinking about the training you have undertaken, please indicate how much you AGREE that APNIC provides:



| Relevant and useful training programs | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---------------------------------------|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                           | 156   | 43   | 21                  | 92                   | 33        | 27      | 43              | 51         | 2                |
| Strongly disagree                     | 1%    | 0%   | 0%                  | 1%                   | 3%        | 0%      | 0%              | 0%         | 0%               |
| 2                                     | 1%    | 2%   | 0%                  | 1%                   | 3%        | 0%      | 0%              | 2%         | 0%               |
| 3                                     | 1%    | 0%   | 0%                  | 1%                   | 3%        | 0%      | 0%              | 0%         | 0%               |
| Neutral                               | 8%    | 7%   | 5%                  | 9%                   | 15%       | 4%      | 9%              | 4%         | 0%               |
| 5                                     | 12%   | 7%   | 14%                 | 14%                  | 24%       | 7%      | 12%             | 8%         | 0%               |
| 6                                     | 30%   | 16%  | 48%                 | 33%                  | 21%       | 48%     | 33%             | 25%        | 0%               |
| Strongly agree                        | 47%   | 67%  | 33%                 | 41%                  | 30%       | 41%     | 47%             | 61%        | 100%             |
| Top 3                                 | 90%   | 91%  | 95%                 | 88%                  | 76%       | 96%     | 91%             | 94%        | 100%             |
| Mean                                  | 6.10  | 6.37 | 6.10                | 5.97                 | 5.39      | 6.26    | 6.16            | 6.37       | 7.00             |
| Std. Dev.                             | 1.15  | 1.13 | 0.83                | 1.21                 | 1.54      | 0.76    | 0.97            | 1.02       | -                |

| Training programs in a suitable format | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                            | 155   | 43   | 21                  | 91                   | 32        | 27      | 43              | 51         | 2                |
| Strongly disagree                      | 1%    | 0%   | 0%                  | 2%                   | 6%        | 0%      | 0%              | 0%         | 0%               |
| 2                                      | 2%    | 2%   | 5%                  | 1%                   | 3%        | 4%      | 0%              | 2%         | 0%               |
| 3                                      | 2%    | 0%   | 0%                  | 3%                   | 3%        | 0%      | 0%              | 4%         | 0%               |
| Neutral                                | 9%    | 9%   | 5%                  | 10%                  | 13%       | 4%      | 9%              | 10%        | 0%               |
| 5                                      | 12%   | 5%   | 24%                 | 13%                  | 19%       | 15%     | 12%             | 6%         | 50%              |
| 6                                      | 31%   | 21%  | 43%                 | 33%                  | 31%       | 44%     | 35%             | 22%        | 0%               |
| Strongly agree                         | 43%   | 63%  | 24%                 | 37%                  | 25%       | 33%     | 44%             | 57%        | 50%              |
| Top 3                                  | 86%   | 88%  | 90%                 | 84%                  | 75%       | 93%     | 91%             | 84%        | 100%             |
| Mean                                   | 5.92  | 6.30 | 5.71                | 5.79                 | 5.28      | 5.96    | 6.14            | 6.12       | 6.00             |
| Std. Dev.                              | 1.31  | 1.17 | 1.19                | 1.38                 | 1.69      | 1.13    | 0.97            | 1.31       | 1.41             |

Q34. Thinking about the training you have undertaken, please indicate how much you AGREE that APNIC provides:



| Training programs that represent value for money | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                                      | 155   | 42   | 21                  | 92                   | 33        | 27      | 43              | 50         | 2                |
| Strongly disagree                                | 1%    | 2%   | 0%                  | 0%                   | 0%        | 0%      | 2%              | 0%         | 0%               |
| 2  | 2%    | 0%   | 0%                  | 3%                   | 6%        | 0%      | 0%              | 2%         | 0%               |
| 3  | 1%    | 0%   | 0%                  | 2%                   | 6%        | 0%      | 0%              | 0%         | 0%               |
| Neutral  | 15%   | 12%  | 10%                 | 18%                  | 18%       | 7%      | 14%             | 20%        | 0%               |
| 5  | 11%   | 7%   | 14%                 | 12%                  | 12%       | 11%     | 14%             | 6%         | 50%              |
| 6  | 31%   | 29%  | 38%                 | 30%                  | 27%       | 41%     | 37%             | 24%        | 0%               |
| Strongly agree                                   | 39%   | 50%  | 38%                 | 34%                  | 30%       | 41%     | 33%             | 48%        | 50%              |
| Top 3  | 81%   | 86%  | 90%                 | 76%                  | 70%       | 93%     | 84%             | 78%        | 100%             |
| Mean   | 5.82  | 6.07 | 6.05                | 5.65                 | 5.39      | 6.15    | 5.79            | 5.94       | 6.00             |
| Std. Dev.  | 1.30  | 1.30 | 0.97                | 1.35                 | 1.54      | 0.91    | 1.26            | 1.30       | 1.41             |

| A sufficient number of training programs | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|--|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                              | 155   | 43   | 21                  | 91                   | 32        | 27      | 43              | 51         | 2                |
| Strongly disagree                        | 1%    | 0%   | 0%                  | 2%                   | 3%        | 0%      | 0%              | 2%         | 0%               |
| 2  | 3%    | 2%   | 5%                  | 2%                   | 3%        | 4%      | 2%              | 2%         | 0%               |
| 3  | 2%    | 2%   | 0%                  | 2%                   | 0%        | 0%      | 5%              | 2%         | 0%               |
| Neutral                                  | 12%   | 5%   | 10%                 | 16%                  | 28%       | 7%      | 12%             | 6%         | 0%               |
| 5  | 18%   | 12%  | 33%                 | 18%                  | 16%       | 33%     | 16%             | 14%        | 0%               |
| 6  | 30%   | 35%  | 29%                 | 27%                  | 16%       | 22%     | 37%             | 35%        | 50%              |
| Strongly agree                           | 34%   | 44%  | 24%                 | 32%                  | 34%       | 33%     | 28%             | 39%        | 50%              |
| Top 3                                    | 82%   | 91%  | 86%                 | 77%                  | 66%       | 89%     | 81%             | 88%        | 100%             |
| Mean                                     | 5.69  | 6.07 | 5.52                | 5.55                 | 5.34      | 5.70    | 5.65            | 5.90       | 6.50             |
| Std. Dev.                                | 1.36  | 1.16 | 1.25                | 1.44                 | 1.60      | 1.23    | 1.27            | 1.33       | 0.71             |

Q35. If APNIC could support your organisation with your technical challenges through training, extended technical workshops and/or direct technical assistance, which of the following topics would assist your organisation?



|   | Total | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Training Topics                                       | 799   | 136  | 274                 | 389                  | 133       | 247     | 159             | 222        | 38               |
| Sample Size   | 4382  | 960  | 1259                | 2163                 | 560       | 1254    | 992             | 1434       | 142              |
| Network security                                      | 70%   | 85%  | 61%                 | 71%                  | 59%       | 66%     | 76%             | 82%        | 42%              |
| IPv6 deployment planning                              | 55%   | 65%  | 51%                 | 55%                  | 39%       | 55%     | 55%             | 69%        | 37%              |
| Routing protocols (BGP, OSPF/IS-IS etc.)              | 45%   | 63%  | 37%                 | 44%                  | 32%       | 42%     | 53%             | 53%        | 24%              |
| Optimising network architecture                       | 43%   | 54%  | 37%                 | 44%                  | 28%       | 44%     | 50%             | 50%        | 24%              |
| DNS & DNSSEC  | 41%   | 47%  | 44%                 | 37%                  | 29%       | 47%     | 39%             | 43%        | 39%              |
| Software Defined Networking (SDN)                     | 41%   | 36%  | 38%                 | 44%                  | 39%       | 38%     | 47%             | 42%        | 32%              |
| Virtualisation of network functions and/or services   | 36%   | 49%  | 23%                 | 40%                  | 29%       | 28%     | 45%             | 45%        | 11%              |
| MPLS  | 34%   | 57%  | 20%                 | 35%                  | 24%       | 25%     | 42%             | 47%        | 8%               |
| Best practices for inter-domain routing               | 33%   | 42%  | 30%                 | 32%                  | 26%       | 33%     | 34%             | 36%        | 32%              |
| QoS   | 32%   | 48%  | 22%                 | 34%                  | 26%       | 27%     | 42%             | 39%        | 5%               |
| Incident handling and response                        | 23%   | 32%  | 22%                 | 20%                  | 11%       | 23%     | 25%             | 28%        | 24%              |
| RPSL and Routing Registry                             | 22%   | 26%  | 19%                 | 24%                  | 22%       | 19%     | 23%             | 24%        | 37%              |
| IXP design, operation and management                  | 20%   | 31%  | 9%                  | 24%                  | 16%       | 13%     | 35%             | 22%        | 8%               |
| CERT/CSIRT operation and management                   | 18%   | 22%  | 16%                 | 18%                  | 13%       | 18%     | 23%             | 18%        | 11%              |
| Training of trainers in any of the topics listed here | 16%   | 23%  | 8%                  | 19%                  | 8%        | 11%     | 17%             | 26%        | 11%              |
| RPKI  | 15%   | 26%  | 14%                 | 12%                  | 11%       | 13%     | 16%             | 19%        | 18%              |
| None of these   | 4%    | 0%   | 7%                  | 3%                   | 5%        | 5%      | 1%              | 2%         | 13%              |
| Other   | 1%    | 0%   | 2%                  | 1%                   | 3%        | 2%      | 1%              | 0%         | 0%               |

Q37. **\*\*Can you tell us the MAIN reasons why you have not participated in APNIC’s Policy Development Process for Internet Number Resource policies?**



|   | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|---|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size   | 1121  | 773                  | 348               | 160  | 308                 | 653                  | 251       | 277     | 244             | 304        | 44               |
| Total Mentions                                      | 1889  | 1344                 | 545               | 290  | 520                 | 1079                 | 401       | 487     | 408             | 526        | 66               |
| I trust the community to develop the right policies | 36%   | 35%                  | 39%               | 47%  | 26%                 | 38%                  | 41%       | 27%     | 37%             | 39%        | 32%              |
| I wasn't aware I could participate                  | 32%   | 34%                  | 26%               | 32%  | 31%                 | 32%                  | 19%       | 37%     | 26%             | 44%        | 18%              |
| I don't know enough about the process               | 45%   | 45%                  | 44%               | 55%  | 45%                 | 43%                  | 37%       | 48%     | 50%             | 49%        | 23%              |
| It's too difficult to participate in the process    | 10%   | 11%                  | 8%                | 14%  | 7%                  | 11%                  | 17%       | 6%      | 9%              | 10%        | 11%              |
| No-one has asked me to participate                  | 22%   | 22%                  | 23%               | 22%  | 24%                 | 21%                  | 17%       | 26%     | 23%             | 23%        | 18%              |
| I don't have time to participate                    | 18%   | 21%                  | 11%               | 6%   | 28%                 | 16%                  | 23%       | 26%     | 16%             | 5%         | 34%              |
| Other   | 3%    | 3%                   | 4%                | 5%   | 3%                  | 3%                   | 2%        | 3%      | 5%              | 3%         | 9%               |
| I'm not interested in participating                 | 2%    | 2%                   | 2%                | 1%   | 4%                  | 2%                   | 4%        | 3%      | 2%              | 0%         | 5%               |

Q39. \*\*How would you assess your participation in APNIC’s Policy Development Process for Internet Number Resource policies?



| Ease of understanding | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size           | 48         | 27                   | 21                | 8          | 8                   | 32                   | 16         | 4          | 12              | 14         | 2                |
| Poor                  | 2%         | 4%                   | 0%                | 0%         | 0%                  | 3%                   | 6%         | 0%         | 0%              | 0%         | 0%               |
| 2                     | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 3                     | 2%         | 0%                   | 5%                | 0%         | 0%                  | 3%                   | 0%         | 0%         | 0%              | 7%         | 0%               |
| Neutral               | 15%        | 19%                  | 10%               | 13%        | 38%                 | 9%                   | 13%        | 25%        | 8%              | 14%        | 50%              |
| 5                     | 17%        | 7%                   | 29%               | 0%         | 25%                 | 19%                  | 25%        | 0%         | 25%             | 7%         | 0%               |
| 6                     | 33%        | 37%                  | 29%               | 38%        | 38%                 | 31%                  | 25%        | 75%        | 33%             | 29%        | 50%              |
| Excellent             | 31%        | 33%                  | 29%               | 50%        | 0%                  | 34%                  | 31%        | 0%         | 33%             | 43%        | 0%               |
| Top 3                 | <b>81%</b> | <b>78%</b>           | <b>86%</b>        | <b>88%</b> | <b>63%</b>          | <b>84%</b>           | <b>81%</b> | <b>75%</b> | <b>92%</b>      | <b>79%</b> | <b>50%</b>       |
| Mean                  | 5.69       | 5.70                 | 5.67              | 6.25       | 5.00                | 5.72                 | 5.50       | 5.50       | 5.92            | 5.86       | 5.00             |
| Std. Dev.             | 1.31       | 1.44                 | 1.15              | 1.04       | 0.93                | 1.40                 | 1.59       | 1.00       | 1.00            | 1.35       | 1.41             |

| Ease of participation | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size           | 48         | 27                   | 21                | 8          | 8                   | 32                   | 16         | 4          | 12              | 14         | 2                |
| Poor                  | 2%         | 4%                   | 0%                | 0%         | 0%                  | 3%                   | 6%         | 0%         | 0%              | 0%         | 0%               |
| 2                     | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 3                     | 6%         | 7%                   | 5%                | 0%         | 25%                 | 3%                   | 6%         | 25%        | 0%              | 7%         | 0%               |
| Neutral               | 10%        | 7%                   | 14%               | 13%        | 0%                  | 13%                  | 13%        | 0%         | 8%              | 14%        | 0%               |
| 5                     | 21%        | 22%                  | 19%               | 13%        | 38%                 | 19%                  | 19%        | 25%        | 33%             | 7%         | 50%              |
| 6                     | 35%        | 44%                  | 24%               | 50%        | 38%                 | 31%                  | 19%        | 50%        | 42%             | 43%        | 50%              |
| Excellent             | 25%        | 15%                  | 38%               | 25%        | 0%                  | 31%                  | 38%        | 0%         | 17%             | 29%        | 0%               |
| Top 3                 | <b>81%</b> | <b>81%</b>           | <b>81%</b>        | <b>88%</b> | <b>75%</b>          | <b>81%</b>           | <b>75%</b> | <b>75%</b> | <b>92%</b>      | <b>79%</b> | <b>100%</b>      |
| Mean                  | 5.54       | 5.37                 | 5.76              | 5.88       | 4.88                | 5.63                 | 5.44       | 5.00       | 5.67            | 5.71       | 5.50             |
| Std. Dev.             | 1.34       | 1.39                 | 1.26              | 0.99       | 1.25                | 1.41                 | 1.75       | 1.41       | 0.89            | 1.27       | 0.71             |

Q39. \*\*How would you assess your participation in APNIC’s Policy Development Process for Internet Number Resource policies?



| Ease of following discussions | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|-------------------------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                   | 48    | 27                   | 21                | 8    | 8                   | 32                   | 16        | 4       | 12              | 14         | 2                |
| Poor                          | 2%    | 4%                   | 0%                | 0%   | 0%                  | 3%                   | 6%        | 0%      | 0%              | 0%         | 0%               |
| 2                             | 2%    | 4%                   | 0%                | 0%   | 13%                 | 0%                   | 0%        | 25%     | 0%              | 0%         | 0%               |
| 3                             | 2%    | 0%                   | 5%                | 0%   | 0%                  | 3%                   | 0%        | 0%      | 0%              | 7%         | 0%               |
| Neutral                       | 15%   | 15%                  | 14%               | 13%  | 25%                 | 13%                  | 13%       | 0%      | 17%             | 14%        | 50%              |
| 5                             | 19%   | 19%                  | 19%               | 13%  | 25%                 | 19%                  | 25%       | 0%      | 33%             | 7%         | 0%               |
| 6                             | 33%   | 41%                  | 24%               | 25%  | 38%                 | 34%                  | 25%       | 75%     | 33%             | 29%        | 50%              |
| Excellent                     | 27%   | 19%                  | 38%               | 50%  | 0%                  | 28%                  | 31%       | 0%      | 17%             | 43%        | 0%               |
| Top 3                         | 79%   | 78%                  | 81%               | 88%  | 63%                 | 81%                  | 81%       | 75%     | 83%             | 79%        | 50%              |
| Mean                          | 5.54  | 5.37                 | 5.76              | 6.13 | 4.75                | 5.59                 | 5.50      | 5.00    | 5.50            | 5.86       | 5.00             |
| Std. Dev.                     | 1.38  | 1.47                 | 1.26              | 1.13 | 1.39                | 1.39                 | 1.59      | 2.00    | 1.00            | 1.35       | 1.41             |

| Overall Effectiveness | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|-----------------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size           | 48    | 27                   | 21                | 8    | 8                   | 32                   | 16        | 4       | 12              | 14         | 2                |
| Poor                  | 2%    | 4%                   | 0%                | 0%   | 0%                  | 3%                   | 6%        | 0%      | 0%              | 0%         | 0%               |
| 2                     | 0%    | 0%                   | 0%                | 0%   | 0%                  | 0%                   | 0%        | 0%      | 0%              | 0%         | 0%               |
| 3                     | 4%    | 4%                   | 5%                | 0%   | 13%                 | 3%                   | 0%        | 0%      | 0%              | 7%         | 50%              |
| Neutral               | 15%   | 11%                  | 19%               | 0%   | 13%                 | 19%                  | 13%       | 25%     | 25%             | 7%         | 0%               |
| 5                     | 19%   | 19%                  | 19%               | 13%  | 38%                 | 16%                  | 31%       | 0%      | 25%             | 7%         | 0%               |
| 6                     | 29%   | 37%                  | 19%               | 38%  | 38%                 | 25%                  | 25%       | 75%     | 17%             | 29%        | 50%              |
| Excellent             | 31%   | 26%                  | 38%               | 50%  | 0%                  | 34%                  | 25%       | 0%      | 33%             | 50%        | 0%               |
| Top 3                 | 79%   | 81%                  | 76%               | 100% | 75%                 | 75%                  | 81%       | 75%     | 75%             | 86%        | 50%              |
| Mean                  | 5.60  | 5.56                 | 5.67              | 6.38 | 5.00                | 5.56                 | 5.38      | 5.50    | 5.58            | 6.07       | 4.50             |
| Std. Dev.             | 1.36  | 1.42                 | 1.32              | 0.74 | 1.07                | 1.48                 | 1.54      | 1.00    | 1.24            | 1.27       | 2.12             |



Q39. \*\*How would you assess your participation in APNIC's Policy Development Process for Internet Number Resource policies?



| Relevance to my organisation | Total      | APNIC Account Holder | APNIC Stakeholder | LDEs       | Developed Economies | Developing Economies | East Asia  | Oceania    | South East Asia | South Asia | Non Asia Pacific |
|------------------------------|------------|----------------------|-------------------|------------|---------------------|----------------------|------------|------------|-----------------|------------|------------------|
| Sample Size                  | 48         | 27                   | 21                | 8          | 8                   | 32                   | 16         | 4          | 12              | 14         | 2                |
| Poor                         | 2%         | 4%                   | 0%                | 0%         | 0%                  | 3%                   | 6%         | 0%         | 0%              | 0%         | 0%               |
| 2                            | 0%         | 0%                   | 0%                | 0%         | 0%                  | 0%                   | 0%         | 0%         | 0%              | 0%         | 0%               |
| 3                            | 4%         | 4%                   | 5%                | 0%         | 13%                 | 3%                   | 0%         | 25%        | 8%              | 0%         | 0%               |
| Neutral                      | 17%        | 19%                  | 14%               | 13%        | 13%                 | 19%                  | 13%        | 25%        | 8%              | 29%        | 0%               |
| 5                            | 19%        | 22%                  | 14%               | 25%        | 38%                 | 13%                  | 25%        | 25%        | 17%             | 14%        | 0%               |
| 6                            | 29%        | 33%                  | 24%               | 25%        | 25%                 | 31%                  | 19%        | 25%        | 42%             | 21%        | 100%             |
| Excellent                    | 29%        | 19%                  | 43%               | 38%        | 13%                 | 31%                  | 38%        | 0%         | 25%             | 36%        | 0%               |
| Top 3                        | <b>77%</b> | <b>74%</b>           | <b>81%</b>        | <b>88%</b> | <b>75%</b>          | <b>75%</b>           | <b>81%</b> | <b>50%</b> | <b>83%</b>      | <b>71%</b> | <b>100%</b>      |
| Mean                         | 5.54       | 5.30                 | 5.86              | 5.88       | 5.13                | 5.56                 | 5.56       | 4.50       | 5.67            | 5.64       | 6.00             |
| Std. Dev.                    | 1.37       | 1.41                 | 1.28              | 1.13       | 1.25                | 1.46                 | 1.63       | 1.29       | 1.23            | 1.28       | 0.00             |

Q41. Which of these phrases best describes the way you speak about APNIC to others?



|                                  | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia | Non Asia Pacific |
|----------------------------------|-------|----------------------|-------------------|------|---------------------|----------------------|-----------|---------|-----------------|------------|------------------|
| Sample Size                      | 1168  | 803                  | 365               | 169  | 314                 | 685                  | 265       | 282     | 257             | 318        | 45               |
| Critical without being asked     | 5%    | 4%                   | 7%                | 4%   | 1%                  | 7%                   | 11%       | 1%      | 4%              | 4%         | 0%               |
| Tend to be critical if asked     | 7%    | 6%                   | 8%                | 4%   | 4%                  | 8%                   | 12%       | 3%      | 9%              | 3%         | 11%              |
| I am neutral                     | 47%   | 48%                  | 47%               | 39%  | 52%                 | 47%                  | 49%       | 49%     | 54%             | 39%        | 44%              |
| Tend to speak highly if asked    | 31%   | 33%                  | 27%               | 37%  | 36%                 | 28%                  | 20%       | 38%     | 26%             | 39%        | 40%              |
| Speak highly without being asked | 10%   | 10%                  | 10%               | 17%  | 7%                  | 10%                  | 9%        | 9%      | 6%              | 15%        | 4%               |
| Mean                             | 3.35  | 3.39                 | 3.27              | 3.59 | 3.44                | 3.25                 | 3.04      | 3.50    | 3.20            | 3.59       | 3.38             |
| Std. Dev.                        | 0.92  | 0.88                 | 0.99              | 0.94 | 0.72                | 0.98                 | 1.04      | 0.76    | 0.86            | 0.91       | 0.75             |

Q43. What is your role within the organisation?

|  | Total | APNIC Account Holder | APNIC Stakeholder | LDEs | Developed Economies | Developing Economies | Eastern Asia | Oceania | South Eastern Asia | Southern Asia | Non Asia Pacific |
|--|-------|----------------------|-------------------|------|---------------------|----------------------|--------------|---------|--------------------|---------------|------------------|
| Sample Size  | 1,173 | 804                  | 369               | 170  | 315                 | 688                  | 267          | 281     | 257                | 321           | 46               |
| I.T/ICT Manager or equivalent                                    | 34%   | 37%                  | 26%               | 36%  | 36%                 | 32%                  | 27%          | 36%     | 32%                | 38%           | 41%              |
| Technical operations   | 29%   | 30%                  | 27%               | 25%  | 36%                 | 27%                  | 29%          | 36%     | 32%                | 20%           | 30%              |
| Executive Director/ Managing Director/ CEO/CFO/CTO or equivalent | 19%   | 19%                  | 19%               | 21%  | 18%                 | 19%                  | 13%          | 18%     | 19%                | 26%           | 17%              |
| Administration   | 6%    | 5%                   | 8%                | 6%   | 2%                  | 8%                   | 10%          | 1%      | 6%                 | 7%            | 2%               |
| Other  | 6%    | 4%                   | 9%                | 8%   | 4%                  | 6%                   | 1%           | 6%      | 8%                 | 7%            | 4%               |
| Business development   | 3%    | 2%                   | 5%                | 2%   | 2%                  | 4%                   | 9%           | 1%      | 2%                 | 2%            | 2%               |
| Commercial operations  | 2%    | 1%                   | 2%                | 1%   | 1%                  | 2%                   | 6%           | 1%      | 1%                 | 1%            | 0%               |
| Software development   | 2%    | 1%                   | 3%                | 0%   | 1%                  | 2%                   | 5%           | 1%      | 1%                 | 0%            | 2%               |

APNIC 2016 Survey  
Appendix C

Survey Questionnaire

Welcome to the **2016 APNIC Survey**.

This survey is run every two years to gather feedback from Members and other key stakeholders about APNIC services, the challenges facing the Internet community and where you think APNIC can assist.

The survey helps the APNIC EC and Secretariat to understand the needs and wishes of the community and the results are used to guide decisions on future priorities and service offerings. The APNIC EC places a high degree of importance on the results from this survey.

The APNIC EC has commissioned Survey Matters to conduct this survey so you can be sure that your answers will remain confidential. Individual responses will not be identified and we encourage you to provide honest and objective feedback. Please note, however, that any free text comments you write will be provided to APNIC unedited (so if you identify yourself by name or otherwise in the free text comments these will not remain anonymous). You can view Survey Matters [terms of use](#) at the bottom of each page of the survey.

To access the survey please click on **“next”** below. You can check your progress from the "% Completed" listed at the top of each page. Depending on your responses, the survey should take around 15 minutes to complete for Members and Account Holders, and much less for other stakeholders in the APNIC community.

Completed responses will be eligible to enter a draw for a chance to win prizes including **a Microsoft Surface Pro 4 or an Apple Watch Sport**.

If you have any questions in relation to this survey, please contact Survey Matters at [support@survey matters.com.au](mailto:support@survey matters.com.au) or on +61 3 9452 0101.

Thank you for your participation. Your views are important and we welcome your feedback.

# APNIC Account Holder and Member Questionnaire

## About you

### 1. \*Where do you live?

<Economy list selection – all countries>

### 2. \*What type of organization do you work for?

|  |  |
|--|--|
|  | Academic/Educational/Research          |
|  | Banking/Financial                      |
|  | Domain name registry/Registrar         |
|  | Enterprise/Manufacturing/Retail        |
|  | Government/Regulator/Municipality      |
|  | Hardware vendor                        |
|  | Hosting/Data centre                    |
|  | Industrial (construction, mining, oil) |
|  | Infrastructure (transport/hospital)    |
|  | Internet exchange point (IXP)          |
|  | Internet service provider (ISP)        |
|  | Media/Entertainment                    |
|  | NREN/Research network                  |
|  | Non-profit/NGO/Internet community      |
|  | Software vendor                        |
|  | Telecommunications/Mobile operator     |
|  | Other (please specify)                 |

### 3. \*What is your organisation's relationship with APNIC?

|  |  |
|--|--|
|  | My organisation is an APNIC Member or Account Holder [Go to Member Survey]           |
|  | My organisation is a member of an NIR in the APNIC region [Go to Stakeholder Survey] |
|  | Other stakeholder (please specify) [Go to Stakeholder Survey]                        |

### 4. \*How many times have you used an APNIC service, contacted or interacted with APNIC in the past two (2) years?

|  |                           |
|--|---------------------------|
|  | None [Go to Q11]          |
|  | 1-5 times                 |
|  | More than 5 times         |
|  | Don't know/can't remember |

## Participation

### 5. Over the past two (2) years, have you:

(Not presented to participants who selected "None" at Q4) (Select all that apply) (Randomise)

|  |  |
|--|--|
|  | Attended an APNIC training course or online training                                     |
|  | Attended the APNIC Conference, APRICOT or another APNIC event                            |
|  | Read the APNIC blog  |
|  | Applied for IP addresses and/or AS number resources                                      |
|  | Received IP addresses and/or AS number resources   |
|  | Visited the APNIC website  |
|  | Contacted the APNIC helpdesk for support   |
|  | Used the Whois database service  |
|  | Used MyAPNIC   |
|  | Transferred IPv4 addresses   |
|  | Used reverse DNS services  |
|  | Used resource certification (RPKI) services  |
|  | Participated in Special Interest Groups (SIGs), face-to-face meetings or mailing list    |
|  | Participated in APNIC's Policy Development Process for Internet Number Resource policies |
|  | Personally met with an APNIC representative  |
|  | Attended a public presentation by an APNIC representative                                |
|  | Used the APNIC technical assistance team   |
|  | Other (please specify)   |
|  | None of these (exclusive) (Go to Q8)   |

### 6. Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?

(Only the specific services selected above will be presented for each respondent)

|  | 1 = Poor |   | 4 = Neutral |   |   | 7 = Excellent |   |
|--|----------|---|-------------|---|---|---------------|---|
|  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC training courses and/or online training                      | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC Conference, APRICOT or other APNIC events                    | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC blog   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| IP address and AS number resource applications                     | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| IP address and AS number resource allocations                      | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC website  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC helpdesk   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| The Whois database service   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| MyAPNIC  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| IPv4 address transfers   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Reverse DNS services   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Resource certification (RPKI) services                             | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Special Interest Group (SIG), face-to-face meeting or mailing list | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| The APNIC Policy Development Process                               | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Meeting with an APNIC representative                               | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC public presentation  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC technical assistance team                                    | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| The other interactions (presented if selected "Other" above)       | 1        | 2 | 3           | 4 | 5 | 6             | 7 |

**7. Please tell us why some of your experiences were not as good as you expected?**

*(Only asked if selected 1, 2 or 3 in Q6)*

**8. \*Thinking about APNIC overall, how would you rate the following:**

*(Not asked if selected None at Q 4)*

|                                 | 1 = Poor |   | 4 = Neutral |   |   | 7 =Excellent |   |
|---------------------------------|----------|---|-------------|---|---|--------------|---|
|                                 | 1        | 2 | 3           | 4 | 5 | 6            | 7 |
| The quality of service delivery | 1        | 2 | 3           | 4 | 5 | 6            | 7 |
| The value of the services       | 1        | 2 | 3           | 4 | 5 | 6            | 7 |
| The value of membership         | 1        | 2 | 3           | 4 | 5 | 6            | 7 |

**9. \*Over the last two (2) years, would you say that APNIC’s service delivery to your organisation has:**

*(Not asked if selected None at Q 4) (Slider)*

|                        |                   |                 |                   |                        |
|------------------------|-------------------|-----------------|-------------------|------------------------|
| Declined significantly | Declined slightly | Stayed the same | Improved slightly | Improved significantly |
|------------------------|-------------------|-----------------|-------------------|------------------------|

**10. Why do you say this?**



## IPv6 Readiness

### 11. Has your organisation already deployed or are you ready for deployment of IPv6?

|  |  |
|--|--|
|  | Yes, IPv6 is fully deployed in our networks and customer services (Go to Q15)                |
|  | Yes, IPv6 is deployed in our core network(s) but not in access or other networks (Go to Q13) |
|  | We have an IPv6 deployment plan (Go to Q12)  |
|  | No (Go to Q13)   |

### 12. When do you expect the deployment to be completed?

*(Asked if selected "We have a deployment plan" at Q11)*

|  |                     |
|--|---------------------|
|  | This year           |
|  | In 2017             |
|  | In 2018             |
|  | In 2019             |
|  | In 2020             |
|  | Sometime after 2020 |
|  | Don't know          |

### 13. What are the MAIN challenges that are affecting your organisation's deployment of IPv6?

*(Asked if selected No; We have a deployment plan; or Deployed in the core network at Q11) (Randomise) (Select up to three (3) responses only) (Randomise)*

|  |   |
|--|---|
|  | Lack of skills and expertise within our organisation                      |
|  | Lack of available training  |
|  | Our customers are not ready for IPv6                                      |
|  | Lack of applications that can run on IPv6                                 |
|  | There is no demand for IPv6 from customers                                |
|  | My organisation's legacy systems  |
|  | The cost of deploying IPv6 is too high                                    |
|  | It is too expensive to run both IPv4 and IPv6                             |
|  | Our upstream providers do not support IPv6                                |
|  | There are no clear business/technical advantages or reasons to adopt IPv6 |
|  | The perceived risks of deploying IPv6 are high                            |
|  | The risks of remaining with IPv4 are lower than deployment of IPv6        |
|  | Other (please specify)  |

**14. What do you think are the MOST EFFECTIVE ways that APNIC could assist your organisation to transition to or deploy IPv6?**

*(Asked if selected No; We have a deployment plan; or Deployed in the core network at Q11) (Select up to two (2) responses only)*

|  |  |
|--|--|
|  | Promote the benefits of IPv6 to management and/or decision makers                        |
|  | Promote the benefits of IPv6 to customers/consumers                                      |
|  | Promote the advantages of IPv6 to government and related organisations                   |
|  | Promote the advantages of IPv6 to hardware, software and/or content providers            |
|  | Provide case studies and best current practices about IPv6                               |
|  | Provide more advanced training in IPv6   |
|  | Facilitate knowledge sharing between member organisations on IPv6 deployment experiences |
|  | APNIC should take no action to promote or assist with the deployment of IPv6 (Exclusive) |

**15. Do you have any comments or suggestions about APNIC's role in the promotion or deployment of IPv6?**

## Industry Challenges

In this section of the survey we are interested in understanding the most important issues or challenges facing your organisation in relation to APNIC's role and responsibilities.

**16. Thinking about your Internet-related services, products or activities (in particular those related to APNIC's role and responsibilities) what are the MAIN challenges facing your organisation?**

Please rank these in order of their importance, where 1 is the MOST important challenge.

*(Please rank at least three (3) challenges in order of their priority to your organisation) (Randomise)*

|  |   |
|--|---|
|  | Getting more IPv4 addresses                     |
|  | Brokers selling/leasing IPv4 addresses          |
|  | Deploying NAT                                   |
|  | Lack of IPv6 applications                       |
|  | Cost of deploying IPv6                          |
|  | Risks of deploying IPv6                         |
|  | Deploying IPv6 in customer networks             |
|  | Customer unwillingness to use IPv6              |
|  | Lack of awareness of IPv6 in my organization    |
|  | DDoS attacks                                    |
|  | Routing security                                |
|  | Network security – intrusion and other breaches |
|  | Phishing, Spam, Malware, Ransomware             |
|  | Hiring and/or keeping skilled employees         |
|  | Management of bandwidth and network capacity    |
|  | Other (please specify)                          |

**17. Do you believe APNIC has a role to play in helping you address these challenges?**

|   | Yes | No |
|---|-----|----|
| Getting more IPv4 addresses                     |     |    |
| Brokers selling/leasing IPv4 addresses          |     |    |
| Deploying NAT                                   |     |    |
| Lack of IPv6 applications                       |     |    |
| Cost of deploying IPv6                          |     |    |
| Risks of deploying IPv6                         |     |    |
| Deploying IPv6 in customer networks             |     |    |
| Customer unwillingness to use IPv6              |     |    |
| Lack of awareness of IPv6 in my organization    |     |    |
| DDoS attacks                                    |     |    |
| Routing security                                |     |    |
| Network security – intrusion and other breaches |     |    |
| Phishing, Spam, Malware, Ransomware             |     |    |
| Hiring and/or keeping skilled employees         |     |    |
| Management of bandwidth and network capacity    |     |    |

18. Please tell us how you think APNIC can assist you with your challenges?

|  |
|--|
|  |
|--|

19. Do you think that the APNIC Executive Council and Secretariat understand the challenges faced in providing your Internet-related services, products or activities?

|  |                 |
|--|-----------------|
|  | Yes (Go to Q21) |
|  | No              |
|  | Unsure          |

20. Can you tell us why you think that APNIC does not understand your challenges?

*(Presented if selected No or Unsure at Q19)*

|  |
|--|
|  |
|--|

The majority of APNIC’s resources and expenditure in the 2016 activity plan are allocated to serving Members. The APNIC EC allocates the annual budget across four (4) categories:

1. **Serving Members** – technical infrastructure, customer service, registration services and Member training
2. **Regional Development & Outreach** – APNIC conferences, community engagement, regional technical development, APNIC foundation
3. **Global Cooperation** – global technical community collaboration, global outreach and information sharing, inter-Governmental outreach and coordination
4. **Corporate** – finance & administration, human resource management, legal and governance, facilities (which equate to 20% of the total budget)

**21. Apart from Corporate operations, please indicate what percentage of the total budget you think should be allocated to these other APNIC services and activities?**

*(Total must = 100%)*

|                                 |             |
|---------------------------------|-------------|
| Serving Members                 |             |
| Regional Development & Outreach |             |
| Global Cooperation              |             |
| Corporate                       | 20%         |
| <b>Total</b>                    | <b>100%</b> |

**22. Thinking about your membership of APNIC, please indicate how much you AGREE with the following statements:**

1 = Strongly disagree    4 = Neutral    7 = Strongly agree

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| APNIC provides essential Internet resource services that cannot be accessed elsewhere                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| APNIC provides other services of value to my organisation which cannot be found elsewhere in my country or economy | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I choose to use APNIC services because they are of higher quality than other services available                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am treated as a valued member of APNIC   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| APNIC seeks my opinions on issues relevant to APNIC services and the challenges of the Internet community          | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| APNIC Membership enhances my organisation’s reputation/credibility   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| APNIC is open and transparent in all of its activities   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| APNIC is respected in the Internet community   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

The APNIC EC and Secretariat gather feedback from the community in a number of ways: at APNIC conferences and member meetings, via mailing lists and the biennial APNIC survey.

**23. Do you believe APNIC members have enough opportunity to provide feedback and input into APNIC activities?**

|  |            |
|--|------------|
|  | Yes        |
|  | No         |
|  | Don’t know |

24. APNIC has received suggestions to provide information on trends and benchmarks for regional Internet infrastructure and related technical and business activities. Such activity will require further member consultation and data collection from APNIC Members who choose to participate. Would you (or your organisation) be interested in being part of such activity?

|  |   |
|--|---|
|  | Yes                                       |
|  | I'd like more information before deciding |
|  | No  |
|  | Don't know/I wouldn't make the decision   |

25. Do you have any comments or suggestions about providing feedback and input into APNIC activities, and contributing to information gathering that would assist the Internet community?

26. Thinking about service delivery from APNIC, how IMPORTANT do you think it is that APNIC establish an office or agency that could deliver some services locally in your economy/country?

*(Only presented to economies without an NIR presence)*

1 = Not important at all

4 = Neutral

7 = Extremely important

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|

27. Please tell us the services that you think APNIC could deliver locally?

*(Only asked if selected 5, 6 or 7 at Q26)*

28. Do you have any comments or suggestions about local service delivery in your economy/country from APNIC?

29. \*APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?

(Randomise)

1 = Least focus

7 = Most focus

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| Network Operator Groups (NOGs)  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Governments   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| International government-led organizations (ITU, ASEAN, UN, OECD, APECTEL, APT)   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Asia-Pacific Internet technical organizations (APIX, APIA, APTLD, APCERT, APAN)   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Global Internet technical organizations (IETF, IAB, Internet Society, ICANN, W3C) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Internet business community (external to APNIC membership)                        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Universities and academia   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Civil society, non-profit and other community groups                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Other Regional Internet Registries (AFRINIC, ARIN, LACNIC, RIPE NCC)              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Law enforcement and other public safety agencies                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Industry associations   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

30. Do you have any comments or suggestions about the relationships APNIC has with these or other organisations/groups/communities?

## Training and Technical Assistance

31. Under its Bylaws, one of the objectives of APNIC is to provide training and educational opportunities that further Members' technical knowledge, skills and policy understanding of the industry.

Thinking about the provision of training services by APNIC, how much do you AGREE that:

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| The provision of training is an important APNIC function                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Training offered by APNIC should be responsive to Member requests and needs | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| APNIC should subsidise training to increase affordability where necessary   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

32. To reduce reliance on Member funds, do you believe APNIC should seek additional external resources to help build its training and technical assistance services?

|   |
|---|
| Yes                                     |
| No                                      |
| Don't know/I wouldn't make the decision |

33. Have you undertaken APNIC training in the last twelve (12) months?

|                |
|----------------|
| Yes            |
| No (Go to Q33) |

34. Thinking about the training you have undertaken, please indicate how much you AGREE that APNIC provides:

(Presented to those who select Yes above)

1 = Strongly disagree

4 = Neutral

7 = Strongly agree

|  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| Relevant and useful training programs            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Training programs in a suitable format           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Training programs that represent value for money | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| A sufficient number of training programs         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |



**35. If APNIC could support your organisation with your technical challenges through training, extended technical workshops and/or direct technical assistance, which of the following topics would assist your organisation?**

*(Select all that apply)*

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | Network security  |
| <input type="checkbox"/> | Incident handling and response  |
| <input type="checkbox"/> | IPv6 deployment planning  |
| <input type="checkbox"/> | DNS and DNSSEC  |
| <input type="checkbox"/> | MPLS  |
| <input type="checkbox"/> | Routing protocols (BGP, OSPF/IS-IS etc.)  |
| <input type="checkbox"/> | RPSL and Routing Registry   |
| <input type="checkbox"/> | Best practices for inter-domain routing   |
| <input type="checkbox"/> | RPKI  |
| <input type="checkbox"/> | CERT/CSIRT operation and management   |
| <input type="checkbox"/> | IXP design, operation and management  |
| <input type="checkbox"/> | QoS   |
| <input type="checkbox"/> | Software Defined Networking (SDN)   |
| <input type="checkbox"/> | Virtualisation of network functions and/or services   |
| <input type="checkbox"/> | Training of trainers in any of the topics listed here   |
| <input type="checkbox"/> | Optimising network architecture   |
| <input type="checkbox"/> | Other (please specify)  |
| <input type="checkbox"/> | None of these – my organisation does not require training or technical support from APNIC (Exclusive) |

**36. Are there any additional training topics you would like APNIC to make available?**

## Policy Development

**37. Can you tell us the MAIN reasons why you have not participated in APNIC's Policy Development Process for Internet Number Resource policies?**

*(Asked of those who **did not** select this in Q6) (Select up to two (2) reasons)*

|  |   |
|--|---|
|  | I trust the community to develop the right policies         |
|  | I wasn't aware I could participate                          |
|  | I don't know enough about the process                       |
|  | It's too difficult to participate in the process            |
|  | No-one has asked me to participate                          |
|  | I don't have time to participate                            |
|  | Other (please specify)                                      |
|  | I'm not interested in participating (Exclusive) (Go to Q37) |

**38. What could APNIC do to encourage you to participate in the Policy Development Process for Internet Number Resource policies?**

*(Asked of those who **did not** select this in Q6)*

**39. \* How would you assess your participation in APNIC's Policy Development Process for Internet Number Resource policies?**

*(Only presented to those who indicated that they **had participated** in the process in Q6)*

|   | 1 = Poor |   | 4 = Neutral |   |   | 7 = Excellent |   |
|---|----------|---|-------------|---|---|---------------|---|
|   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Ease of understanding                         | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Ease of participation                         | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Ease of following the progress of discussions | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Overall effectiveness                         | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Relevance to my organisation                  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |

**40. Please tell us why some of these experiences were not as good as you expected?**

*(Asked if selected 1, 2 or 3 at Q37)*

## Endorsement

41. #Which of these phrases best describes the way you speak about APNIC to others?

|  |  |
|--|--|
|  | I am critical of APNIC without being asked   |
|  | I tend to be critical of APNIC if I am asked |
|  | I am neutral                                 |
|  | I speak well about APNIC if I am asked       |
|  | I speak highly of APNIC without being asked  |

## Other comments

42. Are there any other topics or areas of APNIC's services and activities that you would like to provide feedback on and/or do you have any additional suggestions or ideas for APNIC to consider?

|  |
|--|
|  |
|--|

## About Your Organisation

43. What is your role within the organisation?

|  |  |
|--|--|
|  | Executive Director/ Managing Director/ CEO/CFO/CTO or equivalent |
|  | I.T/ICT Manager or equivalent                                    |
|  | Software development   |
|  | Technical operations   |
|  | Administration   |
|  | Commercial operations  |
|  | Business development   |
|  | Other (please specify)   |

44. How did you hear about the APNIC Survey?

|  |                      |
|--|----------------------|
|  | APNIC email          |
|  | APNIC website / blog |
|  | Facebook             |
|  | Twitter              |
|  | Mailing list         |
|  | At an event          |
|  | From a colleague     |
|  | Other social media   |

## Prize Draw

Thank you for providing your feedback and participating in the **APNIC 2016 Survey**. There will be three prize draws for the survey and prizes include Microsoft Surface Pro 4 tablets (128GB / Intel Core m3 / 4GB RAM) and an Apple Watch Sport (42mm).

The winners will be drawn at random by Survey Matters, and your responses to all of the other questions in the survey will remain anonymous.

### 45. Would you like to go into the prize draw?

|  |                          |
|--|--------------------------|
|  | Yes                      |
|  | No (Go to end of survey) |

### 46. Please enter your details below so we can contact you should you win (Note: your survey responses will remain anonymous and will not be linked to the prize draw):

*(Presented if Yes selected at Q43)*

|                  |  |
|------------------|--|
| Name             |  |
| Email Address    |  |
| Telephone Number |  |

### Second chance to win!

Encourage others to take the APNIC Survey using Twitter or Facebook. Simply tweet or post the message below to your followers and you will automatically be entered in a social media competition to win an Apple Watch Sport (42mm).

Twitter or Facebook message: I've just completed the 2016 #apnicsurvey – visit [survey.apnic.net](http://survey.apnic.net) to provide your thoughts. You could win a prize!

Thank you for taking part. We appreciate your participation and value your feedback.

## NIR Member or Stakeholder Questionnaire

1. \*How many times have you contacted or interacted with APNIC in the past two (2) years?

|  |                           |
|--|---------------------------|
|  | None (Go to Q6)           |
|  | 1-5 times                 |
|  | More than 5 times         |
|  | Don't know/can't remember |

## Participation

2. Over the last 2 years, have you:

(Not presented to participants who selected "None" at Q1) (Select all that apply) (Randomise)

|  |  |
|--|--|
|  | Attended an APNIC training course or online training                                     |
|  | Attended the APNIC Conference, APRICOT or another APNIC event                            |
|  | Read the APNIC blog  |
|  | Visited the APNIC website  |
|  | Used the Whois database service  |
|  | Participated in Special Interest Groups (SIGs), face-to-face meetings or mailing list    |
|  | Participated in APNIC's Policy Development Process for Internet Number Resource policies |
|  | Contacted APNIC with a query   |
|  | Personally met with an APNIC representative  |
|  | Attended a public presentation by an APNIC representative                                |
|  | Other (please specify)   |
|  | None of these (exclusive) (Go to Q5)   |

3. Thinking about these services and activities, how would you rate your experience?

(Only the specific services selected above will be presented for each respondent)

|   | 1 = Poor |   | 4 = Neutral |   |   | 7 = Excellent |   |
|---|----------|---|-------------|---|---|---------------|---|
| APNIC training courses and/or online training                         | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC Conference, APRICOT or other APNIC events                       | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC blog  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC website   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| The Whois database service  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Special Interest Groups (SIGs), face-to-face meetings or mailing list | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| The APNIC Policy Development Process                                  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC's handling of your query  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| Meeting with an APNIC representative                                  | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| APNIC public presentation   | 1        | 2 | 3           | 4 | 5 | 6             | 7 |
| The other interactions (presented if selected "Other" above)          | 1        | 2 | 3           | 4 | 5 | 6             | 7 |

**4. Please tell us why some experiences were not as good as you expected?**

*(Only asked if selected 1, 2 or 3 in Q3)*

|  |
|--|
|  |
|--|

**5. Overall, how would you rate your experience dealing with APNIC?**

*(Not asked if selected None at Q1)*

1=Poor

4=Neutral

7=Excellent

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|

**6. \*APNIC aims to strengthen relationships with other organisations which can help APNIC carry out its vision and mission. On which organisations/groups do you believe APNIC should focus its efforts?**

*(Randomise)*

1 = Least focus

7 = Most focus

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Network Operator Groups (NOGs)  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Governments   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| International government-led organizations (ITU, ASEAN, UN, OECD, APECTEL, APT)   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Asia-Pacific Internet technical organizations (APIX, APIA, APTLD, APCERT, APAN)   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Global Internet technical organizations (IETF, IAB, Internet Society, ICANN, W3C) | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Internet business community (external to APNIC membership)                        | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Universities and academia   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Civil society, non-profit and other community groups                              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Other Regional Internet Registries (AFRINIC, ARIN, LACNIC, RIPE NCC)              | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Law enforcement and other public safety agencies                                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Industry associations   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**7. Do you have any comments or suggestions about the relationships APNIC has with these or other organisations/groups/communities?**

|  |
|--|
|  |
|--|

**8. Can you tell us the MAIN reasons why you have not participated in APNIC's Policy Development Process for Internet Number Resource policies?**

*(Asked of those who **did not** select this in Q2) (Select up to two (2) reasons)*

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | I trust the community to develop the right policies         |
| <input type="checkbox"/> | I wasn't aware I could participate                          |
| <input type="checkbox"/> | I don't know enough about the process                       |
| <input type="checkbox"/> | It's too difficult to participate in the process            |
| <input type="checkbox"/> | No-one has asked me to participate                          |
| <input type="checkbox"/> | I don't have time to participate                            |
| <input type="checkbox"/> | Other (please specify)                                      |
| <input type="checkbox"/> | I'm not interested in participating (Exclusive) (Go to Q12) |

**9. What could APNIC do to encourage you to participate in the Policy Development Process for Internet Number resource policies?**

*(Asked of those who **did not** select this in Q2)*

**10. \*How would you assess your participation in APNIC's Policy Development Process for Internet Number Resource policies?**

*(Only presented to those who indicated in Q2 that they **had participated** in the process)*

1 = Poor                      4 = Neutral                      7 = Excellent

|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Ease of understanding                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Ease of participation                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Ease of following the progress of discussions | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Overall effectiveness                         | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Relevance to my organisation                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

**11. Please tell us why some of these experiences were not as good as you expected?**

*(Asked if selected 1, 2 or 3 at Q 10)*

## Endorsement

12. Which of these phrases best describe the way you speak about APNIC to others?

|  |  |
|--|--|
|  | I am critical of APNIC without being asked   |
|  | I tend to be critical of APNIC if I am asked |
|  | I am neutral                                 |
|  | I speak well about APNIC if I am asked       |
|  | I speak highly of APNIC without being asked  |

## Other comments

13. Are there any other topics or areas of APNIC's services and activities that you would like to provide feedback on and/or do you have any additional suggestions or ideas for APNIC to consider?

|  |
|--|
|  |
|--|

## About Your Organisation

14. What is your role within the organisation?

|  |  |
|--|--|
|  | Executive Director/ Managing Director/ CEO/CFO/CTO or equivalent |
|  | I.T/ICT Manager or equivalent                                    |
|  | Software development   |
|  | Technical operations   |
|  | Administration   |
|  | Commercial operations  |
|  | Business development   |
|  | Other (please specify)   |

15. How did you hear about the APNIC Survey?

|  |                      |
|--|----------------------|
|  | APNIC email          |
|  | APNIC website / blog |
|  | Facebook             |
|  | Twitter              |
|  | Mailing list         |
|  | At an event          |
|  | From a colleague     |
|  | Other social media   |



## Prize Draw

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The winners will be drawn at random by Survey Matters, and your responses to all of the other questions in the survey will remain anonymous.

### 16. Would you like to go into the prize draw?

|  |                          |
|--|--------------------------|
|  | Yes                      |
|  | No (Go to end of survey) |

### 17. Please enter your details below so we can contact you should you win (Note: your survey responses will remain anonymous and will not be linked to the prize draw):

*(Presented if Yes selected at Q41)*

|                  |  |
|------------------|--|
| Name             |  |
| Email Address    |  |
| Telephone Number |  |

### Second chance to win!

Encourage others to take the APNIC Survey using Twitter or Facebook. Simply tweet or post the message below to your followers and you will automatically be entered in a social media competition to win an Apple Watch Sport (42mm).

Twitter or Facebook message: I've just completed the 2016 #apnicsurvey – visit [survey.apnic.net](http://survey.apnic.net) to provide your thoughts. You could win a prize!

Thank you for taking part. We appreciate your participation and value your feedback.



# 2016 APNIC Survey Results

## Asia Pacific Network Information Centre

Conducted and prepared by Survey Matters.



# Agenda

|   | Slide |
|---|-------|
| Survey Process and Methodology                                  | 3     |
| Participation and Service Satisfaction                          | 6     |
| Respondents' Challenges   | 11    |
| IPv6 readiness  | 14    |
| Training  | 18    |
| Policy Development Process, External Relations and New Services | 23    |
| Member Engagement   | 28    |
| Questions   | 32    |





# Survey Process and Methodology

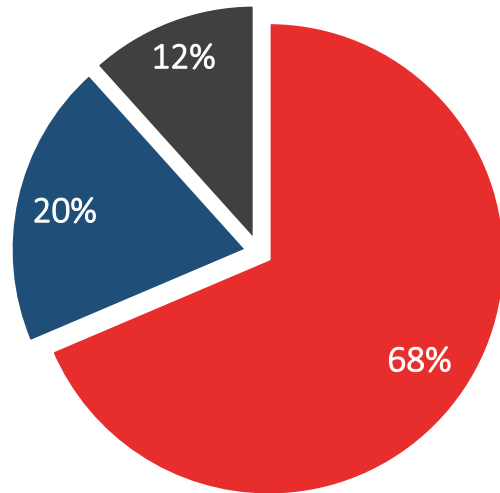
# Methodology

- Focus groups conducted in twelve economies, with fifteen sessions conducted by an independent facilitator, and one online focus group was trialled in New Zealand
- Online survey questionnaire developed by Survey Matters and based on results from the focus groups
- Online survey comprised:
  - Participation and Service Satisfaction
  - Industry Challenges
  - IPv6 Readiness
  - Training and Technical Assistance
  - Policy Development
  - Resource Allocation, External Relations & New Services
  - Member Engagement
- Survey designed as an anonymous link, distribution and promotion was done by the APNIC Secretariat

# Survey Sample

- 1,365 completed responses received
- 1,175 responses analysed after data cleansing
- Analysis looked at results by economy type (Least Developed, Developing and Developed) and Sub-region (East Asia, Oceania, South East Asia and South Asia)

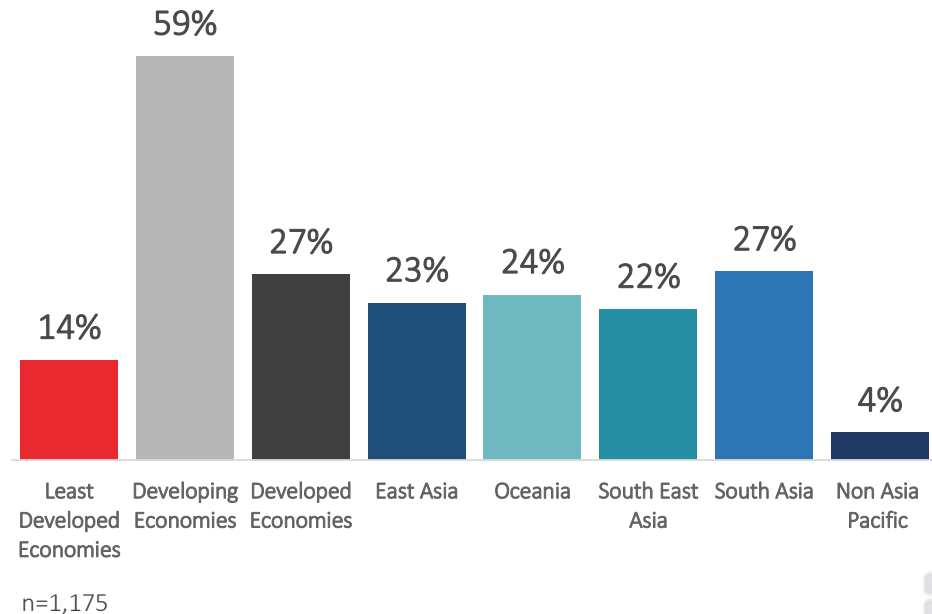
Responses by stakeholder type



Q4; n=1,175

- APNIC Member or Account Holder
- Member of a NIR in the APNIC region
- Other stakeholder

Responses by Economy type and Sub-region



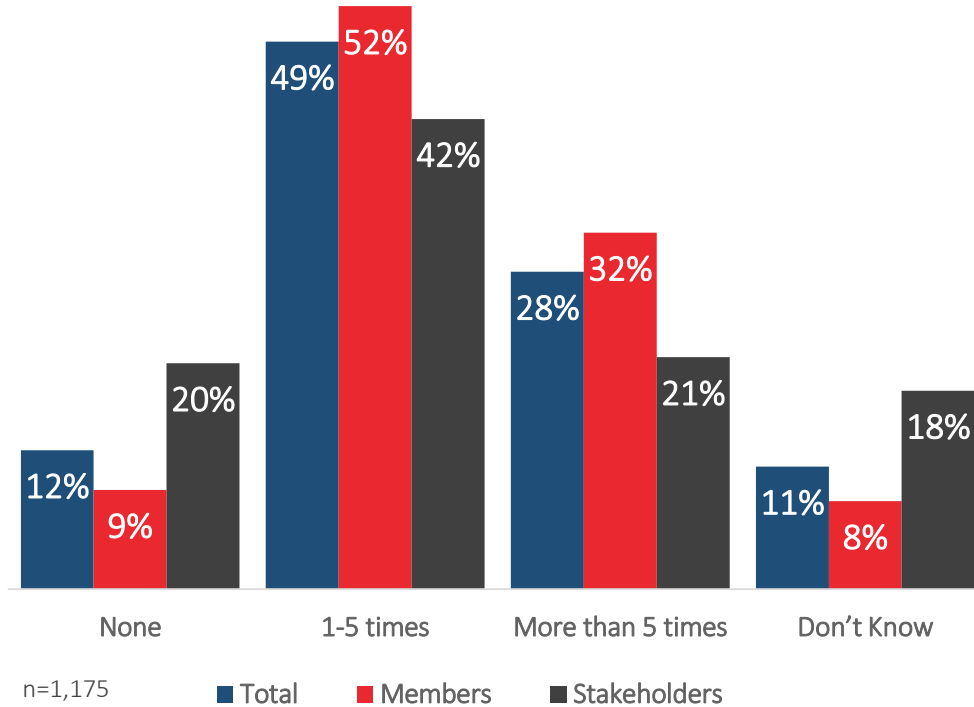


A nighttime photograph of a city skyline featuring several illuminated skyscrapers. The sky is dark with several bright light trails forming a starburst pattern at the top. A red semi-transparent banner is overlaid at the bottom of the image.

# Participation & Service Satisfaction

# Participation

Q 4 - How many times have you used an APNIC service or interacted with APNIC in the past two years?



84% of Members have used APNIC services or participated in APNIC activities over the past two years

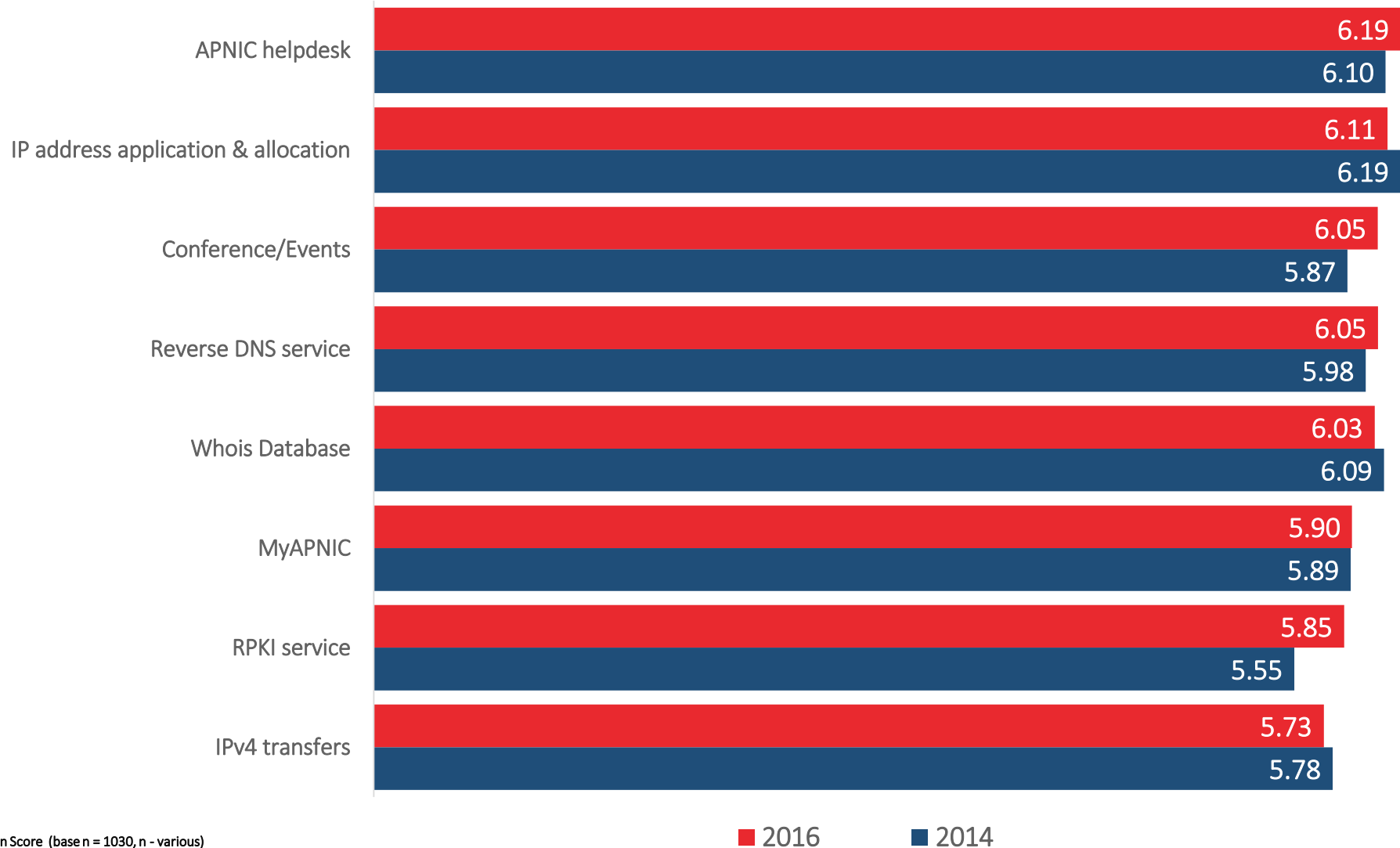
Over the past two years, have you:

| Q 5 - Participation        | Total | Member | Stakeholder |
|----------------------------|-------|--------|-------------|
| Sample Size                | 1,030 | 735    | 295         |
| Visited the website        | 75%   | 77%    | 71%         |
| Used MyAPNIC               | 59%   | 59%    | 0%          |
| Applied for IP addresses   | 53%   | 53%    | 0%          |
| Used the Whois Database    | 49%   | 53%    | 39%         |
| Received IP addresses      | 45%   | 45%    | 0%          |
| Read the blog              | 43%   | 41%    | 46%         |
| Contacted the helpdesk     | 33%   | 33%    | 0%          |
| Used reverse DNS           | 27%   | 27%    | 0%          |
| Contacted APNIC            | 22%   | 0%     | 22%         |
| Attend conference/event    | 22%   | 21%    | 24%         |
| Attended training          | 22%   | 22%    | 20%         |
| Personally met with APNIC  | 17%   | 16%    | 22%         |
| Attended presentation      | 15%   | 13%    | 22%         |
| Technical assistance       | 13%   | 13%    | 0%          |
| Transferred IPv4 addresses | 12%   | 12%    | 0%          |
| Participate SIGs/Meetings  | 7%    | 5%     | 11%         |
| Used RPKI services         | 5%    | 5%     | 0%          |
| Policy Development         | 5%    | 4%     | 7%          |
| None of these              | 2%    | 1%     | 5%          |
| Other                      | 2%    | 1%     | 4%          |



# Satisfaction with APNIC services

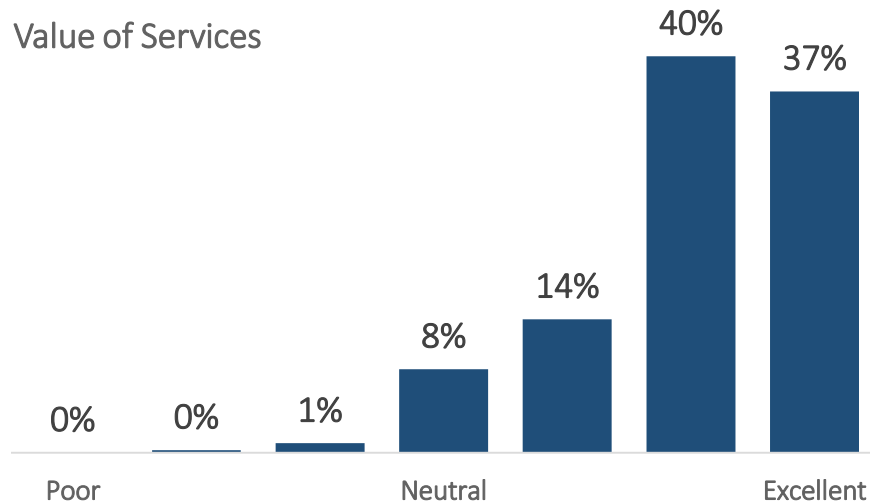
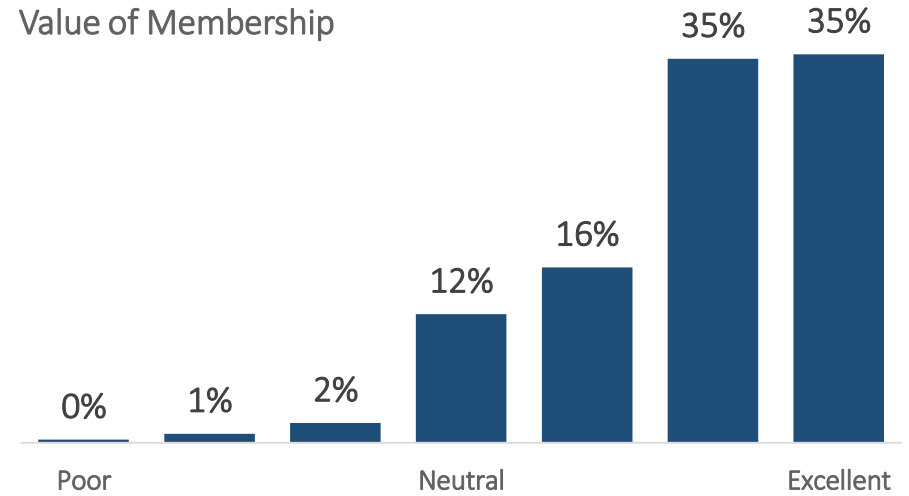
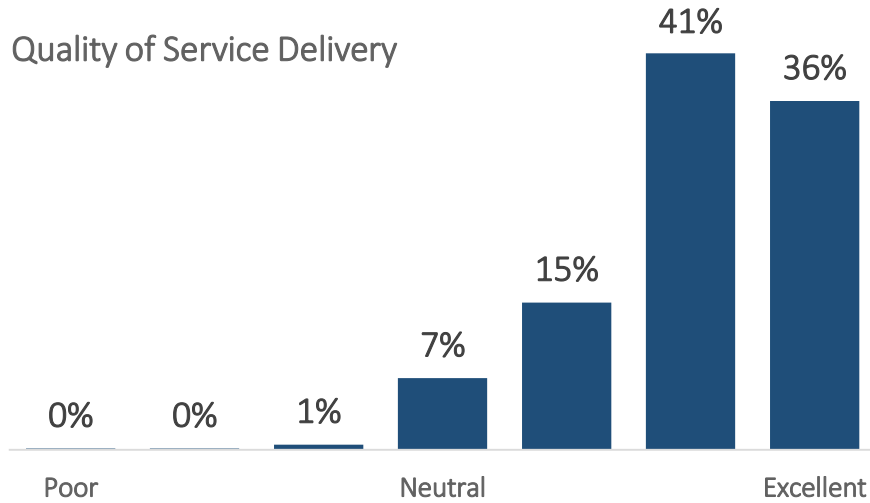
Q 6 - Respondents ratings of their experience using APNIC services and activities compared with 2014 Survey results.



# Overall Member Satisfaction

Q 8 - Respondents ratings of the quality and value of APNIC services and Membership

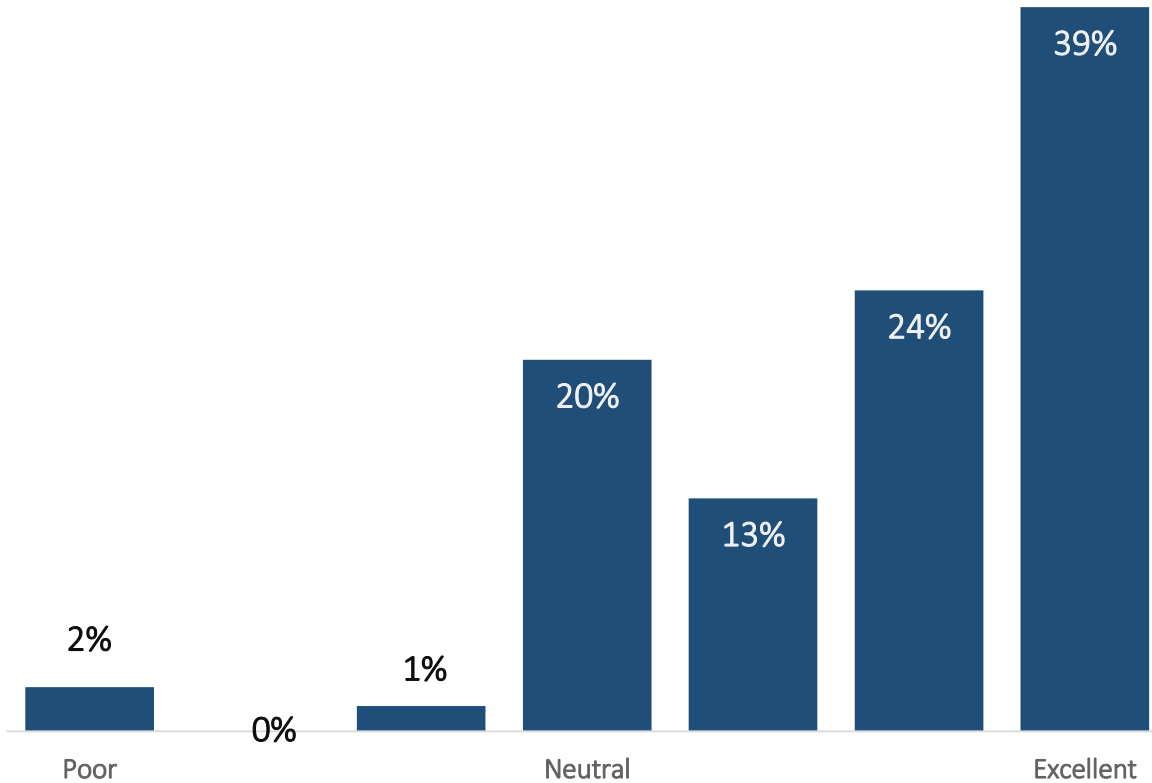
(n = 733)



APNIC Members rate the service quality and value highly, with over 90% of respondents rating these positively

# Stakeholder Satisfaction

Q 9 - Respondents rating of APNIC Service delivery over the last two years.  
(N= 292)



*“APNIC is a very professional organization. I have interacted with APNIC and its representatives in the past in various roles in my career. APNIC is dedicated to the improvement of the internet community in APAC. People in APNIC are knowledgeable and very helpful.”*

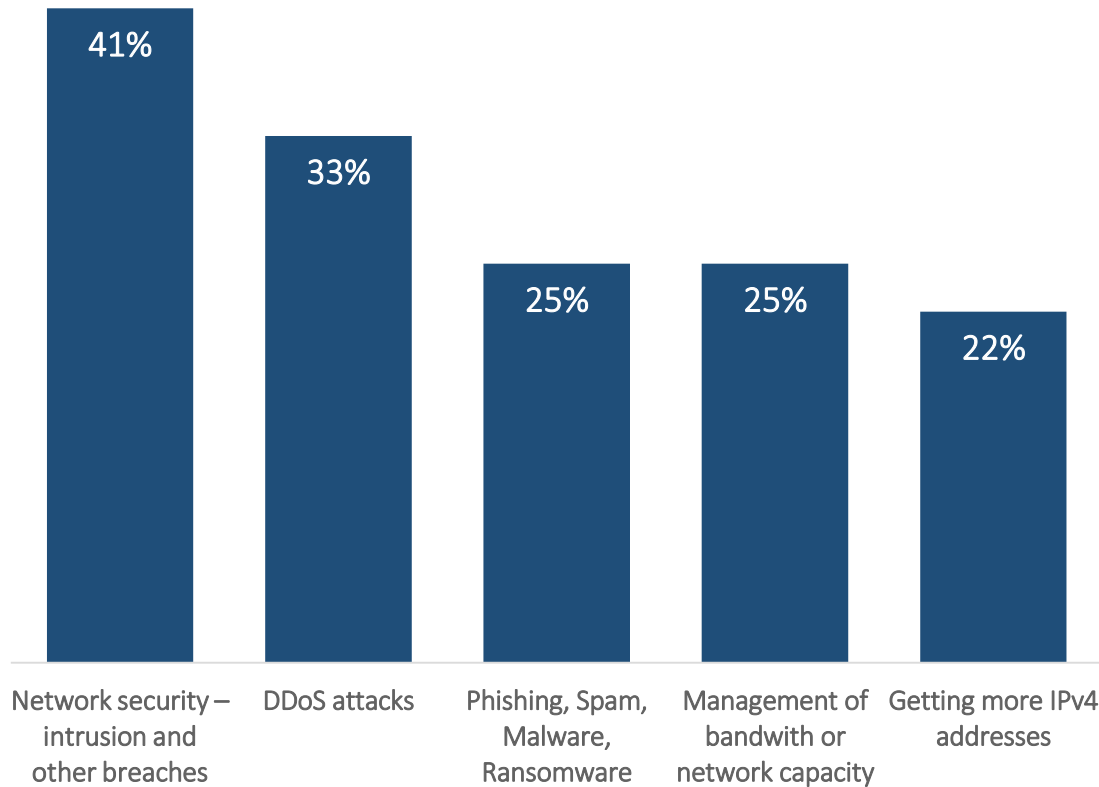
South Asia



# Respondents' Challenges

# Challenges Faced by Respondents

% of respondents who ranked the statement within the top three challenges



Security is the biggest challenge facing respondents

| Aggregated % by Issue | Rank1      | Rank2       | Rank3      |
|-----------------------|------------|-------------|------------|
| Security Issues       | 41%        | 41%         | 36%        |
| IPv6 Related Issues   | 30%        | 34%         | 33%        |
| IPv4 Related Issues   | 13%        | 12%         | 10%        |
| Other Issues          | 15%        | 13%         | 19%        |
| <b>Total</b>          | <b>99%</b> | <b>100%</b> | <b>98%</b> |





# Does APNIC have a role to play?

Q 17 - Do you believe APNIC has a role to play in helping address these challenges?

n = 851

|   | % Agree APNIC can assist |
|---|--------------------------|
| Getting more IPv4 addresses                     | 80%                      |
| Routing security                                | 67%                      |
| Brokers selling/leasing IPv4 addresses          | 65%                      |
| Risks of deploying IPv6                         | 65%                      |
| Lack of awareness of IPv6 in my organization    | 63%                      |
| Customer unwillingness to use IPv6              | 61%                      |
| Network security – intrusion and other breaches | 54%                      |
| Deploying IPv6 in customer networks             | 54%                      |
| DDoS attacks                                    | 53%                      |
| Cost of deploying IPv6                          | 52%                      |
| Lack of IPv6 applications                       | 50%                      |
| Phishing, Spam, Malware, Ransomware             | 50%                      |
| Management of bandwidth and network capacity    | 34%                      |
| Deploying NAT                                   | 33%                      |
| Hiring and/or keeping skilled employees         | 33%                      |

*“Provide guidance & best industry practice to tackle those challenges. Example, technical training for IPV6, DNS Security. Increase IPV4 allocation per member would be good as well.”*

South East Asia



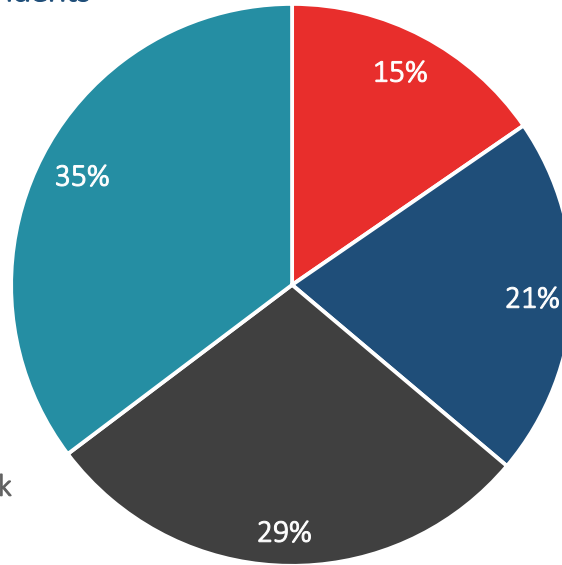
**Are organizations ready for IPv6?**



# IPv6 Deployment

## Q 11 - IPv6 deployment amongst respondents

(n = 805)



- Yes, IPv6 is fully deployed
- Yes, IPv6 is deployed in our core network
- Have a deployment plan
- No

|   | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia |
|---|------|---------------------|----------------------|-----------|---------|-----------------|------------|
| Sample                                    | 136  | 279                 | 390                  | 134       | 251     | 160             | 221        |
| Yes, IPv6 is fully deployed               | 8%   | 14%                 | 19%                  | 24%       | 7%      | 24%             | 10%        |
| Yes, IPv6 is deployed in our core network | 18%  | 17%                 | 25%                  | 28%       | 17%     | 20%             | 21%        |
| Have a deployment plan                    | 47%  | 21%                 | 28%                  | 18%       | 24%     | 33%             | 41%        |
| No  | 27%  | 48%                 | 29%                  | 31%       | 53%     | 24%             | 29%        |



# Challenges affecting deployment of IPv6

## Q 13 - Main challenges affecting deployment of IPv6

% Respondents Selected (Base n = 680, n = 1634)



*“It is just our customer is not ready for IPV6. Moreover, our management has not yet started to feel the need of IPV6”*

South Asia

# Most effective ways APNIC can assist with deployment

## Q 14 - Most effective ways APNIC can assist organisations transition to or deploy IPv6

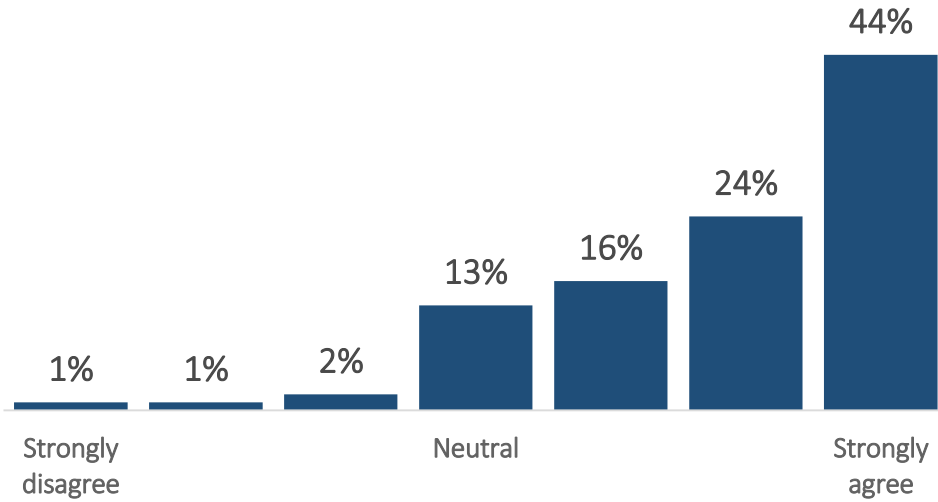
% Respondents Selected, (Base n = 676, n = 1701)

|  | Total | East Asia | Oceania | South East Asia | South Asia |
|--|-------|-----------|---------|-----------------|------------|
| Sample Size  | 676   | 99        | 233     | 122             | 200        |
| Provide case studies and best current practices about IPv6                               | 49%   | 46%       | 46%     | 59%             | 48%        |
| Provide more advanced training in IPv6   | 46%   | 38%       | 35%     | 54%             | 61%        |
| Promote the benefits of IPv6 to management and/or decision makers                        | 39%   | 34%       | 42%     | 41%             | 35%        |
| Promote the benefits of IPv6 to customers/consumers                                      | 38%   | 31%       | 36%     | 39%             | 40%        |
| Facilitate knowledge sharing between member organisations on IPv6 deployment experiences | 31%   | 24%       | 30%     | 38%             | 33%        |
| Promote the advantages of IPv6 to hardware, software and/or content providers            | 24%   | 20%       | 25%     | 20%             | 29%        |
| Promote the advantages of IPv6 to government and related organisations                   | 20%   | 23%       | 21%     | 16%             | 21%        |
| APNIC should take no action to promote or assist with the deployment of IPv6             | 4%    | 7%        | 6%      | 1%              | 1%         |

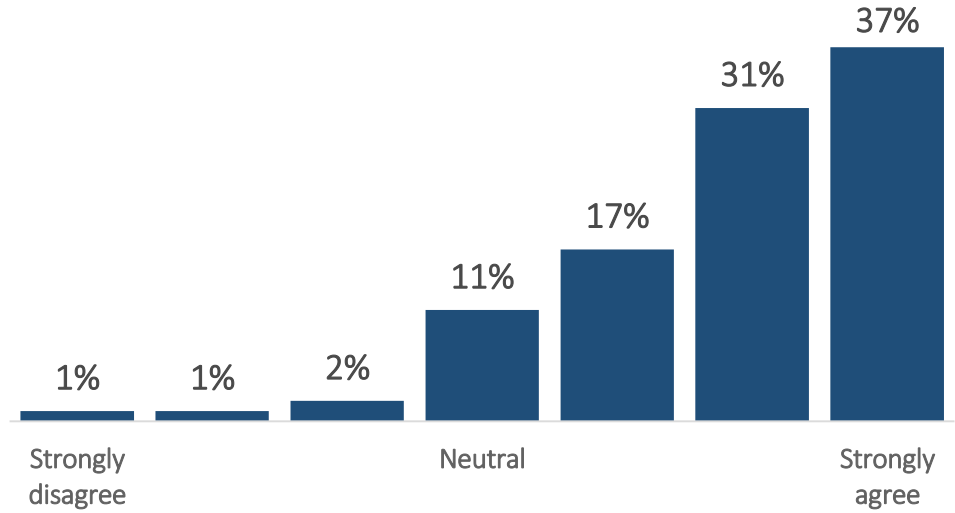


Training

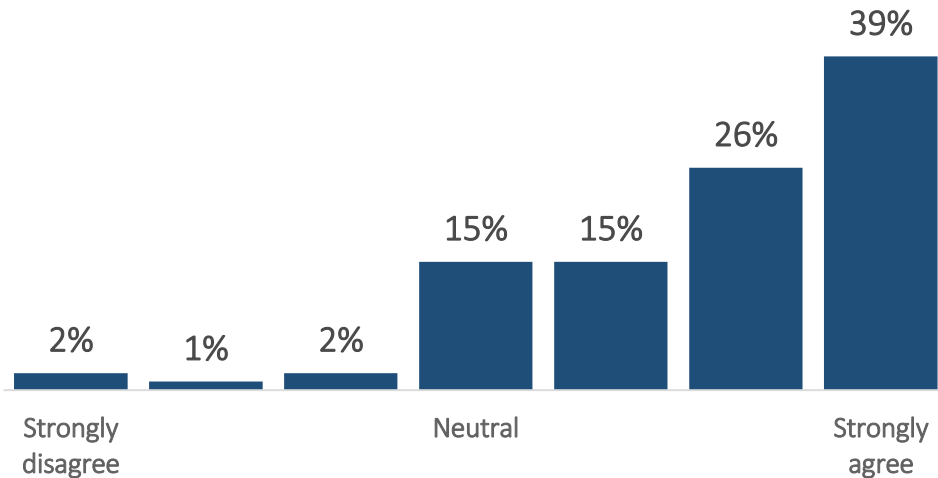
Q 31 - The provision of training is an important function of APNIC



Q 31 - Training offered should be responsive to Member needs



Q31 - APNIC should subsidise training where necessary

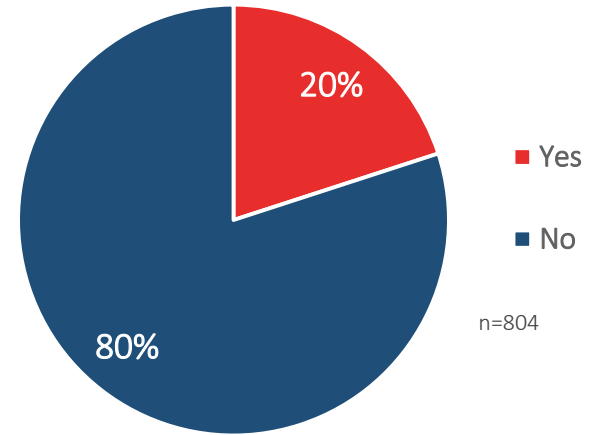
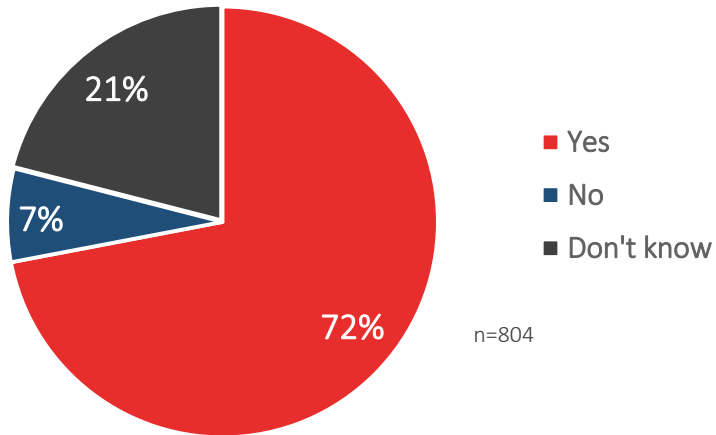


Respondents in least developed economies and South Asia are significantly more likely to consider training as an important function of APNIC than other economy types and sub-regions

# External training resources and participation

Q 32 - To reduce reliance on Member funds, should APNIC seek additional external resources to help build its training and technical assistance?

Q 33 - Have you undertaken training in the last twelve months?



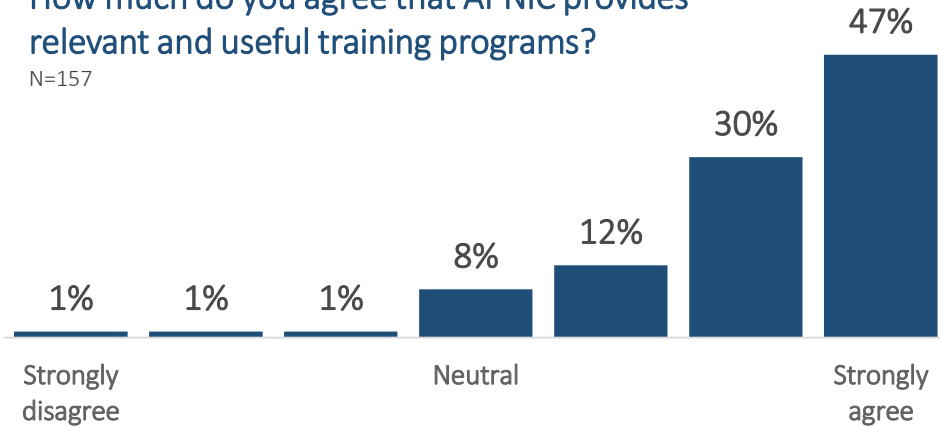
**72%**

of respondents agree APNIC should seek additional external resources to build training and technical assistance services

# Satisfaction with APNIC training

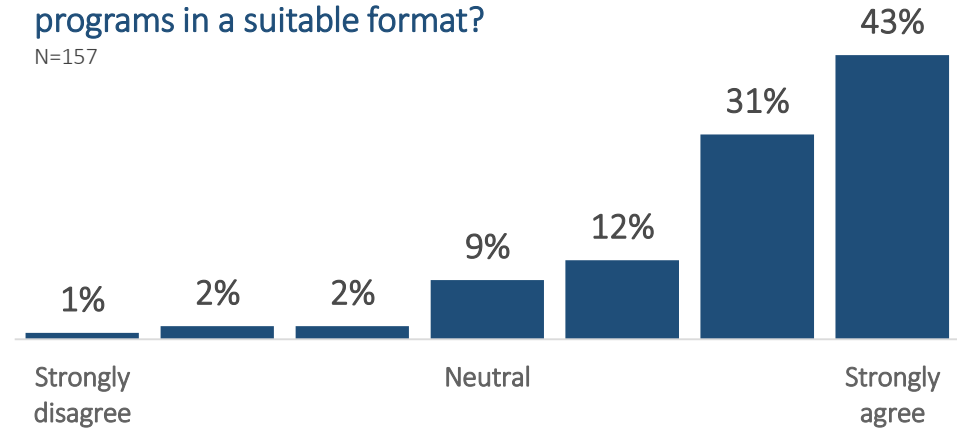
How much do you agree that APNIC provides relevant and useful training programs?

N=157



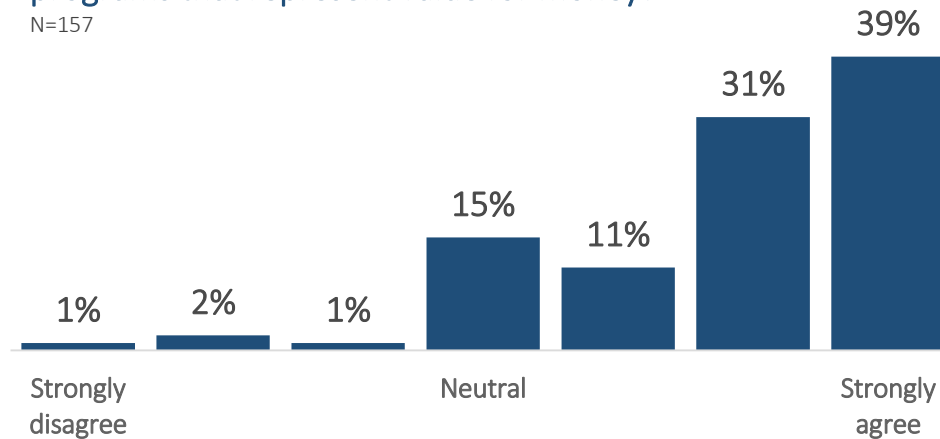
How much do you agree that APNIC provides training programs in a suitable format?

N=157



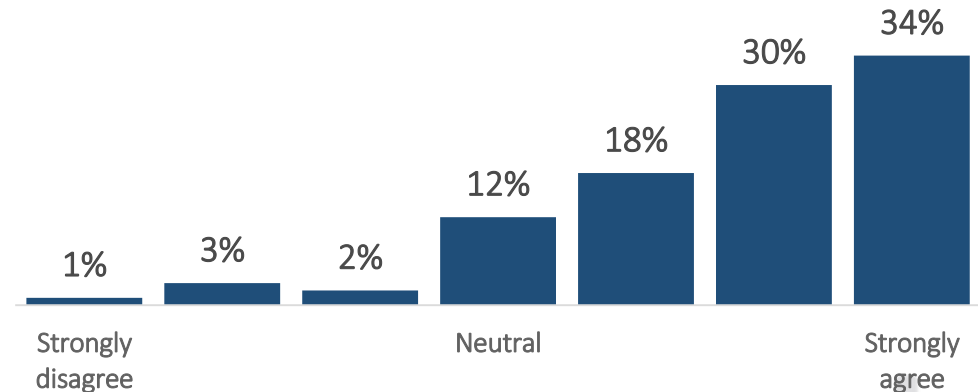
How much do you agree that APNIC provides training programs that represent value for money?

N=157



How much do you agree that APNIC provides a sufficient number of training programs?

N=157



# Training topics of most interest

| Training Topics  | Respondents |
|--|-------------|
| Sample Size  | 799         |
| Network security   | 70%         |
| IPv6 deployment planning   | 55%         |
| Routing protocols (BGP, OSPF/IS-IS etc.)                                     | 45%         |
| Optimizing network architecture  | 43%         |
| DNS and DNSSEC   | 41%         |
| Software Defined Networking (SDN)  | 41%         |
| Virtualization of network functions and/or services                          | 36%         |
| MPLS   | 34%         |
| Best practices for inter-domain routing                                      | 33%         |
| QoS  | 32%         |
| Incident handling and response   | 23%         |
| RPSL and Routing Registry  | 22%         |
| IXP design, operation and management   | 20%         |
| CERT/CSIRT operation and management  | 18%         |
| Training of trainers in any of the topics listed here                        | 16%         |
| RPKI   | 15%         |
| None of these – my organization does not require training support from APNIC | 4%          |
| Other (please specify)   | 1%          |

*“APNIC should provide us more training for network security and IPv6 deployment.”*

South East Asia



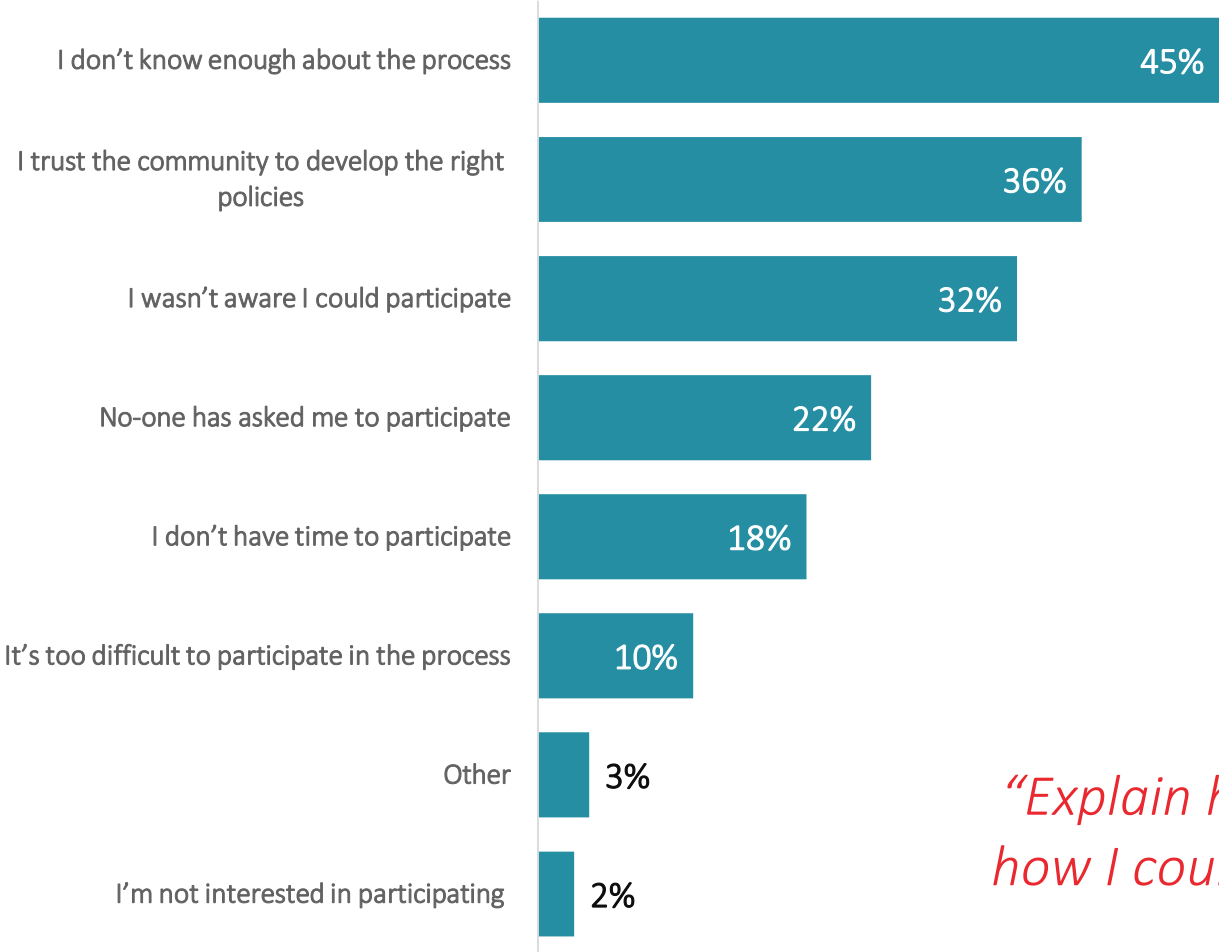


# Policy Development Process, External Relations & New Services



# Policy Development Process for Internet Number Resources

Q 37 - Reasons for not participating in APNIC Policy Development Process for Internet Number Resource Policies



Only **4%**  
of respondents take part in  
the Policy Development  
Process for Internet  
Number Resource Policies

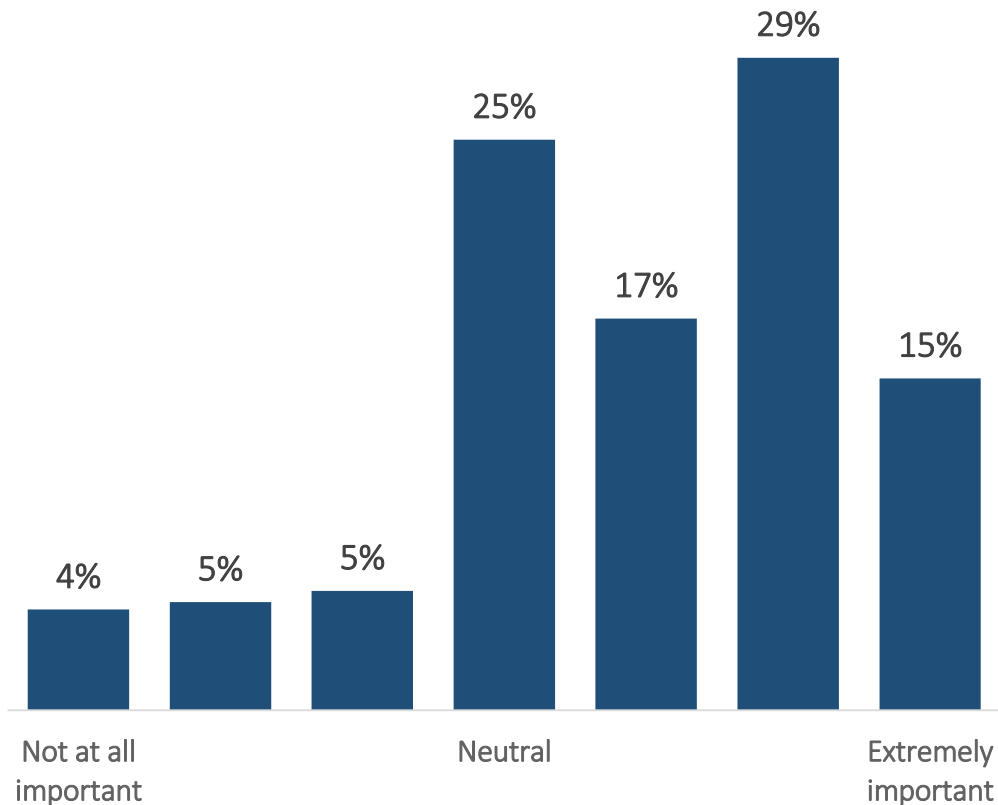
*“Explain how I could be involved and how I could add value to the process”*

Oceania

Base n=1,121, n=1,889

# Local service delivery

Q 26 - Respondents ratings of importance of establishing local APNIC offices or agencies to deliver some services locally.  
(n=610)



From the free text comments provided by respondents about the services that they thought could be delivered locally, over 50% mentioned training.

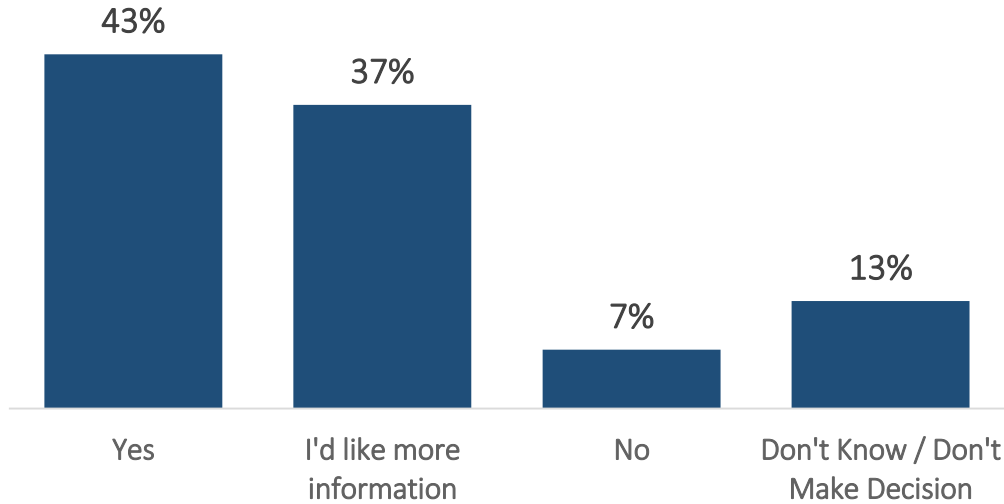
*“Trainings with minimal cost, gathering that can promote unity within members to share knowledge base or best practices”*

South East Asia

# Collecting regional industry data

Q 24 - Interest in contributing to trends and benchmarks for regional Internet infrastructure and related technical and business activities

(n = 798)



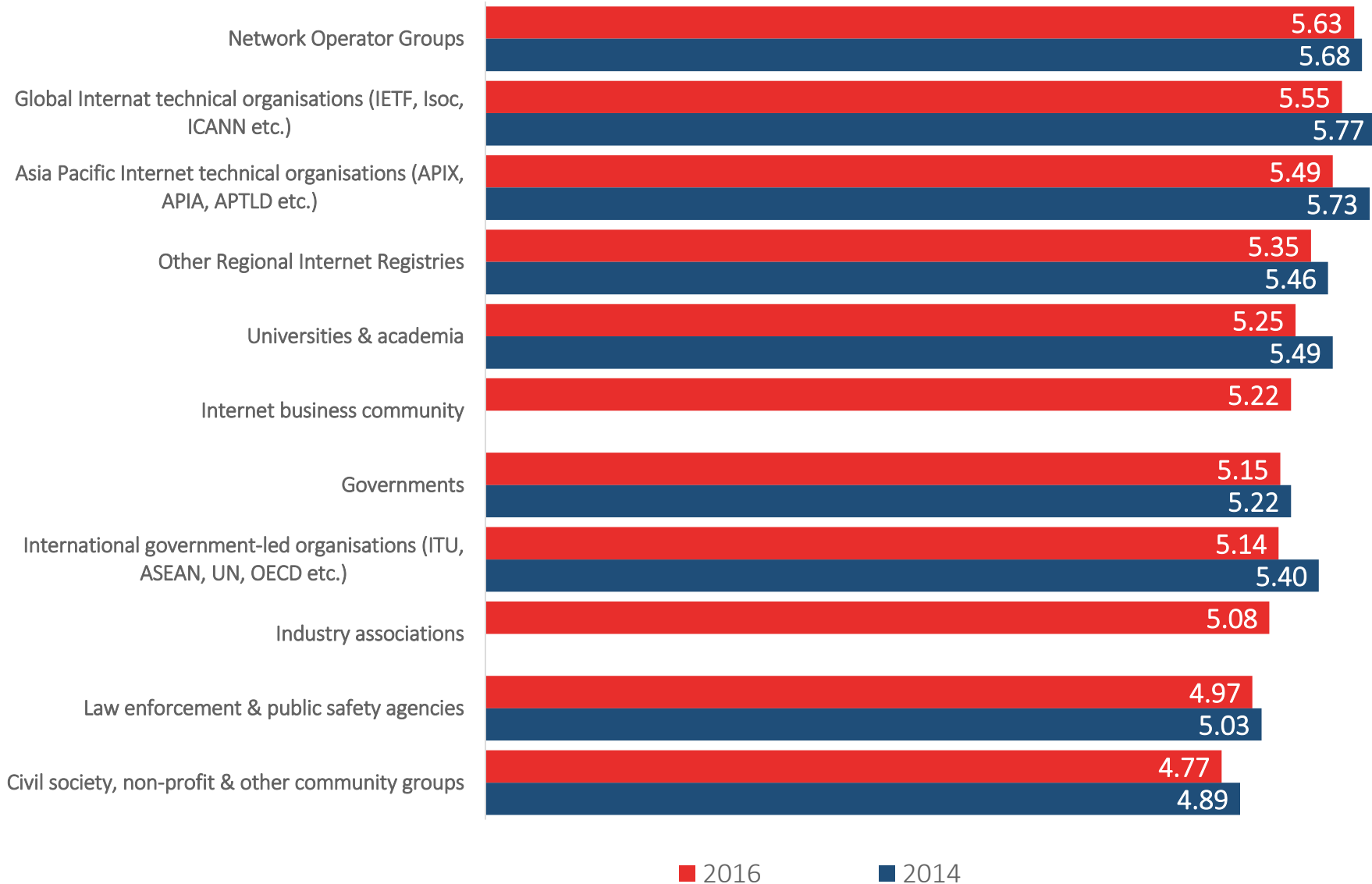
Respondents in LDEs and South Asia are significantly more likely to be interested in contributing information than other economy types and sub-regions

| Interest in contributing to trends & benchmarks | LDEs | Developed Economies | Developing Economies | East Asia | Oceania | South East Asia | South Asia |
|---|------|---------------------|----------------------|-----------|---------|-----------------|------------|
| Sample  | 132  | 279                 | 387                  | 132       | 251     | 159             | 217        |
| Yes   | 67%  | 26%                 | 47%                  | 42%       | 29%     | 45%             | 61%        |
| I'd like more information before deciding       | 23%  | 42%                 | 38%                  | 38%       | 41%     | 40%             | 29%        |
| No  | 2%   | 15%                 | 3%                   | 6%        | 14%     | 1%              | 3%         |
| Don't know / I wouldn't make the decision       | 8%   | 17%                 | 12%                  | 14%       | 16%     | 14%             | 7%         |

# External Relations

Q 29 – On which organizations do you believe APNIC should focus its efforts?

Mean scores (n = 1,137)



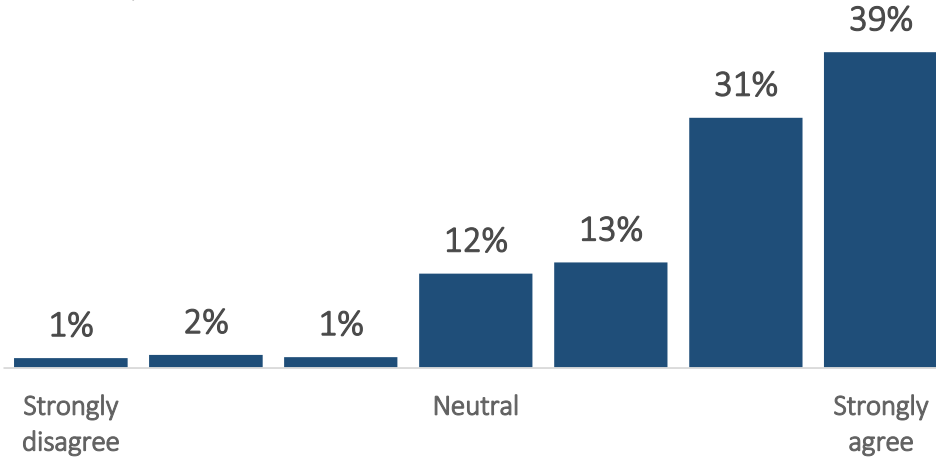


**Member engagement**

# Member engagement indicators

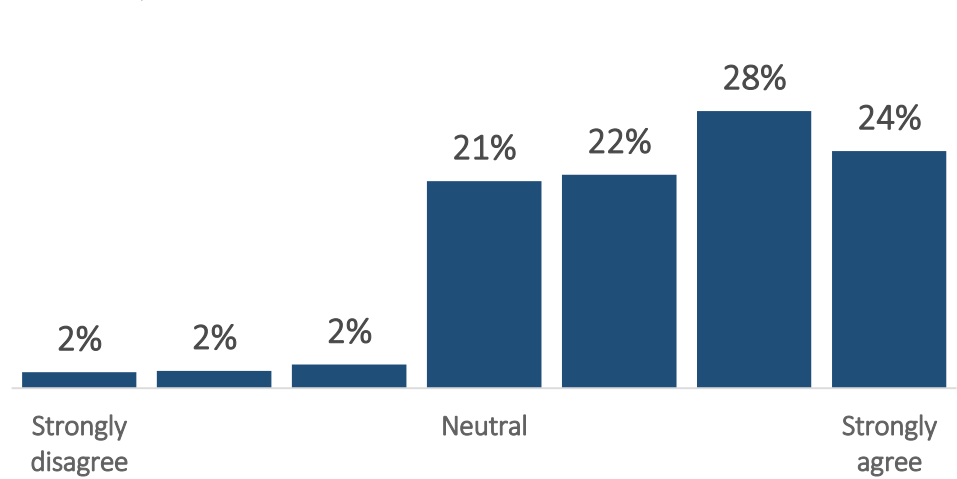
Q 22 - APNIC is respected in the Internet community

Mean=5.86, Std Dev.=1.30 N=610



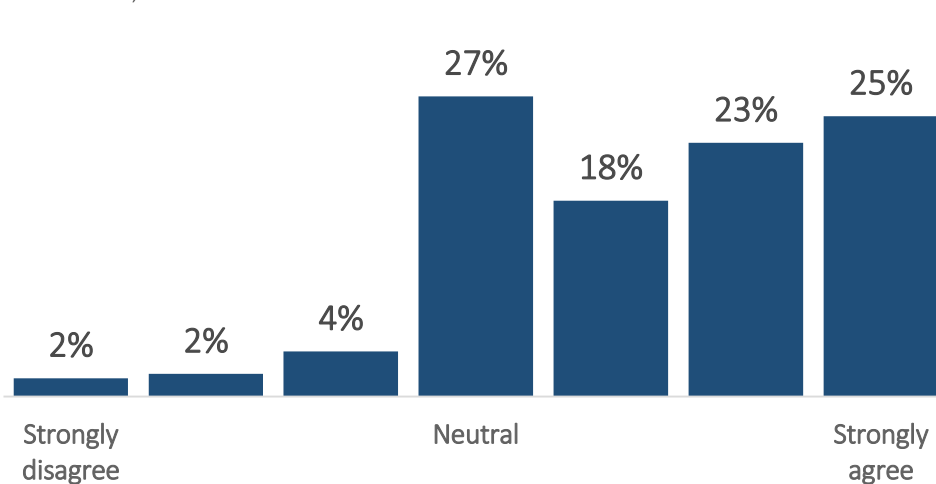
Q 22 - APNIC is open and transparent in all its activities

Mean=5.38, Std Dev.=1.35 N=610



Q 22 - I am treated as a valued Member of APNIC

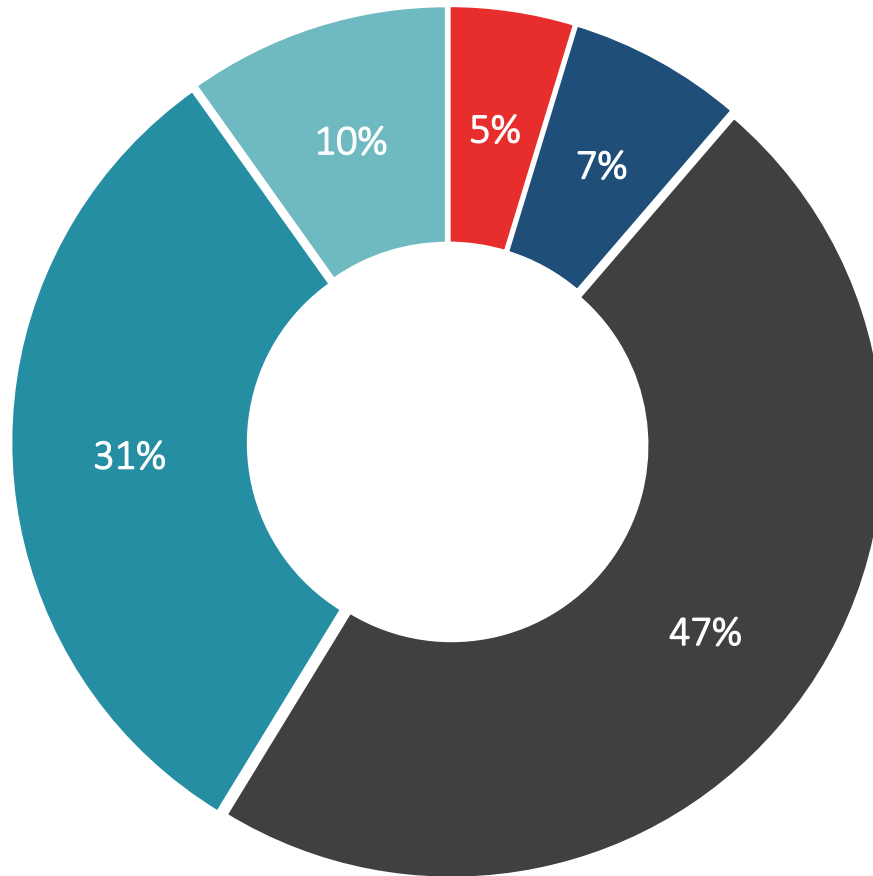
Mean=5.25, Std Dev.=1.43 n=610



84% of respondents agree that APNIC is respected in the Internet community

# Approval


Q41 - Respondents endorsement of APNIC  
(n=1,167)



*“I am experiencing the changing from APNIC, it's getting better and better now”*

East Asia



A vertical strip on the left side of the image shows a nighttime cityscape with illuminated buildings and a body of water. Overlaid on this are several bright, white, curved lines that sweep across the sky from the top left towards the center.

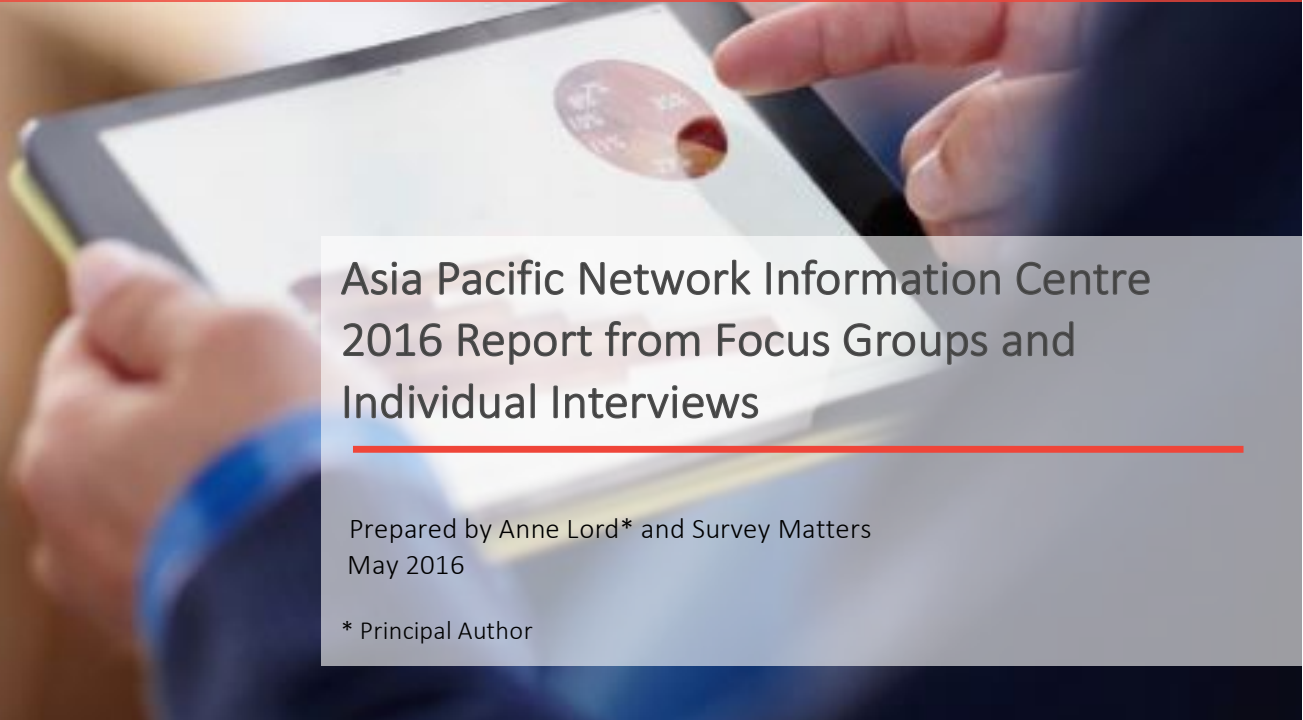
*“APNIC staff interaction has always been extremely professional, friendly and helpful. APNIC is one of the few organizations for which are not just service providers, but a key Member of your community of practice.”*

South East Asia





Questions?



## Asia Pacific Network Information Centre 2016 Report from Focus Groups and Individual Interviews

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Prepared by Anne Lord\* and Survey Matters  
May 2016

\* Principal Author

**APNIC**



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## INTRODUCTION

As a membership-based organisation, the APNIC secretariat conducts biennial member and stakeholder research to gather feedback on its performance and seek ideas to inform its strategic planning efforts.

The research program is in its tenth iteration. It is comprehensive and thorough. It comprises face to face focus groups and individual interviews with members and key stakeholders from around the region. This is followed by a quantitative on-line survey of all members and interested stakeholders.

As with previous surveys, the APNIC Executive Council (EC) commissioned the 2016 APNIC Member and Stakeholder Survey. In a departure from previous programs, APNIC engaged Survey Matters, an independent research agency. Survey Matters assisted with the conduct of the research and provided recommendations to ensure that processes remained in line with current best practice in research.

As a result of the program review, some changes were introduced to the qualitative process:

- The discussion guide topics were reduced from nine topics in 2014 to four main subjects to allow full examination of the topics within the allocated time.
- Random selection of participants by an independent third party was used to ensure representation of members. This removes any bias when the selection is made by the organisation commissioning the research.
- Where permission was provided, the focus group discussions were recorded and an independent note-taker was present to ensure greater accuracy of transcription and subsequent analysis.
- An online focus group was trialled in one location. The purpose was to test the efficacy of conducting qualitative research online compared to the face to face method.
- Separation of technical and managerial members was trialled in one location. The rationale was to test if there were different perceptions and opinions across different roles and whether participants of similar positions and status felt more at ease in sharing their opinions within a like cohort.

To ensure anonymity of participants and confidentiality of the discussions, independent facilitators were used. The focus groups were facilitated by Anne Lord. Survey Matters facilitated the online focus group. Anne Lord and Dr John Earls conducted the individual interviews.

This report is a consolidated view of all the topics discussed in the focus groups and individual interviews. It includes direct quotes from participants to provide depth and richness to the findings. To protect participant anonymity, no names, organisations or locations are identified in the report findings.

### A note of thanks

Thank you to all those who participated in the 2016 APNIC Member Survey focus groups and individual interviews. The feedback provided by the participants is appreciated and valued. In writing this report, every effort has been made to be faithful to the comments received.

Thanks also to Dr John Earls for his wisdom, feedback and continuous support.

# METHODOLOGY

## Selection of locations

Face to face focus groups were conducted in eleven (11) economies, with a total of fifteen (15) sessions conducted. One (1) online focus group was also held, giving a total of sixteen (16) focus groups in the thirteen (13) locations below.

- Bangkok, Thailand
- Delhi, India
- Mumbai, India
- Singapore
- Tokyo, Japan
- Seoul, South Korea
- New Zealand (online)
- Beijing, People's Republic of China
- Hong Kong, SAR
- Phnom Penh, Cambodia
- Yangon, Myanmar
- Colombo, Sri Lanka
- Brisbane, Australia

The APNIC secretariat, Survey Matters, Anne Lord and Dr John Earls selected the locations for the face to face focus groups, with final approval by the APNIC EC.

The choice of location was based on three principal factors: 1) the percentage of quantitative online survey responses in 2014 by economy type (i.e. Developed, Developing and Least Developed), 2) locations visited in 2014 and 3) the location of the NIRs within the region. Government advice regarding travel to some countries and size of member base in different locations were also taken into consideration.

Table 1 below outlines how selection for the focus groups was calculated.

| Region                           | Classification |                   |                            |                   |                 |                   |           |
|----------------------------------|----------------|-------------------|----------------------------|-------------------|-----------------|-------------------|-----------|
|                                  | Developed      | # of Focus Groups | Developing                 | # of Focus Groups | Least Developed | # of Focus Groups | Total     |
| Eastern Asia                     | Japan          | 1                 | People's Republic of China | 2: 1 NIR, 1 APNIC |                 |                   |           |
|                                  |                |                   | South Korea                | 2: 1 NIR, 1 APNIC |                 |                   |           |
|                                  |                |                   | Hong Kong                  | 1                 |                 |                   |           |
| Oceania                          | Australia      | 1                 |                            |                   |                 |                   |           |
|                                  | New Zealand    | 1                 |                            |                   |                 |                   |           |
|                                  |                |                   |                            |                   |                 |                   |           |
| South Eastern Asia               |                |                   | Singapore                  | 1                 | Cambodia        | 1                 |           |
|                                  |                |                   | Thailand                   | 2                 | Myanmar         | 1                 |           |
|                                  |                |                   |                            |                   |                 |                   |           |
| Southern Asia                    |                |                   | India                      | 2: 1 NIR, 1 APNIC |                 |                   |           |
|                                  |                |                   | Sri Lanka                  | 1                 |                 |                   |           |
|                                  |                |                   |                            |                   |                 |                   |           |
| <b>Total # Focus Groups</b>      |                | <b>3</b>          |                            | <b>11</b>         |                 | <b>2</b>          | <b>16</b> |
| <b>Total # Visited by Region</b> | <b>3</b>       |                   | <b>7</b>                   |                   | <b>2</b>        |                   | <b>12</b> |
| % of Focus Groups                | 25%            |                   | 58%                        |                   | 17%             |                   |           |
| % of Responses in 2014           | 25%            |                   | 58%                        |                   | 17%             |                   |           |

Table 1

## Individual Interviews

Individual interviews were also conducted with key stakeholders across the region, in the same location as the focus groups, or via Skype for stakeholders in other locations. In total twelve (12) individual interviews were conducted with fifteen (15) people. The process was managed by the APNIC secretariat, Anne Lord and Dr John Earls.

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## Discussion Guide

In 2014 there were nine (9) potential subjects for discussion. In 2016 this was reduced to four (4) main topics:

1. Issues and challenges related to providing Internet services;
2. APNIC secretariat performance (APNIC members only);
3. The Internet today – security, resilience and stability; and
4. Technical trends being experienced within the region.

The full discussion guide can be found in Appendix A on page 25.

## Participant Selection and Recruitment

Participants for the focus groups were chosen at random by Survey Matters from a full list of member organisations provided by APNIC. The selection process took into account the number of member organisations within each location and the size of the member as defined by the APNIC member classification of Very Large, Large, Medium, Small and Very Small.

Survey Matters randomly selected approximately 40 potential candidates from each location (where member numbers in that location were large enough). The names of the organisations were then passed back to APNIC. From this point onwards, the recruitment of participants was handled as per previous surveys, with APNIC managing the invitation process.

Survey Matters were not involved in recruitment of participants for the NIR focus groups; this was handled by APNIC directly with the assistance of the NIRs themselves. APNIC and NIR staff were available to assist with translating the invitations for locations where English was not the predominant language spoken.

The APNIC secretariat and the facilitators, Anne Lord and Dr John Earls, managed recruitment of the stakeholders for individual interviews.

## Format of this report

This report comprises findings from APNIC members who participated in focus groups and individual interviews conducted during April-May 2016. Additional input was received from non-members who participated in interviews. Throughout the report, where appropriate, a distinction is made between the feedback and suggestions from APNIC members and non-members.

This is the first time that the qualitative information from the focus group participants and the individual stakeholders has been presented together into the one report. The purpose is to provide the reader with information that is more integrated and therefore easier to digest.



## EXECUTIVE SUMMARY

Following the conclusion of the focus groups and individual interviews, all of the discussions were analysed and the principal themes identified.

The majority of the feedback regarding APNIC performance was positive. Collaboration, co-operation and partnerships rather than expansion were seen as key to delivering more with less.

The following summarises the feedback for each of the four main topics. Security was a dominant theme, raised in each of the topic areas.

### Challenges

The three major challenges experienced were the lack of IPv4 addresses, the slow and decreasing uptake IPv6 and the prevalence of network security threats.

The ready availability of IPv6 does not reduce the demand for IPv4 addresses. Obtaining more IPv4 addresses is the number one concern, both technically and commercially. Techniques to deal with the shortages include purchasing additional addresses, either from legitimate or black market sources, deploying Network Address Translation (NAT), internal renumbering and less frequently, deploying IPv6.

Awareness of the IPv4 address market is acute. Prices and risk were perceived as high and trust in sellers was low. While some were resigned to the market led new world order, others cited the principles of resource management: fairness and equal access in calling for APNIC to take a more active role in resource reclamation and recovery efforts.

IPv6 deployment in the region has slowed. Deploying IPv6 in the network core is not difficult, whereas deploying IPv6 in customer networks continues to be problematic. Reasons include the lack of IPv6 applications, the economic burden of migration, the lack of customer willingness to change, risk averse management and embedded IPv4 addresses in legacy equipment. Psychological and knowledge barriers were also inhibiting change.

Suggestions for APNIC help included increased focus on IPv6 deployment, increase the level and availability of IPv6 training, give prominence to successful case studies, expand outreach to universities and end users and to facilitate a more productive dialogue with regulators and key industry players.

Security threats have escalated with many members reporting DDoS attacks, Botnets and other security breaches as their biggest challenge after IPv4 and IPv6. Emphasis was placed on more training, greater information sharing and dialogue between members. Leadership from APNIC to increase collaboration, partnerships and to help formulate a joint approach to tackle security were perceived as the best ways in which it could assist. The accuracy of the Whois Database information was also seen as an essential component of resolving security attacks.

### APNIC Performance

Members were largely happy with APNIC performance, although many mentioned that their contact was largely a transactional one. In particular, the helpdesk staff and training services were praised.

APNIC is largely regarded as a well-respected organisation that it is important to belong to. In the context of a diminishing registry function, some felt that APNIC needed to do more work in reviewing its activities and adjusting the organisational structure accordingly.

Demand for training services was strong with requests for new subjects such as Quality of Service (QoS), detailed training on prevention of Distributed Denial of Service attacks (DDoS), more advanced courses in IPv6 and routing, more face to face training and accreditation.

Changes to the APNIC website have been well received, though navigation could be improved. The blog was not widely read. Social media was useful but lacks Internet community participation. Simplifying the language and providing translation for the more interactive areas of the website used by members were suggestions for improvement.

---

Opportunities exist for APNIC to raise its profile in the economies of the region by participating in local industry events and conducting more outreach to tertiary institutions.

Developing tools, promoting RIPE's (and others) tools, improving the speed and usability of MyAPNIC and the Whois Database, together with broader collection and dissemination of statistical information would add value for members.

## Secure, Resilient and Stable Internet

Concerns for a secure Internet were paramount and consistently generated more discussion than a reliable and stable Internet.

APNIC is perceived as a key regional body with shared responsibilities for a secure, resilient and stable Internet. As such it is well placed to expand the dialogue on security. As stressed in the section above on 'Challenges', the need for collaborative security initiatives, co-operation and partnerships is re-iterated. Reaching out to I\* organisations, governments and related agencies is seen as key to tackling security threats.

APNIC's continued support for capacity building and development activities, such as assistance to Internet Exchange Points (IXPs) and Network Operator Groups (NOGs) was seen as important to aid Internet development in the region.

## Technical Trends

Security was again raised as a concern, especially in the context of identified technical trends like Internet of Things (IoT). Attacks are increasingly sophisticated, making prevention difficult.

Despite hype and speculation, there is no clarity or common understanding over what an IoT future will bring other than the utility of connected devices and an increased demand for IP addresses. More negatively, IoT presents a range of security vulnerabilities for exploitation. Fragmentation of the Internet into many private Internets was also considered a risk.

Cloud computing is on the increase. Trust is not perceived to be an issue, however the requirement for public IPv4 addresses is. Increased network latency and congestion could negatively impact cloud applications requiring fast and large-scale data processing.

Software-defined Networking (SDN) is perceived as a buzzword. Grasping its potential is difficult due to a lack of consistency in vendor implementations.

When speaking about technical trends, APNIC's role as a trusted, neutral and independent organisation comes to the fore, offering a unique opportunity to gather and disseminate impartial and reliable information in the region regarding new technologies and industry trends, enabling the provision of related services.



# FINDINGS

## Topic A – Challenges

By far the single biggest challenge facing members was the lack of IPv4 addresses. This was often coupled with problems related to the deployment and uptake of IPv6. Operational responses and policies for managing attacks to network infrastructure and cyber security threats were also very high on the list of challenges for both members and non-members alike.

Members in some focus groups emphatically placed capacity building at the top of their list, as did a number of non-members, for whom capacity building was a key policy challenge.

Other challenges raised by members include an uncertain and changing regulatory environment, geo-location inaccuracies, congestion and fragmentation of the Internet.

In the following pages each challenge is explored in detail, along with related suggestions as to how APNIC could help mitigate the challenges.

### "There is a critical shortage of IPv4 addresses"

In the context of growing demand for services, many members acutely felt the shortage of IPv4 addresses. Obtaining more IPv4 addresses is the number one business and technical concern.

- *"Lack of IPv4 addresses is the number one problem."*
- *"There is a business impact because IPv4 addresses are getting more and more expensive."*

According to members, management appears to be well aware of the shortage of IPv4 addresses. Strategies predominantly used to deal with the shortage included purchasing additional IPv4 addresses from the legitimate and/or black market or deploying NAT. Without exception, members were making increasing use of NAT.

In contrast to the survey results from 2014, members' knowledge of IPv4 broker services was high. While many had explored the market, far fewer members had actually completed transactions with brokers. High prices were a barrier. Uncertainty and a lack of trust predominate.

- *"We have no idea for the "proper" price of IPv4 addresses, it is like oil."*
- *"We get quotes from the open market and we cannot tell if they are genuine sellers or not."*
- *"Are they [brokers] reliable? I asked APNIC, but they say they are not responsible. It seems to me very risky."*
- *"We did not admit their business officially. Brokerage business does not have a good image in [economy]."*

Other techniques to deal with the shortages included internal renumbering to make more efficient use of IPv4 addresses and less frequently, deploying IPv6. Taking out additional APNIC memberships to obtain small amounts of IPv4 address space was also another strategy used.

- *"The way to get IPv4 addresses is to create a lot of companies and to use the companies to get membership of APNIC."*

Customer demand for IPv4 addresses has also increased, intensifying the pressure for IPv4 resources. The reseller market is very active. A few members spoke of being approached by their customers to lease out their allocation of IPv4 addresses.

- *"Some customers requesting larger than a /24, but we are not sure if they will resell our IP addresses. They ask for 4-5 /24 blocks. We are unable to verify if they will resell."*

- *"Customers say they have more hosts, but in fact it is a commercial decision rather than a technical decision. Everybody is greedy, they try to get more."*

## How can APNIC assist?

Several suggestions were made for APNIC to make more IPv4 addresses available.

It was felt by some that IP addresses should not be bought and sold, citing the importance of the principles of Internet resource management policies: fairness and equal access.

- *"IP addresses should not be bought and sold, they are "public property" and should not be used for commercial gain."*
- *"This is wrong business practice for the Internet community. They are the property of society, not owned."*

Suggestions were also made for APNIC to assist by playing a role in IPv4 address recovery and reclamation efforts.

- *"APNIC should start a campaign to return addresses for the greater good."*
- *"Remove the high prices of addresses and ensure fair access to the addresses."*
- *"APNIC and the other RIRs should be far more pro-active in recovering unused address space. Stanford returned addresses but MIT are still sitting on unused addresses which they do not need."*

Other suggestions included price setting, setting up new allocation policy guidelines for special cases, checking BGP announcements and pursuing illegal activity. There was also a suggestion to buy IPv4 addresses from other RIR regions. Akin to the year 2000 problems, some felt a declared end of life for IPv4 would be helpful to aid planning.

Non-members did not express strong views on IPv4 address shortages.

## "The thrust for IPv6 is seriously faltering"

Transitioning to IPv6 was always part of the conversation when discussing the challenges with IPv4 address supply. Despite the critical situation, several members stated that there were no plans in their company to deploy IPv6 yet. Many felt they would co-exist with IPv4 and NAT for 10 or more years.

The slow uptake of IPv6 was a key concern for both members and non-members alike. Even in the more advanced Internet economies, the situation was similar in that they felt they were a long way off their planned targets for uptake of IPv6 and the rate of IPv6 deployment had slowed. Planning scenarios were totally different from reality, with widespread deployment of NAT.

- *"People have accepted Carrier grade NATs are here to stay and tweaks will do."*
- *"Despite some of the larger organisations announcing that their infrastructure will support IPv6 services, like Apple, Google and Facebook, for the most part, IPv6 deployment for the rest of the infrastructure does not go well. In the emerging countries it is especially difficult. Cellular phone services do not work well."*

Unchanged from the 2014 focus group report, the deterrents to customer migration to IPv6 still focused on the cost of transitioning, the lack of backwards compatibility for both hardware and software and the lack of IPv6 applications.

Additionally, the potential for disruption to the customer base caused management to be risk averse and to focus on obtaining more IPv4 addresses combined with NAT. In exceptional cases, ISPs had paid for the upgrade of the customer's CPE equipment to IPv6 capable devices.

- *"Top management of the company does not understand IPv6 well as they are not technical. So they do not want to take any risks with the change."*

- *"Customer solutions get very tied to the technology - whether it's appropriate or not. And once in production those solutions have very long life cycles."*
- *"Our major challenge is how to promote the wide range of applications to be IPv6 enabled. As an ISP we do not have many tools to push forward the development in this area and this is a problem."*

More than half of the members reported that IPv6 had been implemented in their core networks. They were dual-stacked and IPv6 ready, but they had few or no customers, and were unable to convince them to change. Despite their best efforts, they still needed more IPv4 addresses. A few had IPv4 only in their networks and did not have an IPv6 allocation.

- *"IPv6 will take time and many ISP's still need a large block of IPv4 addresses in the meantime, but we are trying our best internally and with our partners to promote IPv6."*
- *"The backbone is ready, access side is difficult and needs significant budget due to scale."*
- *"We are IPv6 ready but we have zero customers."*

The lack of upstream providers who could provide IPv6 connectivity was mentioned. Whilst not a 'usual' situation, it has a major impact for a particular economy, so is highlighted here.

- *"I have to create tunnelling and it is not very reliable. None of the three international providers who provide connectivity outside [country] can provide IPv6 peering services. If they are not providing IPv6 services it is very difficult for us to start IPv6 services."*

Other reasons to explain the slow adoption of IPv6 included a lack of IPv6 content, a lack of confidence about how to plan and deploy IPv6 and the difficulty of working with hexadecimal addresses. This was all compounded by a lack of provisioning tools and education systems that do not produce engineers who are IPv6 literate.

Non-members were also aware of the issues with IPv6 deployment. Some are trying to lead industry by example. Others had initiated high-level conversations between mobile phone carriers and the government to work together to promote deployment.

- *"Government tries to showcase best practices so in the case of IPv6 the Government has deployed IPv6, trying to lead industry."*
- *"Right now we are engaged in private, very technical meetings with 3 major cellular phone companies, in collaboration with the government - they are going to have a mobile IPv6 launch next year. We have been focussing on cellular IPv6 delivery because major content providers are based on wireless cell-phone access and they will be forced to adapt. This is their strategy to shift deployment."*

Among some members, factors perceived to tangibly drive IPv6 uptake were lowering costs and a clear technical and/or business advantage.

- *"If you can show that IPv4 is more expensive than IPv6 that's a thing to move people over long term."*
- *"There is a need for an explicit advantage to be well defined to move to IPv6 or a tax exemption."*

## How can APNIC assist?

Managing a limited supply of IPv4 addresses was the biggest challenge facing members but IPv6 was the area they felt that APNIC could help most.

Suggestions for the types of help were wide ranging and included targeting end users and management, increasing availability of training, sharing real case studies illustrating successful transition strategies and best practices. More dialogue with large players and vendors was also seen as important as well as reaching out to tertiary education providers. Both members and non-members felt more co-operation and dialogue with regulators would be helpful.

- *"IPv6 is not difficult, but it is difficult and getting customers to understand when they should go to IPv6 is hard. Helping our end users understand why this is important going forward is important."*
- *"Examples of successful transition strategies would be helpful."*
- *"APNIC could help by talking to the regulator to help promote IPv6 deployment."*
- *"Providing material that we can use on IPv6 would be a very big help. For promoting IPv6 to [country], we plan to do the networking to the universities, then we train the teachers how to use it, then they can push it to the students."*

Some of the non-member interviewees were interested in opportunities to help guide them with concrete advice and activities to support IPv6 deployment in their economy.

- *"We are interested in opportunities for consultancy projects to assist the countries in need with, for example, policies and activities to support and promote IPv6 deployment and the development of Broadband Master Plans for individual members. I would like to encourage APNIC to have some small narrowed down and targeted projects."*

## "DDoS really hinders our ability to deliver a robust Internet"

Security has become a much bigger challenge than was reported in 2014. At almost all of the focus groups, dealing with issues of network security was cited as the next biggest challenge they faced after IPv4 and IPv6. Similarly for non-members, for whom cyber-security was at the top, or near to the top of their challenges.

For members, specific reference was always made to the difficulty in managing DDoS attacks, Botnets and other security breaches. DDoS attacks were singled out as being more frequent and more sophisticated than ever, creating significant management overhead. Using DDoS mitigation providers is very expensive.

Route hijacking occasionally came up in the context of security. Knowledge of Routing Public Key Infrastructure (RPKI) appears to have increased from the levels in the 2014 focus groups, however deployment was not widespread. In one group it was noted that deploying RPKI would mean that a DDoS mitigation provider would not be able to their announce routes, negating the mitigation service. The vulnerability of the routing system as a whole was also a concern.

- *"Taking action to protect against this is a very embarrassing and costly issue."*
- *"Use of DDoS mitigation providers is very expensive. If you use RPKI it is difficult to use a DDoS provider."*
- *"Trust anchor is another important issue. Many of the small ISPs do not really understand these issues, routing, trust – which makes the whole system vulnerable."*

Non-members tended to have a more policy-oriented perspective, with cyber-security a major concern.

- *"We are currently planning the next generation of public services over the Internet, but we are held up by the various security, cyber-security threats."*

## How can APNIC assist?

In terms of areas where APNIC could assist with security issues, suggestions from members and non-members included extending the training, information and outreach activities. Collaboration with the other RIRs, national agencies and I\* organisations to assist with cyber-crime was also suggested.

- *"Some of the training courses are very good for the community. It would be useful if APNIC could reach out to universities and to the ICT agency in terms of policies relating to cyber-crime and security."*
- *"As APNIC have access to different organisations, they could also be more of an information provider in matters relating to security."*

- *The Internet organisations should have a joint hand to do something. We are just general users."*
- *"Route hijacking is a major problem and a big issue. RPKI is not widely deployed. APNIC should target tier 1 providers."*
- *"APNIC should be shaping the conversation and do more user facing guidance."*

Both members and non-members saw maintaining the accuracy of the Whois Database as an important aid to tracking.

- *"APNIC is the service provider of the IP addresses, behind that the whois registry is really important: the accuracy, the usability of that directory helps the security professionals do their job."*
- *"Whatever APNIC delivers in terms of the whois registry we have to accept. When we look for some assistance from APNIC, if they are not well prepared, that's it. Of course I expect them to do more."*

## "Geo-location providers are not here to help us"

Across the focus group locations, members nearly always spoke of customer complaints associated with geo-location servers not resolving to correct locations. Particular problems were experienced with APNIC's recent IPv4 allocations or addresses acquired through the market. Resolving these satisfactorily was a challenge.

### How can APNIC assist?

Despite being a widespread problem, there were few suggestions how APNIC could concretely help. Those received include APNIC acting as a geo-location provider, taking measures to further disseminate information about new IPv4 blocks received, and providing a 'track changes' history of the whois APNIC database.

- *"APNIC could help resolve cases of inaccurate reporting with geo-location services, in co-operation with IANA."*
- *"Can APNIC be a geo-location provider or point them to the Whois Database?"*

## "Bandwidth is a big topic"

Keeping up with an ever-growing demand for bandwidth from customers and degrading network quality were challenges generally experienced by members across the region. It was a much bigger issue in some economies where everyone spoke of the same pressing challenge.

- *"But cheap does not equal resilient and fast. It's that whole pick 2 of 3 - but we are being asked to supply all 3."*
- *"This has become a major business challenge, customers are especially worried about their download speeds."*

The need for an IXP was raised in the context of bandwidth management. Non-members confirmed the industry concern for saturated bandwidth and explained how they had addressed the problem by supporting a second IX.

- *"ISP's are worried that their bandwidth is saturated. So they made a proposal to government to be able to double their capacity via a second IX. To boost e-commerce and video services the government assisted in supporting a second data centre."*

### How can APNIC assist?

APNIC was encouraged to continue support for establishing IXP's as one way to ease in country traffic congestion. It was also suggested that APNIC could help by providing some hands on workshops on traffic optimisation and advanced BGP.

- *"Bandwidth congestion should not be in a healthy Internet. APNIC can help facilitate the development of an IX."*
- *"APNIC is seriously focussed on the BGP fundamentals, not on how we can improve throughput, delay and jitter."*

## "There is regulation, but the regulator does not regulate"

The lack of regulation and/or the changing regulatory environment was a challenge for some members. While this was not at the top of the list, it was a factor creating uncertainty.

- *"You have to educate the people in the ministries, look at it from their perspective and then help them come up with regulations that are not crazy. We need to keep the barriers to entry low."*
- *"Can APNIC talk more to regulators and policy makers - to help create an enabling environment."*

## How can APNIC assist?

Non-members in economies with an emerging Internet industry also spoke of regulatory challenges, but in terms of creating a regulatory environment.

- *"If APNIC can design a course only for the regulators, this would be good. For example, how to do the start up of ISP's. What are the steps, how to operate as an ISP, so that when we come up with problems, we know what to do."*

## "We simply do not have enough qualified people"

Regions with an emerging Internet industry placed capacity building at the top of their list of key challenges. Similarly the majority of the non-members stressed capacity building as a key challenge, which often related directly to their role, responsibilities and wider policy purview.

One of the challenges was the lack of qualified staff, training and retaining them. In some locations, the education systems do not have budget or the resources to be able to provide the necessary skills. Where this was the case, it critically impacted the ability of members to conduct their business.

- *"We are a developing country and it will rapidly move on to the next stages, but the challenges are people related, turnover is high."*
- *"If you need someone to learn networking, you have to train them yourself, and then the competitors try to steal your talent."*
- *"When they graduate from the university in IT, they do not meet the market demand."*

Non-members had a host of capacity building challenges, which included a lack of skilled labour, digital literacy inequality, disparity between urban and rural Internet access and infrastructure and promoting local content.

- *"High-density areas have multiple choices to access Internet but low-density areas have no options at all in some cases. Lessening that disparity is a challenge."*
- *"Advanced countries have high bandwidth networks such as LTE and wireless and tend to be hyper-connected societies. Emerging countries struggle to get their backbone in place to support the industry."*
- *"How to increase the domestic contents in this country is a very big topic. I think there is a potential big market."*

## How can APNIC assist?

Building in-country capacity to provide effective training, lowering training costs, providing more advanced training, expanding in country outreach, having a local 'go to' person and improving awareness of APNIC training services were suggestions where APNIC could help.

- *"Helping to support the national colleges and universities would be a very big help, but if someone from outside the country talks to them it really does help."*
- *"If APNIC can send an engineer for 3 months, to help train all the lecturers in universities."*

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For non-members, increased co-ordination, collaboration and partnerships was the overwhelming response to how APNIC could assist with their capacity building challenges. In a number of cases, while acknowledging that APNIC did good work already, there was a strong desire to see more in-country and regional collaboration, an expansion of key partnerships and more information sharing.

- *"APNIC is a good partner, especially in training programmes and public policy development. It has some role to assist in some of the challenges."*
- *"Partnerships are essential to be able to deliver workshops, despite APNIC being "embedded" in these organisations."*
- *"No. 1 priority is capacity building: security topics, IPv6 adoption and transition. This can be done through the hands on workshops, not only for regulator but also for the operators to help build capacity."*

## Topic B – APNIC Secretariat Performance (APNIC members only)

### "Professional organisation, they are amazing"

Many members spoke of their 'limited' engagement with APNIC, stating that their contact was essentially 'transactional' in that they logged in once a year and paid their invoice or occasionally used the helpdesk services. Notwithstanding the limited contact, the organisation was praised for its performance. APNIC is recognised as a respected organisation that conveyed status and that was important to belong to. There were very high levels of appreciation for local language support where it was available and, conversely, disappointment where this support was not available.

- *"Performance of APNIC versus other RIRs is number one."*
- *"In this market if you are not a member of APNIC, then you're nobody."*
- *"Chat is very good, better than it used to be and fast."*

### How can APNIC assist members further?

Suggestions were made to expand the operational time zone of APNIC, open the helpdesk on the weekend and offer increased local language support.

Long processing times and tighter restrictions on foreign transactions made it difficult for members in several economies to pay their APNIC membership fees. A longer notification period for renewals would help, along with opening a local bank account so that fees could be paid in cash.

Given the end of the IPv4 distribution function, a few members felt that APNIC needed to do more work in reviewing its priorities, consulting with its members and adjusting the structure of the organisation accordingly.

- *"Since the APNIC allocation role is dropping substantially, then staffing levels/cost should also decline."*
- *"While current services are generally satisfactory, APNIC needs to review and decide on the role it should play. By APNIC, I mean members. It is a member's organisation. It should still have addresses as its primary focus; have a core membership charge; and then additional service packages which could be tailored to need, size and perhaps ability to pay."*
- *"APNIC seems to be diversifying what it does without member discussion and agreement. Foundation is a good example. That was a top down decision to a fairly passive membership. Is the need social or Internet/structural?"*

### "Training is good but ..."

Training services were praised although with caveats. Again lower fees were stressed as important in some economies, trainers with real operational experience are needed and training conducted in local languages would help members.

- *"To a developed country the fees do not look big but it is often approaching a monthly salary here. It does not make sense to employers."*
- *"Local language is better."*
- *"APNIC could hire or sub-contract with someone who has real expertise that can deliver... for example, security. APNIC staff are good as teachers, but they are not experts."*

### How can APNIC assist?

Enhancements to the training services included suggestions for more face-to-face training, accredited training courses, delivery in local language, advanced and new courses in IPv6, DDoS mitigation, QoS, bandwidth optimisation and routing. There were a number of suggestions to develop alumni of training participants.



- *"Can APNIC follow up with people who have been to trainings, and ask for feedback and get some inputs on what they are going to do after their training, so that they can form some sort of community in the country to help."*
- *"We attended the course on DNSsec - it was a great course, very hands on. At the end of it, it would be really nice to know, how can we get more support going forward."*
- *"Can APNIC help provide some small grant funding to help build up the community?"*

Some felt that APNIC should develop a stronger local presence. This entailed suggestions for building brand awareness by participating in bigger industry events and reaching out to university engineering students through exhibitions and special event days.

### **"The website is better but still a bit complicated to use"**

The APNIC website, although noticeably improved, was still too complex for a number of people. Members were often not aware of information available on the website, suggesting that they rarely went deeper than satisfying their immediate requirements. The blog did not appear to be widely read. Knowledge of APNIC's Facebook page and other social media was low. Facebook users noted the lack of community interaction.

- *"Slower than old website."*
- *"Too much content in English."*
- *"APNIC's Facebook page is silent - only APNIC posts."*

### **How can APNIC assist?**

The feedback suggests that simplifying language and increased translation are key areas to target for further improvements to the website which would help members.

- *"Make sure the interactive parts of APNIC services are in local languages, etc. MyAPNIC, resource delegations and policy documents."*
- *"Content needs to be simplified."*

### **"MyAPNIC functionality has improved a lot recently and is faster"**

Recent improvements to the speed and functionality of MyAPNIC were appreciated. However it was felt that it was still difficult to use, with some areas not functioning correctly. Similarly, the APNIC Whois Database interface was not regarded as very user friendly, with many members preferring faster, more user-friendly alternatives.

- *"MyAPNIC embedded links do not work."*
- *"Too complex, too many steps, display issues."*
- *"RADB is very user friendly, APNIC is not. RADB guides you."*
- *"Comparing with the update speed and the access speed, RADB is quicker. With APNIC it takes too much time."*

### **How can APNIC assist?**

MyAPNIC and changes to the Whois interface were two areas where feedback indicates that further consultation with the community may be needed to address some of the issues above.

### **"APNIC is taking care of its members"**

As part of the conversation about the APNIC Secretariat performance, members were asked whether they felt their organisation was important or valued by APNIC. For the most part, participants cited that they were just basic users of services so had very

little to add or did not need to feel valued. Therefore, with the caveat that there were fewer responses to this question, comments suggest that APNIC is highly regarded and is looking after its members well.

- *"It feels nice to be part of APNIC."*
- *"Yes. APNIC seem to treat members well. Whether small or medium in our experience."*

### How can APNIC provide more value?

In terms of adding value to their APNIC membership, members were evenly divided. Some said that they could not suggest anything to add value to their membership. A small number said they were happy as long as APNIC did its job well.

- *"APNIC best 'job' is ensuring that resources are correctly managed. As long as that happens I don't really have a need to feel valued."*

Others provided a number of suggestions. These are outlined under the headings below.

#### Develop tools

Particular emphasis was made of the usefulness of the RIPE and other tools. The expectation was not that APNIC would replicate tools, but they could develop additional tools while promoting the RIPE (and other tools).

- *"RIPE has taken some good initiatives. They are developing very good tools and we are using them e.g 'BGP delay', 'RIPE Atlas' which helps measure latency from everywhere."*
- *"Tools like 'MXToolbox' which is free software used to check blacklists."*
- *"Develop active training tools e.g. an IPv6 'simulation' DNS tool (like Hurricane Electric)."*
- *"An API would be good so we could pull and push details using a REST API."*

#### Information sharing

Members often looked to APNIC as a neutral, vendor independent source of information with a regional, and globally connected perspective. It was suggested that value could be added to their membership with efforts by APNIC to facilitate and promote greater information sharing.

- *"I have been the contact point for 12 months, and I have seen emails about elections etc - that's not the level I want to be engaged. I would like to know what forums there are, what's happening in the industry."*
- *"It would be really good if there was a forum on DDoS (not mailing lists)."*
- *"As a member I would like to know what the organisation is doing."*
- *"Help to build directory services - to know who is doing what."*

#### Provide local support

Whether temporary or permanent, having a local support person would add great value for some.

- *"The way APNIC works and how things work in [economy] is completely alien."*
- *"[Economy] is at a completely different level of economic development. You just need a bridge. Having a local speaker on staff would not really help - it is someone on the ground that is important. It is a different mind set and there is a different order to doing things."*

## Topic C – A secure, resilient and stable Internet

Prior to a discussion about APNIC's role in a secure, resilient and stable Internet, APNIC's broader activities beyond resource management and training often had to be elaborated to provide context for the members and to a lesser degree with the non-members. This indicates a general lack of awareness of APNIC's activities in this area.

Where comments were forthcoming, it was similar from both members and non-members alike, in that concerns for a secure Internet were paramount. Members often made more specific suggestions, but both groups stressed the need for greater co-ordination, collaboration and outreach.

Continuing support for Internet development and capacity building were perceived as important ways in which APNIC could continue to contribute to resiliency and stability. This included support for IXPs and NOGs, as well as support for community led initiatives.

### "If APNIC wants to join hands with the other Internet organisations to maintain a stable, healthy Internet environment, they should do something and explore how they can help"

As noted earlier in this report, security is a key issue for members and non-members alike. Effective progress to tackle security was linked to the need for broader collaborative security related initiatives to be undertaken by APNIC and the community. Suggestions also included promoting tools and information, providing education and awareness on how to prevent DDoS attacks and increasing work with CERTS.

- *"APNIC can provide more information and tools on how to deal with security."*
- *"APNIC could collaborate to produce a guidebook or workbook on the issues around cyber-security. It could be made by APNIC (and/or ISOC) and be distributed through the NIC's or ccTLD's to be put into local language. Making this kind of information stream to the people in the region would be really wonderful."*
- *"Be an information and support bridge - for example, for DNS hijacking ... between ISC and the operators?"*
- *"Can APNIC take leadership on establishing a regional Security Operations centre, where operators can share their ideas and information regarding DDoS and other security attacks?"*

### "A C-level forum would be good, like a roundtable/informational session sponsored/organised by APNIC"

Some felt that APNIC should provide more opportunities for CEOs to understand APNIC's work. This would provide them with a deeper understanding of how a secure, resilient and stable Internet related to their business objectives.

- *"A C-level forum would be good, like a roundtable/informational session sponsored/organised by APNIC, would be very helpful...once every 6 months, with invites from Paul Wilson."*
- *"The Internet is so core to so many businesses these days and even in the supposedly technical space a lot of the decision makers don't understand the issues (IPv6 especially)."*
- *"APNIC should do more in the non-technical C-level advocacy."*

Non-members felt that increasing outreach to government and regulatory bodies were important activities that could help with contributing to a secure, resilient and stable Internet. Some non-members felt that they were equally responsible for critical infrastructure.

- *"Increase co-operation with NIC's, ISOC, governments and other areas. This is how APNIC can help with these issues."*
- *"As Government we are not so aware of what APNIC is doing. I do not think there is harm in going around to Governments and doing the introductory pitch so that there is more awareness of these technical organisations that are primarily industry and in regards to the Internet that it is really multi-stakeholder."*

- *"They are not strangers on the international circuit, but they are seen as technical people and therefore you may not intuitively go to them as Governments. APNIC needs to initiate the outreach. Face to face is key, usually at international meetings."*

Continuing the policy and collaboration theme, the non-members appreciate APNIC's involvement with the IANA transition.

- *"This activity [IANA transition] was very important and is a concrete example of APNIC's contribution to a secure and stable Internet. This is very valuable from our perspective."*

Non-members raised the role of the US government in ICANN in the context of security and stability.

- *"The IP address registry (IANA) is left to do its job under the US government but are they influencing the policy making process?"*
- *"The role of the US government is upsetting many Asian countries. Politics is a challenge which did not really exist 10-15 years go."*

### **"It [the multi-stakeholder model] is not really inclusive... It is a discussion that takes place between insiders"**

Some felt that to effectively safeguard the future of the multi-stakeholder model much more effort was needed to encourage participation from different stakeholder groups.

- *"We need an awareness campaign to the users of the Internet to educate them about the importance of the 'multi-stakeholder' model. This kind of outreach is now needed to the next generation to safeguard their and our future Internet."*
- *"There is a huge impact to APNIC in terms of the different and new stakeholders emerging in the Internet landscape. We should invite them into our circle; if we leave them out they will make their own world. We want to share all the resources as much as possible. APNIC should invite 'Ali Baba' data centre designers to APNIC. This could be very interesting. Or 'Tencents' in China, we could discuss about security in the banking systems for example."*

Members also felt that the increased focus on security was at the risk of freedom, which is an important attribute of creating and managing today's Internet with its characteristics of openness, inclusiveness and bottom up, multi-stakeholderism. Increasing the dialogue with policy makers about the balance between security and freedom was felt to be important.

- *"There is an increased concern for security, which may decrease freedom."*
- *"We should be able to self-regulate rather than over-regulate and we need be active to ensure the balance is correct."*
- *"APNIC can work more closely with the Government. They will listen more to APNIC. Maybe they have different concerns that we do not know about. Maybe APNIC can talk to them and mitigate their concerns by talking to them."*

### **"APNIC plays an important role in [economy] in supporting NOGs"**

Members in economies with a less mature Internet industry were aware of APNIC's work in the region to enhance Internet resiliency through activities such as helping to establish IXPs, NOGs and the development of 'community'. There is a strong desire to see APNIC continue support for these activities. There was also a suggestion for APNIC to provide seed funding to mobilise local activity.

- *"This is one of the major things we have to address. If APNIC can support us to form a NOG. All the operators operate as individuals, but we should be interlinked to get things solved."*
- *"Can APNIC help provide some small grant funding to help build up the community?"*
- *"Provide micro funding to support community initiatives. The amount of money does not have to be large."*

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While support for NOGs was felt for the most part to be extremely valuable, members noted that different cultural norms play an important factor in determining their success. These should be carefully researched prior to efforts to support a NOG activity. This was echoed by several members in economies where NOG's did not exist.

## Topic D – Technical Trends

Both members and non-members observed similar trends in technology. IoT was perceived as a buzzword with no real impact to any of the participants although it was believed that it would be prominent in the future. Software Defined Networking (SDN) was perceived as another buzzword, with the diversity in vendor implementations making evaluation difficult.

Security related issues were raised again in the context of technical trends, with an increase in sophistication and organisation of attacks cited.

Cloud computing was seen as a growing trend, with an increase in private clouds.

In some economies, members felt congestion and instability were growing trends. Block chain technology was noted for its potentially disruptive impact as well as generating opportunities. Additional mention was made of virtual machines and artificial intelligence work.

Changing technology was impacting the established business models for some. While providing opportunities, there were also concerns. One of the key concerns raised was fragmentation of the Internet. For non-members, such changes were felt in some cases to challenge existing policy frameworks. As a consequence, they look to APNIC for assistance and guidance.

### "IoT is a playground just now - it's not commercially viable"

Few members were actively engaged in IoT. Non-members, predominantly from a public policy perspective were more actively exploring opportunities for IoT applications. Overall, concern was expressed about the lack of direction in IoT, its need for a large number of public IP addresses and security vulnerabilities.

- *"Security in IoT is a big issue."*
- *"Many members are concerned with this and want to invest in IoT. They know that IoT needs number resources. We need fully-fledged IPv6 to accomplish their goals."*
- *"I" for the IoT is not for the Internet but is more about closed networks, for example, sensor networks. The increase in IoT devices does not mean increase of activity on the Internet."*

In terms of support that could be provided by APNIC, non-members commented that APNIC needed to highlight this topic more.

- *"IoT is a can of worms. There is much waffle and people claiming they understand it all. The problems will wander off and snowball. In this area what the ITU is doing is nonsense. APNIC needs to flag more of these issues at conferences."*

### "SDN is another buzzword"

Members looked to APNIC as a neutral, impartial and trusted organisation, rather than vendors to make sense of SDN. While very few were using it, everyone had heard of it.

- *"The term is not well understood especially as different vendors have different terminology and implementations."*
- *"SDN is another buzzword to which each person you ask a) gives you a different definition and b) when you ask them questions they do not really understand it anyway."*

### "Patterns of traffic are changing. Outbound traffic is twice as much as inbound"

Cloud computing is on the increase. Despite heightened security awareness, trust in the cloud was high; specifically trust in for example, Microsoft and Google. The cloud trend was causing an increase in the demand for public IPv4 addresses. Some noted that the trend for cloud computing was a move in the wrong direction.

- *"The trends for big data, cloud computing, IoT etc are currently based on large computing number crunching in data centres. With IoT many m2m applications will require very low latency e.g. for auto-operation etc. In this case people are now realising that the data centre is too far away from the local network operation. Computation resources should be in the customer networks, where they can easily be controlled. Few people realise this."*

- *"No trust issues, good thing, but huge demand for IPv4 addresses."*
- *"Decrease in the size of server space, decreasing costs of rack usage."*

### **"Customers just want more stability, less congestion"**

Several members felt that the services that they provide are not stable and suffer from congestion. When selecting ISPs customers used this as a point of differentiation.

- *"Right now it has become a real concern, customers are benchmarking operators based on the throughput."*
- *"Jitter and lack of bandwidth affecting cloud services mostly located offshore."*

### **"The increase in 'ransom-ware' is a hot topic"**

Malware, botnets, ransom-ware are evolving rapidly in sophistication and becoming increasingly difficult to prevent.

- *"Local/individual entities do not understand – yet it is critical to their business e.g take a small florist everything is Internet based orders, purchases accounting. They do not realise that 91% of Malware is Ransome ware; they have 2 vulnerable laptops and no knowledge about what to do."*
- *"The increased incidence of spam, malware and ransom-ware are evolving in their sophistication and consequently pose increasing threats to daily life."*

### **"We are still catching up"**

An element of the membership in less mature markets felt that they needed special consideration as they were playing 'catch up' to technology.

- *"Things that are old hat in other markets, a lot of people here are learning about them and struggling with them."*

### **"Fragmentation is a huge issue"**

A small number of members focused on the impact of trends. These included the risk of fragmentation of the Internet, the need for heavy computing processing power at the edges of the network, the decrease in popularity for proprietary hardware, the criticality of security and alternatives to IPv6.

- *"Large providers e.g. Facebook or Google want specialised hardware available only to them. This is causing a change in the structure of the big IT industry suppliers. We do not need DEC or HP anymore."*
- *"There is a risk of fragmentation with IoT networks. Despite using TCP/IP, designers want to create their own backbone, which is private and which they control. This is especially true with new participants into the industry."*
- *"Some parts of the industry are looking to explore new areas of technology where they do not need IP addresses, for example non licensed frequencies. They think that this might be another way for some companies to avoid the adoption of IPv6 and be ahead of the industry."*

Some of the non-members responsible for policy felt that the impact of new technologies and technical trends challenged the existing framework for policymakers.

- *"We are solving problems like whether the mobile Internet needs may need new governance and control measures from a personal data security perspective but also want to make use of big data to be able to provide the best user experience."*
- *"New technologies contribute to the digital divide rather than bridging the gap. Spam, malware, ransom-ware, etc. are a continuous problem to all citizens. Digital privacy and cyber-security are the top priorities of the member countries."*

- *"Many retailers have online shops, but the selling is all offline. There is only advertising online at the moment. But we have no regulations and policy, consumer protection etc for how this should work."*

## How can APNIC help?

There were few ideas regarding how APNIC could assist. Some suggested that APNIC was already doing enough and that moving outside its current remit was not helpful.

The suggestions received are elaborated under the headings below.

### "Add services evaluating new technology, research and awareness"

APNIC's role as a neutral and trusted organisation, independent from vendors was highly valued. Suggestions were made for APNIC to enhance or add services providing impartial, reliable information regarding new technologies, industry trends and to provide related information services for the community.

- *"Add services evaluating new technology research and awareness."*
- *"APNIC is agnostic - new technology information comes from tradeshows and vendors, but you do not know whom to trust. APNIC is a trusted organisation; it is non-commercial and is in a unique position."*
- *"They need to educate people on SDN. While it is a powerful paradigm, members do not really understand it. It is a hype bubble at present. They don't know the difference between control plane and data plane."*
- *"A YELP for Internet services amongst members, so that we have an awareness of what different services are out there would be good."*

While supportive, a few expressed caveats in APNIC providing statistical information and services, stressing the need for accuracy and timeliness.

- *"Data needs to be available quickly as industry is changing very quickly."*
- *"Interested, but we are concerned over whether we would be allowed to provide the information."*

### "For APNIC, my point is that it is all about collaboration - it is key!"

Replies from non-members were different. First and foremost, regulators, governments and regional organisations all wanted more collaboration with APNIC and for APNIC to expand its collaboration activities.

- *"Co-operation with APNIC is good, but we would like to co-operate more with APNIC."*
- *"In order to successfully deploy 5G and IoT, devices need IPv6. APNIC needs to help with this, by reaching out to our members and to regulators in each country and also the equipment vendors."*
- *"We have studied cyber-security 15 strategies from other countries, but if we can get some consultant to advise on these strategies it would be really useful. We have already asked to the ITU, who have given a positive response."*
- *"APNIC has good relationships with country governments in the Asia Pacific area. At APRICOT we could have some kind of workshop, or there could be in country conferences. Every single country is interested in IoT and big data. We can share with the government people what the real issues are for IoT."*

### Last but not least:

- *"Please send our regards to APNIC staff and management. We want to build on the co-operation."*





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# APPENDIX A

## NOTE

NIR members and individual non-member interviewees used the same questionnaire as the one below, omitting topic B - Secretariat Performance.

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## Discussion Guide APNIC Members

### Welcome & Introduction

Thank you for attending the APNIC discussion.

This document provides you with information about how the Focus Group discussion will be conducted and the topics that we will discuss. We hope this helps you to prepare for the session.

### How the session works

#### The session works as follows:

- An independent facilitator, Ms Anne Lord, will conduct the session. No APNIC staff will be present
- The session will be recorded. The recording will be destroyed after the survey
- The information you provide is completely confidential and anonymous
- Everyone will be given time to contribute their ideas and opinions on the different topics. Please respect the group members and give each other time to provide feedback
- There are no right or wrong answers. We want to understand your opinions but not to find consensus or agreement. Please feel free to share your feedback even if it's different from what others have said
- Please respect each other's privacy and confidentiality. Do not share any information discussed with other people when you leave

### During the session

- Please turn off mobile phones, tablets or computers.

## Topic A – Challenges

1. What are the biggest issues or problems that you face in providing your Internet services today?
2. Could APNIC assist you with any of your issues? What can they do that is not being done now, or where could they improve?

## Topic B – APNIC Secretariat Performance

As a member-based organisation, APNIC aims for a culture of excellence across all the activities they perform.

APNIC also tries to make changes in response to feedback to improve its services and service delivery. From the 2014 survey they made a number of changes based on your feedback, such as:

- Reduced fees
- Introduced Paypal as payment method
- Increased transparency and reporting against activities
- Introduced "instant feedback" which can be given on services
- Made improvements to MyAPNIC
- Increased support for RPKI deployment
- Established a member outreach programme
- Started work on accreditation (exam based) for APNIC training

You can also go to the APNIC website to view all of the initiatives:

<https://www.apnic.net/survey-response-activity>

### 1. What do you think about APNIC Secretariat overall performance in the past twelve months?

For example,

- Can you think of examples where APNIC performed very well?
- Can you think of examples where APNIC performance did not perform very well?

### 2. Can you tell us about your membership of APNIC – do you feel supported and important?

- Think about your involvement in APNIC activities, how you provide feedback to them, and how you communicate with APNIC.
- Can you think of an example when APNIC provided a good support ? could they do better?

### 3. What could the APNIC Secretariat do to add more value to your membership?

For example

- New services, training and education, communication with APNIC, or meetings or forums that would provide you with value.

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## Topic C – The Internet

APNIC's core focus is technical. Core activities are providing Internet registry services to the highest possible standards of trust, neutrality, and accuracy. APNIC also supports the development of regional infrastructure, provides technical education and training, shares information and provides leadership and advocacy for the region.

These activities contribute towards a more secure, resilient and stable Internet. This benefits everyone.

### 1. How can APNIC help to contribute to a secure, resilient and stable Internet?

For example,

- Could they provide more technical services and tools, more training and education with different audiences, increase engagement and support for policy and governance, more liaison with CERT's and other security agencies?

### 2. Are there things they are not doing that they could be doing to help?

## Topic D – Technical Trends

We are interested in the technical trends that are developing within your economy and how they impact you in conducting your business.

### 1. What changes in technology and / or technical developments do you see in your economy? How are these impacting the way you do business?

For example,

- Cloud computing, Software Defined Networking, IP connectivity demands for household devices (the Internet of things), trends in ASN and IP address usage, security services

### 2. Is there anything that APNIC could do that would help you with these trends, that you feel are within the scope of their activities.

For example,

- Gathering data to provide a picture of networking trends; reporting of information services; tools that you could use; delivering localised training in emerging technical trends etc.

## End of Session

If you have additional information that you did not get to say, please talk to us after the session.

If you have any other questions about the discussion, please also ask us.

# Agenda Item 12

## APNIC Foundation update

## **The Board of the APNIC Foundation and its members**

### **1) Proposed selection process for the Board of the APNIC Foundation**

#### **PRE EC MEETING**

- APNIC EC members are invited to submit names for possible selection to the APNIC Foundation Board (using the nomination form provided and responding to the criteria of the position description). Self-nominations are allowed.

#### **DURING EC MEETING**

- EC discuss nomination list and agree on a short list of 2-3 candidates for possible appointment. Voting can be considered if needed.

#### **POST EC MEETING**

- Selected candidates are contacted and asked to formally submit an expression of interest (to avoid misunderstandings over possible rejections, it is recommended that candidates are contacted one-by-one).
- EC considers candidate's formal application and approves for nomination to the Foundation Board.
- Foundation Board votes to include EC nominated candidate(s) on the Foundation Board.

### **2) Board development strategy**

The long term goal of the Board development strategy is to achieve a membership of individuals who:

- Have the personal and professional interest and resources to support the Foundation's activities to a substantial level and are willing to make a commitment to do so.
- Have a network of relationships in the Asia Pacific region (and beyond) that they are willing to contact to seek support for the Foundation's activities.
- Have the knowledge and experience to help develop the Foundation and the Internet in the Asia Pacific.

With this goal in mind, the development strategy for the board will be in three stages:

- Introduction: Minimum number of board members (2) in place to ensure efficiency and flexibility during the setting up period (6-12 months)
- Interim: Between six and eight Board members from the APNIC community who have the resources and networks needed to help provide the financial support the Foundation will need to get started. These board members will prepare the Foundation for the full board (1-2 years)
- Full: Eight Board members from the Asia Pacific region who satisfy the three criteria listed above (in place by the third year).

### 3) The Board of the APNIC Foundation

The Board's role is to strategically guide and support the work of the APNIC Foundation and provide mission-focused leadership and governance. While day-to-day operations are led and managed by the Foundation's executives, the Board-executive relationship is a partnership, and the appropriate involvement of the Board is both critical and expected.

Hong Kong's Department of Social Welfare in a reference guide for boards advises the following: "Together with guiding corporate strategy, the Board is chiefly responsible for monitoring organisational and managerial performance, ensuring appropriate stewardship of the financial resources, and balancing competing demands."

### 4) APNIC Foundation Board Member

**Overview:** Board members set corporate and strategic policies and goals and delegate authority to the CEO to implement policies and goals in the day-to-day management of the foundation. Board members are also trustees of the foundation who approve an annual budget that ensures it can meet its financial needs. In addition, board members monitor the overall financial health of the foundation by reviewing the annual reports of an auditor.

An essential part of a board member's role in ensuring the financial health of the foundation is to actively contribute and support the foundation's fund raising efforts. This would include providing regular advice on fund raising strategy; identifying possible sources of funding; and introducing and encouraging potential investors to support the foundation and its work

The CEO retains responsibility for day-to-day operational expenditures. Individual board members should attend all board meetings and actively participate in them and serve on committees and/or as board officers. Board members have the responsibility to know and fulfil their role in the foundation and to act in the best interest of its constituencies.

The two most important roles of a Board member are:

**Governance:** To act as a voting member of the board with full authority and responsibility to develop policies for the operation of the foundation; to monitor the foundation's financial health, programs and overall performance; and to ensure the chief executive officer has the resources needed to achieve the foundation's goals and serve its community.

**Fundraising:** Board Members should recognise the fundamental role of fund raising to the success and sustainability of the Foundation and support efforts to ensure the Foundation can credibly solicit support from foundations, organizations, agencies and individuals.

In addition to these two fundamental roles, Board members also have the following responsibilities:

**Leadership, governance and oversight:** Board members should:

- Represent the Foundation to stakeholders; acting as an ambassador for the Foundation

- Serve as a trusted and strategic advisor to the CEO in the development and implementation of the Foundation's strategic plan;
- Review outcomes and metrics developed by the Foundation for evaluating its impact, and regularly measure its performance and effectiveness using those metrics;
- Review agenda and supporting materials prior to board meetings
- Approve the Foundation's annual budget, audit reports, and material business decisions; being informed of, and meeting all, legal and fiduciary responsibilities
- Contribute to an annual performance evaluation of the CEO
- Assist the CEO and board chair in identifying and recruiting other Board Members
- Partner with the CEO and other board members to ensure that board resolutions are carried out
- Serve on committees or task forces and taking on special assignments
- Ensure the Foundation's commitment to a diverse board and staff that reflects the communities the Foundation serves

**Duties:**

- Attend board meetings regularly
- Become knowledgeable about the foundation and its work
- Come to board meetings prepared and informed about agenda issues
- Contribute to meetings by expressing a point of view
- Consider other points of view, make constructive suggestions and help the board make decisions that benefit the foundation's goals and strategies
- Serve on at least one committee
- Represent the foundation to individuals, the public and other organizations in a positive and professional manner
- Support the foundation through attendance at special events and activities. And – where appropriate- through meaningful financial contributions
- Assume board leadership roles when asked
- Keep the executive director informed of relevant community concerns
- Maintain confidentiality of board discussion

**Board terms**

The Foundation's Board Members will serve a 2-year term and be eligible for re-appointment by the APNIC EC for one second term.

**Qualifications**

Board Members will have achieved leadership stature in business, government, philanthropy, and/or the development sectors. Their accomplishments will allow them to attract other well-qualified, high-performing Board Members.

Ideal candidates will have the following qualifications:



- Extensive professional experience in the Internet and/or development communities with significant executive leadership accomplishments in business, government, philanthropy, or the non-profit sector
- A commitment to and understanding of the Foundation's beneficiaries, preferably based on experience
- Outstanding diplomatic skills and a natural ability for cultivating relationships and persuading, convening, facilitating, and building consensus among diverse individuals
- Personal qualities of integrity, credibility, and a passion for the goals of the Foundation

Service on the APNIC Foundation Board of Directors is without remuneration, except for administrative support, travel, and accommodation costs in relation to Board Members' duties.

**Nominations:**

A nominee or volunteer for the Foundation Board should submit a formal Expression of Interest which includes the following information:

- Complete personal details
- Statement of interest in serving on the Foundation Board
- Fundraising activities, commitments or targets
- Professional and/or personal referees (including nominator)

**Meetings and time commitment:**

- The board of directors typically meets face-face once per year, typically for up to 1 day at a mutually agreeable location.
- Committees of the board meet 1 time per year, in the same location as the board of directors.
- Board members are also asked to attend a minimum of two special events per year related to fund raising for the Foundation

**The Advisory Council of the APNIC Foundation**

The APNIC Foundation will also have an Advisory Council as defined in its Articles of Association. The main role of the Council will be to provide non-binding, strategic advice and guidance to the Foundation Board and management. Unlike the Board, the Council will not have the authority to vote on corporate matters or bear legal or fiduciary responsibilities. Its main functions will include:

- 1) The identification and cultivation of important strategic relationships in such areas as funding and technical expertise
- 2) The promotion of the Foundation and its work
- 3) To support effective engagement by the Foundation with the government, corporate and development sectors
- 4) Provide an in-depth understanding of the Internet's development in the Asia Pacific from different perspectives

- 5) Provide counsel on strategic issues being considered by the Board of Directors and management

The formation of the Council will follow the formation of the Board.

DRAFT

APNIC **42**

EC meeting

# APNIC Foundation Update

The Board Selection, appointment and renewal



**COLOMBO, SRI LANKA**

28 September - 5 October 2016

#apnic42

# Foundation update - Incorporation

CR  
No. 2432679  
公司註冊處  
COMPANIES REGISTRY

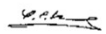
公司註冊證明書  
CERTIFICATE OF INCORPORATION  
\*\*\*

本人謹此證明  
I hereby certify that

APNIC FOUNDATION LIMITED  
亞太網絡信息中心基金會有限公司

於本月八日經香港法例第622章《公司條例》  
is this day incorporated in Hong Kong under the Companies Ordinance  
完全符合該法例之規定，且該公司是一間  
(Chapter 622 of the Laws of Hong Kong), and that this company is  
有限公司。  
a limited company.

本證明書於二〇一六年九月二十八日發出。  
Issued on 28 September 2016.

  
Ms. Adrienne CLERGE  
Registrar of Companies  
Hong Kong Special Administrative Region

注 Note:  
公司名稱獲公司註冊處註冊，並不表示獲授予該公司名稱或其任何部分之商標權或任何  
其他知識產權。  
Registration of a company name with the Companies Registry does not confer any trade mark rights  
or any other intellectual property rights in respect of the company name or any part thereof.

# Foundation update

- Incorporation documents submitted (29/8)
- Bank account processes underway with Standard Chartered Hong Kong
- Company Secretary for Foundation appointed (PwC)

Next steps:

- Charitable registration and Board processes
- Fund raising

# 1) Board selection process

## 1.1) PRE EC MEETING

- EC members are invited to submit names for possible selection to the Foundation Board (using the nomination form provided and responding to the criteria of the position description).

## 1.2) DURING EC MEETING

- EC discusses nomination list and agree on a short list of 2-3 candidates for possible appointment. Voting can be considered if needed.

# 1) Board selection process cont.

## 1.3) POST EC MEETING

- Selected candidates are contacted and asked to formally submit an expression of interest (to avoid misunderstandings over possible rejections, it is recommended that candidates are contacted one-by-one).
- EC considers candidate's formal application and approves for nomination to the Foundation Board.
- Foundation Board adopts to include EC nominated candidate(s) on the Foundation Board.

## 2) Board development strategy

The long term goal is to achieve a board that:

- Has the personal and professional interest and resources to support the Foundation's activities (to a substantial level) and are willing to make a commitment to do so.
- Has a network of relationships in the Asia Pacific (and beyond) that it is willing to contact to seek support for the Foundation's activities.
- Has the knowledge and experience to help develop the Foundation and the Internet in the Asia Pacific.



## 3) Board development stages

**3.1) Initial:** Minimum number of board members (2) in place to ensure efficiency and flexibility during setting up (6-12 months)

**3.2) Interim:** 6 to 8 members from the APNIC community who help find the financial resources the Foundation will need to get started. They will also prepare the Foundation for its established board (1-2 years)

**3.3) Established:** Eight members from the Asia Pacific region who fully satisfy the listed criteria (in place by the third year).

# Board members

- Set corporate and strategic policies and goals and delegate authority to the CEO to implement them.
- Trustees of the foundation who approve an annual budget that ensures it can meet its financial needs.
- Monitors the overall financial health of the foundation by reviewing the annual reports of an auditor.

# Board members cont.

An essential part of a board member's role in ensuring the financial health of the foundation is to actively contribute and support the foundation's fund raising efforts. This includes:

- Providing regular advice on fund raising strategy;
- Identifying possible sources of funding;
- Introducing and encouraging potential investors to support the foundation and its work

# Some important issues

- **Strategy, governance and resources:** That the Board focuses on strategy, governance and fund raising, particularly philanthropic fund raising
- **Diversity but not quotas:** That the board focuses on maintaining diversity but will not require quotas
- **Continuity and renewal:** That the Board has mechanisms in place that allow for continuity (up to 2-3 terms) and renewal (2 year terms)

# Funding

JICA “Project on capacity building for information security”

- USD20,000 to develop on-line training materials

World Bank USD31.5 million grant for Telecommunications Sector Reform in Myanmar

- Supporting APNIC training in “Routing and IPv6”.

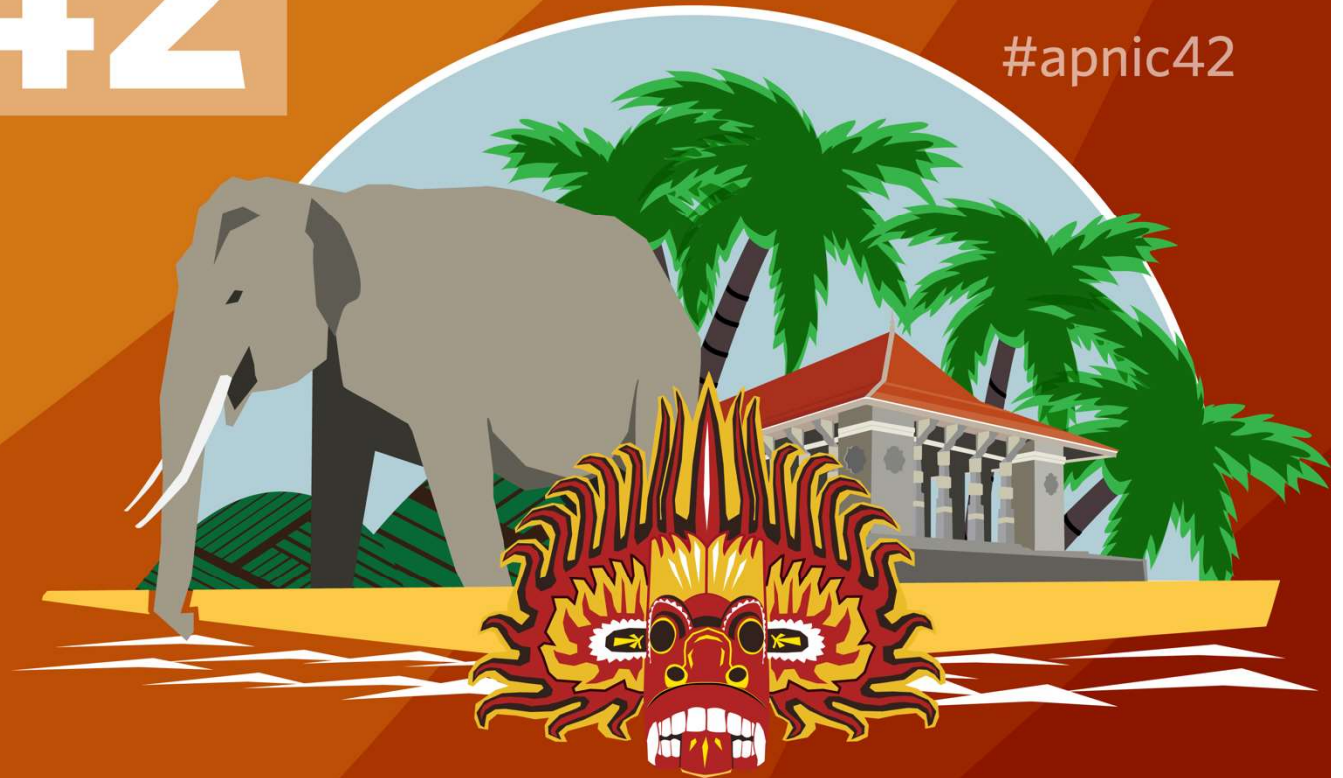
China Internet Development Foundation

- Received a USD35 million philanthropic grant (from a Hong Kong jeweller) for cybersecurity)

# Questions?

# APNIC 42

#apnic42



**COLOMBO, SRI LANKA**

28 September - 5 October 2016

Agenda Item 13

NRO Number Council election procedures



APNIC **42**

# 2016 NRO Number Council Election



**COLOMBO, SRI LANKA**  
28 September - 5 October 2016

#apnic42

# 2016 NRO NC Election

- One vacant seat on NRO Number Council
  - Two-year term from 1 January 2017 to 31 December 2018
- Call for nominations: 5 July to 1 September 2016
- Online and on-site voting available
  - <https://conference.apnic.net/42/elections>

# Online Voting via MyAPNIC

- For APNIC members only
- Voting period
  - Started: Monday, 19 September 2016
  - Ended: 9:00 (UTC +5:30) Monday, 3 October 2016

# On-site Voting

- Each registered APNIC 42 attendee is entitled to one vote, as an individual
- Voting period
  - Starts: As announced by the Election Chair
  - Ends: 14:00 (UTC +5:30) Wednesday, 5 October 2016
- Ballot Box
  - The ballot box is placed at the Voting desk after the Election Chair announces the opening of on-site voting

# Voting Ballot Paper

# Declaration of Results

- Election results will be announced at 15:00 (UTC +5:30) today, 5 October 2016
- The Election Chair will also disclose:
  - Notice of any disputes and resolutions
  - Disclosure of any communication from the Election Scrutineers regarding any anomaly or issue

# Declaration of Results

APNIC 42

2016 NRO Number Council Election – 5 October 2016

Declaration of results

|  |  |
|--|--|
| Total valid paper ballots  |  |
| Total invalid paper ballots  |  |
| <b>Total paper ballots counted</b>                                       |  |
| Total on-site votes  |  |
| Total online votes   |  |
| <b>Total votes counted</b>   |  |
| Total vote counts for each nominee<br>(combined online and onsite votes) |  |
|  |  |
|  |  |
| <b>Total votes counted</b>   |  |

Signature of tellers: \_\_\_\_\_

# 2016 NRO NC Election

- Rohana Palliyaguru, Sri Lanka CERT|CC as Election Chair (appointed by EC)
- George Kuo and Connie Chan as Election Officers (appointed by EC)
- Pubudu Jayasinghe and Tuan Nguyen as Election Tellers (appointed by EC)
- xxxx and xxxx as Election Scrutineers (appointed by Election Chair)



# Notice of Dispute

- Any complaint regarding the conduct of the election must be lodged in writing with the Election Chair at the Conference and be lodged no later than one hour before the scheduled Declaration of the Election
- Notices may only be lodged by Nominees or Members through their authorized voting representatives
- The Election Chair shall resolve the dispute at his or her discretion

APNIC **42**

# Nominees for 2016 NRO NC Election

Election Chair



**COLOMBO, SRI LANKA**  
28 September - 5 October 2016

#apnic42

# Nominees for 2016 NRO NC Election

- Brajesh Jain
- Komal Batool
- Henri Kasyfi Soemartono

# On-site Voting

- Opening of the ballot box
- The ballot box will be moved to the Voting desk after the opening of on-site voting is announced
- The ballot box is supervised by the Election Tellers at all times
- Voting period
  - Starts: Now
  - Ends: 14:00 (UTC +5:30) Wednesday, 5 October 2016

# Agenda Item 15

## 2017 budget outlook

# Budget Outlook 2017

**APNIC**



## Baseline Forecast

### Assumptions:

- Membership growth trend continues in a linear fashion
- No change to APNIC Fee schedule
- Staffing levels based on expected Dec 2016 Headcount (No additions)
- No significant changes to APNIC services
- No changes to APNIC's facilities

### To be considered:

- Impacts of new Initiatives arising from Survey results or 2017 Priority Plan
- Impacts of priorities arising from the Risk register
- Detailed bottom up budget will be available Mid- November

**APNIC**



CAPEX expected to be close to budget by the end of 2015

Budget allocated on a flat rate over 12 months, actuals do not occur in the same pattern.

## Baseline Forecast

| REVENUE and EXPENSES (AUD)         | Forecast 2016    | Forecast 2017    | Change         | Forecast Variation to Budget % |
|------------------------------------|------------------|------------------|----------------|--------------------------------|
| Total Revenue                      | 20,265,379       | 21,475,348       | 1,209,969      | 6%                             |
| Total Expenses                     | 17,916,852       | 19,022,917       | 1,106,065      | 6%                             |
| <b>OPERATING SURPLUS/(DEFICIT)</b> | <b>2,348,527</b> | <b>2,452,431</b> | <b>103,904</b> | <b>4%</b>                      |

**APNIC**



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CAPEX expected to be close to budget by the end of 2015

Budget allocated on a flat rate over 12 months, actuals do not occur in the same pattern.



## Revenue Forecast

| REVENUE (AUD)        | Forecast 2016     | Forecast 2017     | Change           | Forecast Variation to Budget % |
|----------------------|-------------------|-------------------|------------------|--------------------------------|
| Investment income    | 881,714           | 915,200           | 33,486           | 4%                             |
| Membership fees      | 18,320,670        | 19,490,936        | 1,170,266        | 6%                             |
| Non-members fees     | 242,417           | 246,170           | 3,753            | 2%                             |
| Reactivation fees    | 43,536            | 46,000            | 2,464            | 6%                             |
| Sign-Up fees         | 486,750           | 486,750           | 0                | 0%                             |
| Transfer fees        | 125,991           | 125,991           | 0                | 0%                             |
| Sundry income        | 164,301           | 164,301           | 0                | 0%                             |
| <b>TOTAL REVENUE</b> | <b>20,265,379</b> | <b>21,475,348</b> | <b>1,209,969</b> | <b>6%</b>                      |

**APNIC**



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CAPEX expected to be close to budget by the end of 2015

Budget allocated on a flat rate over 12 months, actuals do not occur in the same pattern.

## Expense Forecast

| EXPENSES (AUD)                      | Forecast 2016     | Forecast 2017     | Change           | Forecast Variation to Budget % |
|-------------------------------------|-------------------|-------------------|------------------|--------------------------------|
| Bank charges                        | 169,014           | 170,000           | 986              | 1%                             |
| Communication expenses              | 541,741           | 560,702           | 18,961           | 3%                             |
| Computer expenses                   | 532,138           | 550,763           | 18,625           | 3%                             |
| Depreciation expense                | 788,454           | 816,050           | 27,596           | 3%                             |
| Doubtful debt expenses              | 26,234            | 27,152            | 918              | 3%                             |
| ICANN contract fee                  | 254,430           | 254,430           | 0                | 0%                             |
| Insurance expense                   | 128,373           | 132,866           | 4,493            | 3%                             |
| Meeting and training expenses       | 426,146           | 441,061           | 14,915           | 4%                             |
| Membership fees                     | 54,749            | 56,665            | 1,916            | 3%                             |
| Office operating expenses           | 317,269           | 328,373           | 11,104           | 3%                             |
| Postage & delivery                  | 43,377            | 44,895            | 1,518            | 4%                             |
| Printing & photocopy                | 39,075            | 40,443            | 1,368            | 4%                             |
| Professional fees                   | 1,482,928         | 1,425,000         | -57,928          | -4%                            |
| Recruitment expense                 | 99,121            | 95,000            | -4,121           | -4%                            |
| Salaries and personnel expenses     | 10,231,618        | 11,254,780        | 1,023,162        | 10%                            |
| Sponsorship and Publicity expenses  | 625,988           | 647,898           | 21,910           | 3%                             |
| Staff training/ Conference expenses | 161,197           | 166,839           | 5,642            | 3%                             |
| Translation expenses                | 10,000            | 10,000            | 0                | 0%                             |
| Travel expenses                     | 1,985,000         | 2,000,000         | 15,000           | 1%                             |
| <b>TOTAL EXPENSES</b>               | <b>17,916,852</b> | <b>19,022,917</b> | <b>1,106,065</b> | <b>6%</b>                      |

**APNIC**



5

CAPEX expected to be close to budget by the end of 2015

Budget allocated on a flat rate over 12 months, actuals do not occur in the same pattern.

## Membership Growth

| Membership                      | 2009         | 2010         | 2011         | 2012         | 2013         | 2014         | 2015         | YTD June 2016 | Forecast 2016 |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|
| Extra Large                     | 13           | 16           | 21           | 20           | 20           | 21           | 22           | 22            | 22            |
| Very Large                      | 31           | 33           | 41           | 45           | 43           | 40           | 44           | 45            | 45            |
| Large                           | 106          | 141          | 145          | 144          | 147          | 142          | 137          | 136           | 136           |
| Medium                          | 276          | 324          | 378          | 402          | 392          | 402          | 431          | 432           | 432           |
| Small                           | 823          | 867          | 970          | 1,114        | 1,198        | 1,388        | 2,165        | 2,466         | 2,685         |
| Very Small                      | 472          | 637          | 817          | 1,021        | 1,294        | 1,701        | 2,336        | 2,454         | 2,540         |
| Associate                       | 449          | 503          | 575          | 788          | 957          | 924          | 133          | 106           | 106           |
| <b>Total</b>                    | <b>2,170</b> | <b>2,521</b> | <b>2,947</b> | <b>3,534</b> | <b>4,051</b> | <b>4,618</b> | <b>5,268</b> | <b>5,661</b>  | <b>5,966</b>  |
| New                             | 478          | 507          | 615          | 832          | 813          | 805          | 968          | 544           | 1,000         |
| Close                           | 163          | 156          | 189          | 245          | 296          | 250          | 318          | 151           | 302           |
| <b>Net Gain</b>                 | <b>315</b>   | <b>351</b>   | <b>426</b>   | <b>587</b>   | <b>517</b>   | <b>555</b>   | <b>650</b>   | <b>393</b>    | <b>698</b>    |
| <b>Average Monthly Net Gain</b> | <b>26</b>    | <b>29</b>    | <b>36</b>    | <b>49</b>    | <b>43</b>    | <b>46</b>    | <b>54</b>    | <b>33</b>     | <b>58</b>     |

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Forecast to achieve 5265 members by the end of 2015

Strong growth...forecasting 931 new members, 273 closed accounts in 2015, net growth of 658

# Membership Growth

|   | Jan                 | Feb                 | Mar                 | Apr                 | May                 | Jun                 | Jul                 | Aug                 | Sep                 | Oct                 | Nov                 | Dec                 | 2017                |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Fees from Members at 16/09/2016 (ARMS)</b> | \$1,544,755         | \$1,547,830         | \$1,549,821         | \$1,550,846         | \$1,552,510         | \$1,553,331         | \$1,556,304         | \$1,557,999         | \$1,559,715         | \$1,559,715         | \$1,559,715         | \$1,559,715         | <b>\$18,652,056</b> |
| <b>+ New Members 2017</b>                     | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 90                  | 1,080               |
| <b>Average Fee 2016 \$ 1,720</b>              | \$ 58,050           | \$ 70,950           | \$ 83,850           | \$ 96,750           | \$ 109,650          | \$ 122,550          | \$ 135,450          | \$ 148,350          | \$ 161,250          | \$ 174,150          | \$ 187,050          | \$ 199,950          | 1,548,000           |
| <b>- Closures 2017</b>                        | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 32                  | 384                 |
| <b>Average Fee 2016 \$ 2,216</b>              | \$ 26,592           | \$ 32,501           | \$ 38,411           | \$ 44,320           | \$ 50,229           | \$ 56,139           | \$ 62,048           | \$ 67,957           | \$ 73,867           | \$ 79,776           | \$ 85,685           | \$ 91,595           | 709,120             |
| <b>Membership Total</b>                       | <b>\$ 1,578,213</b> | <b>\$ 1,586,278</b> | <b>\$ 1,595,060</b> | <b>\$ 1,603,276</b> | <b>\$ 1,611,931</b> | <b>\$ 1,619,742</b> | <b>\$ 1,629,706</b> | <b>\$ 1,638,391</b> | <b>\$ 1,647,098</b> | <b>\$ 1,654,089</b> | <b>\$ 1,661,080</b> | <b>\$ 1,668,070</b> | <b>\$19,490,936</b> |
| <b>Net Member Growth</b>                      | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 58                  | 696                 |

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Forecast to achieve 5265 members by the end of 2015

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## Expense Forecast

|  | Actual 2015   | F'Cast 2016   | F'Cast 2017   |
|--|---------------|---------------|---------------|
| <b>REVENUE</b>                           | \$ 18,774,435 | \$ 20,265,379 | \$ 21,475,348 |
| Growth %                                 | 0.81%         | 7.94%         | 5.97%         |
| <b>EXPENSES</b>                          | \$ 16,818,270 | \$ 17,916,852 | \$ 19,022,917 |
| Growth %                                 | -1.45%        | 6.53%         | 6.17%         |
| Daily Expenses                           | \$ 45,952     | \$ 48,953     | \$ 51,975     |
| Monthly                                  | \$ 1,401,523  | \$ 1,493,071  | \$ 1,585,243  |
| <b>Actual/Forecast Surplus/(Deficit)</b> | \$ 1,956,165  | \$ 2,348,527  | \$ 2,452,431  |
| <b>Actual/Forecast Equity</b>            | \$ 23,319,460 | \$ 25,667,987 | \$ 28,120,418 |
| <b>RATIO(MONTHS OF OPERATING COSTS)</b>  | 16.64         | 17.19         | 17.74         |
| <b>TARGET RATIO</b>                      | 18.00         | 18.00         | 18.00         |

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CAPEX expected to be close to budget by the end of 2015

Budget allocated on a flat rate over 12 months, actuals do not occur in the same pattern.

## For consideration:

- As at 23/09/2016
  - 45.36% of 103/8 remaining
  - Equates to 7,431 /22's.
  - Since June depleting by 1% per month.

**Questions?**

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