

APNIC EC Meeting Minutes

Face-to-Face meeting, Singapore

Sunday, 11 September 2022, 09:04 – 17:56 (UTC +8)

Meeting started at 09:04 (UTC +8), Sunday, 11 September 2022

Present

Gaurab Raj Upadhaya, EC Chair (remote)
Kenny Huang, Treasurer
Vincent Achie Atienza, Secretary
Kam Sze Yeung, EC member
Sumon Ahmed Sabir, EC member
Yoshinobu Matsuzaki, EC member (remote)
Feng Leng, EC member (remote)
Paul Wilson, Director General

Connie Chan, Strategic Executive Assistant (minutes)
Craig Ng, General Counsel
Louise Tromp, People and Productivity Director
Nathan Harvey, Finance Director
Jeremy Harrison, Senior Legal Counsel
Tony Smith, Communications Director

Apologies

Nil

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. EC Chair update
7. WH&S update
8. Financial reports
9. HR report
10. Secretariat report
11. APNIC Survey update
12. APNIC fee schedule update
13. APIDT update
14. APNIC 54 election procedures
15. APNIC Foundation update
16. Invitation to past EC members to attend EC meetings as observers
17. Governance structure
18. NRO NC appointment
19. Risk register
20. Any other business
21. Closing the meeting
22. Next meeting

Minutes

1. Opening of meeting and declaration of quorum

The Chair of the Executive Council (EC Chair) welcomed all attendees to the meeting. The EC Chair declared the meeting open at 09:04 (UTC +8) on Sunday, 11 September 2022, and noted that a quorum was present.

The EC Chair has designated Vincent Achie Atienza as the Chair of this meeting (Meeting Chair) and handed over the chairing of the meeting to him.

2. Agenda bashing

The Meeting Chair called for comments on the agenda.

3. Declaration of interests

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

All other EC members present confirmed their entries in the Register of Interests were complete and correct.

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

The following circular resolutions (that 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.

Resolution 2022-12: The EC resolved to adopt the minutes of the EC meeting of 26-27 May 2022.

5. Matters arising from the last meeting

The following matters from the previous meetings were completed:

Action item 2022-11: Duncan Macintosh to seek the advice of the Foundation Board on potential new Board members. (Completed - See agenda item 15)

Action item 2022-12: The Director General to contact Anju Mangal to confirm her willingness to serve as Election Chair at elections which will be held during APNIC 54. (Completed - See agenda item 14)

Action item 2022-14: Duncan Macintosh to invite the Foundation Board to the APNIC 54 Closing Social on 15 September 2022, and the joint board dinner on 16 September 2022. (Completed)

The following matters from the previous meetings were pending:

[Confidential information redacted]

Action item 2022-07: The Secretariat to liaise with Credit Suisse to conduct a review of APNIC's investment risk assessment. (See agenda item 8)

Action item 2022-08: The Secretariat to proceed with the improvements and finalize the updated fee schedule before APNIC 54 for community consultation. (See agenda item 12)

Action item 2022-09: The Secretariat to put forward a proposal to revamp the Service Partner program for the EC's consideration. (Pending – See agenda item 10 in Secretariat report)

Action item 2022-10: APNIC Legal to review the NIR agreement to incorporate RPKI provisions. (Pending – will report back at future meeting)

Action item 2022-13: APNIC Legal to develop a detailed proposal on the governance structure. (See agenda item 17)

6. EC Chair update

The EC Chair reported on his reply to the SIG policy mailing list for the NIR member voting rights.

He also noted that as international travel resumed, he encouraged the EC members to review the travel planner and consider the current cost of travel when considering attending events this year.

7. WH&S update

Kam Sze Yeung spoke to the Workplace Health and Safety quarterly update.

Louise Tromp noted that APNIC continued to follow Queensland government guidelines regarding COVID-19. She further confirmed that mental health and wellbeing remain a high priority as APNIC staff transition back into the physical workplace.

8. Financial reports

Nathan Harvey spoke to the financial report presentation (attached).

The EC considered the monthly financial report and the investment report for July 2022 (attached). The EC noted that APNIC is solvent and able to meet all current debts.

The July financial report highlights a year-to-date operating surplus of AUD 1.48M, with full year forecast revenue tracking at 7% under budget and full year forecast expenses tracking at 5% under budget. At the end of July 2022, APNIC had a total of 9,001 Members serving 53 economies.

Patrick Armitage from Credit Suisse joined the meeting for this agenda item.

Patrick Armitage spoke to the APNIC portfolio review presentation (attached).

Patrick Armitage then spoke to the risk profiling presentation. The risk profiling of APNIC's investment portfolio was last reviewed in 2018. There was a discussion on the current APNIC Yield profile metrics along with the metrics for the other four main profiles. The EC considered the impact of changing the risk profile of APNIC's investment

portfolio, and agreed to complete the risk tolerance survey before any changes to the asset allocation for APNIC's investment portfolio.

Regarding environmental, social, and governance (ESG) investing, the EC considered a wider ban than controversial weapons, and asked Credit Suisse to confirm the wording of the screens.

[Patrick Armitage left the meeting at 12:02 (UTC +8)]

Nathan Harvey spoke to financial outlook presentation for 2023 and beyond, including a review of the APNIC fee structure, and scenarios for fee structure adjustment.

It was suggested that to avoid conflict of interest, the EC should consider any discussion around fees from the perspective of their role as an EC member and the impact on APNIC's finances.

The EC discussed the fee structure scenarios at length, and agreed to pursue options for a bit factor adjustment in the fee calculation formula.

Meeting adjourned at 11:12 (UTC +10), Sunday, 11 September 2022

Meeting resumed at 11:30 (UTC +10), Sunday, 11 September 2022

9. HR report

Louise Tromp spoke to the HR report presentation.

10. Secretariat Report

The Director General spoke to the Secretariat Report (attached).

The EC discussed several items in the Secretariat Report at length.

[Louise Tromp left the meeting at 12:47 (UTC +8)]

Meeting adjourned at 12:47 (UTC +8), Sunday, 11 September 2022

Meeting resumed at 13:30 (UTC +8), Sunday, 11 September 2022

11. APNIC Survey update

Brenda Mainland from Survey Matters joined the meeting for this agenda item.

Brenda Mainland spoke to the Survey report presentation (attached).

The EC noted the positive outcomes overall and discussed the key findings. It was noted the survey information would form an important part of the 2023 Activity Plan and Budget.

[Brenda Mainland left the meeting at 14:12 (UTC +8)]

12. APNIC fee schedule update

Karla Skarda joined the meeting for this agenda item.

Karla Skarda spoke to the APNIC fee schedule presentation.

[Confidential information redacted]

[Karla Skarda left the meeting at 14:40 (UTC +8)]

13. APIDT update

Richard Brown joined the meeting for this agenda item.

Richard Brown spoke to the APIDT update presentation (attached).

[Richard Brown left the meeting at 15:00 (UTC +8)]

14. APNIC 54 election procedures

Resolution 2022-13: The EC resolved to appoint Anju Mangal as the Election Chair for the NRO NC and the SIG Chairs elections.

Motion proposed by Sumon Ahmed Sabir; seconded by Kenny Huang. Passed unanimously.

15. APNIC Foundation update

Duncan Macintosh joined the meeting for this agenda item.

Duncan Macintosh spoke to the APNIC Foundation update presentation (attached).

The EC noted Edward Tian's resignation from the Board of Directors of APNIC Foundation Limited (Hong Kong). The EC thanked Edward Tian, for his contributions to the Foundation Board.

Resolution 2022-14: The EC resolved to express its sincere gratitude to Mr Edward Tian for his service as a founding member of the Board of Directors of APNIC Foundation Limited, and for his support in advancing the Foundation's mission. The EC wishes Mr Tian continued success in his endeavours, and passes this resolution as a token of the EC's respect and thanks.

Motion proposed by Vincent Achie Atienza; seconded by Kenny Huang. Passed unanimously.

[Duncan Macintosh left the meeting at 15:35 (UTC +8)]

Meeting adjourned at 15:35 (UTC +8), Sunday, 11 September 2022

Meeting resumed at 15:45 (UTC +8), Sunday, 11 September 2022

16. Invitation to Past EC Members to attend EC Meetings as Observers

Craig Ng spoke to a proposal that past EC Members be invited to attend EC Meetings as Observers.

Resolution 2022-15: The EC resolved to extend a standing invitation to any person who has recently retired from serving as an APNIC EC member for at least one full term, to attend future EC meetings for a [renewable] period of [one year] as a non-voting observer, provided that:

- **the EC confirms such invitation at the start of each calendar year, but without affecting the EC's power to revoke such invitation at any time; and**
- **the invitee agrees to enter into the applicable non-disclosure agreement related to APNIC EC business.**

Motion proposed by Paul Wilson; seconded by Vincent Achie Atienza. Passed unanimously.

Gaurab Raj Upadhaya abstained from voting.

Gaurab Raj Upadhaya joined the meeting at 15:54.

17. Governance structure

Jeremy Harrison spoke to the potential corporate structure, nominations review committee, enhanced due diligence and whistleblower policy.

Resolution 2022-16: Having considered the Whistleblower Policy, APNIC's obligations under law, and in the interests of promoting the highest standards of conduct and behaviour within the organization, the EC resolved:

- **to adopt the Whistleblower Policy;**
- **to appoint APNIC's Legal Team as the responsible managers of the Whistleblower Policy and to provide half-yearly updates to the EC on the use and effectiveness of the policy and the outcomes of any disclosures; and**
- **that the Executive Council has ultimate responsibility for the Whistleblower Policy.**

Motion proposed by Kam Sze Yeung; seconded by Kenny Huang. Passed unanimously.

18. NRO NC appointment

The EC discussed the appointment process of the NRO Number Council (NC) position, and agreed to extend Nicole Chan's term for a further term of one year.

Resolution 2022-17: The EC resolved to appoint Nicole Chan to the NRO Number Council/ASO Address Council for a one-year term from 1 January 2023 to 31 December 2023.

Motion proposed by Vincent Achie Atienza; seconded by Paul Wilson. Passed unanimously.

Kenny Huang abstained from voting.

19. Risk register

Nathan Harvey spoke to the risk register presentation.

The EC noted the risk management updates, and provided some comments on the current risk register.

20. Any other business

The Meeting Chair called for any other business.

a. APNIC 54 – hybrid conference arrangements

Tony Smith spoke to the APNIC 54 hybrid conference presentation (attached).

b. Secretariat report (continued)

[Confidential information redacted]

The EC considered the draft AMM agenda for APNIC 54 (attached).

Resolution 2022-18: The EC resolved to approve the draft agenda (as tabled at this meeting) for the APNIC Members Meeting of 15 September 2022.

Motion proposed by Vincent Achie Atienza; seconded by Kenny Huang. Passed unanimously.

21. Closing the meeting

Vincent Achie Atienza handed the Chair duties back to the EC Chair. From this point, Gaurab Raj Upadhaya chaired the meeting.

The Chair spoke to the meeting chair guidelines previously developed (attached), and suggested the EC considering a formal motion to adopt the guidelines at the next EC meeting.

The Chair encouraged the EC members to read the full Survey report.

The Chair thanked everyone for their contribution to the meeting.

22. Next meeting

The next EC meeting is tentatively scheduled for 5 to 7 December 2022 in Kathmandu.

Meeting closed at 17:56 (UTC +8), Sunday, 11 September 2022

Attachments:

- A. Register of interest**
- B. [Confidential information redacted]**
- C. July 2022 financial report presentation**
- D. July 2022 monthly financial report**
- E. July 2022 Credit Suisse investment report**
- F. July 2022 Credit Suisse commentary**
- G. APNIC portfolio review presentation**
- H. Investment risk profiling presentation**
- I. [Confidential information redacted]**
- J. [Confidential information redacted]**
- K. Secretariat report and presentation**
- L. Survey report and presentation**
- M. [Confidential information redacted]**
- N. APIDT update presentation**
- O. APNIC Foundation update presentation**
- P. [Confidential information redacted]**
- Q. [Confidential information redacted]**
- R. APNIC 54 hybrid conference presentation**
- S. [Confidential information redacted]**
- T. AMM agenda for APNIC 54**
- U. Meeting chair guidelines**

Agenda Item 3

Declaration of Interests

APNIC 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 **11 September 2022**.

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

- Employee of Amazon as Head of Global Video Delivery, Prime Video
- Founder of the Nepal Research and Education Network (NREN)
- Chairman of Nepal Internet Exchange (NPIX)
- Standing member of the Program Committee of SANOG
- Board Member of Internet Foundation Nepal

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

- Member of the HKNOG Program Committee
- Employee of Akamai Technologies, Inc
- Member of the Working Group of Peering Asia
- Member of the TWNOG Multi-stakeholder Steering Group (MSG)
- Member of the SGNORG Organising Committee

Kenny Huang declared that he currently holds the following positions:

- Managing Director and CEO of TWNIC
- Member of the Advisory Council of DotAsia Organization
- Chair of NIIEPA
- Chair of ICANN ccPDP4 WG
- Co-Chair of ICANN CGP
- Board of Director of TWIA
- Board of Director of TWIGF

Yoshinobu Matsuzaki declared that he currently holds the following positions:

- Employee of Internet Initiative Japan Inc. (IIJ) as a Senior Engineer
- Board of Director of JPNIC
- Board of Director of APNOG/APIA
- Member of JANOG Committee
- Technical Advisor of JPCERT/CC
- Contact person at IIJ Europe (RIPE member) for RIPE
- TAC (Technical Advisory Council) of Team Cymru, Inc.

Feng Leng declared that he currently holds the following position:

- Employee of CNNIC as Director of Operation Management Department

Vincent Achie Atienza declared that he currently holds the following positions:

- Employee of Globe Telecom (Peering, Interconnection & Strategy - IP Ecosystem)

- Chair of the Philippine Network Operators Group (PhNOG)
- Member, Board of Trustee, Internet Society Philippines (ISOC-Ph)
- Member of Ph Technical working group for IPv6, DNSSEC, RPKI
- Member (Ph Representative) - APIX - Asia Pacific Internet Exchange Association)
- Member/Evangelist - Philippine Open Internet eXchange (PhOpenIX)
- Member of the Program Committee of APRICOT
- Program Committee Member - Asia Peering Forum (Equinix) 2022
- Program Committee co-initiator, ISOC-PhNOG initiatives 2022
- ISIF Selection Committee Member

Sumon Ahmed Sabir declared that he currently holds the following positions:

- CTO, Fiber@Home Limited
- Technical Advisor, Fiber@Global Limited
- Advisor, Felicity IDC Limited
- Sponsor of BDCOM Online Limited
- Member, Board of Trustee, BDIX
- Member, Board of Trustee, BDNOG
- Member, Corecom, SANOG
- Member, Board of Trustee, ISOC, Bangladesh, Dhaka Chapter

Paul Wilson declared that he currently holds the following position:

- Director of APIDTT Pty Ltd (trustee for the Asia Pacific Internet Development Trust)
- Director of APIDT Infrastructure Pty Ltd

Agenda Item 8

Financial reports

Monthly Financial Report

(in AUD)

July 2022

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1 Executive Summary

For the period ended July 2022, APNIC’s year to date operating surplus is \$1,480,461. APNIC holds net assets of \$36,841,319 which is a 5% decrease year-to-date.

APNIC forecasts a full year operating deficit of \$1,307,479 vs. budgeted operating deficit of \$801,496. Figure 1: Original Budget vs Forecast shows the key drivers to the variance between budget and forecast performance.

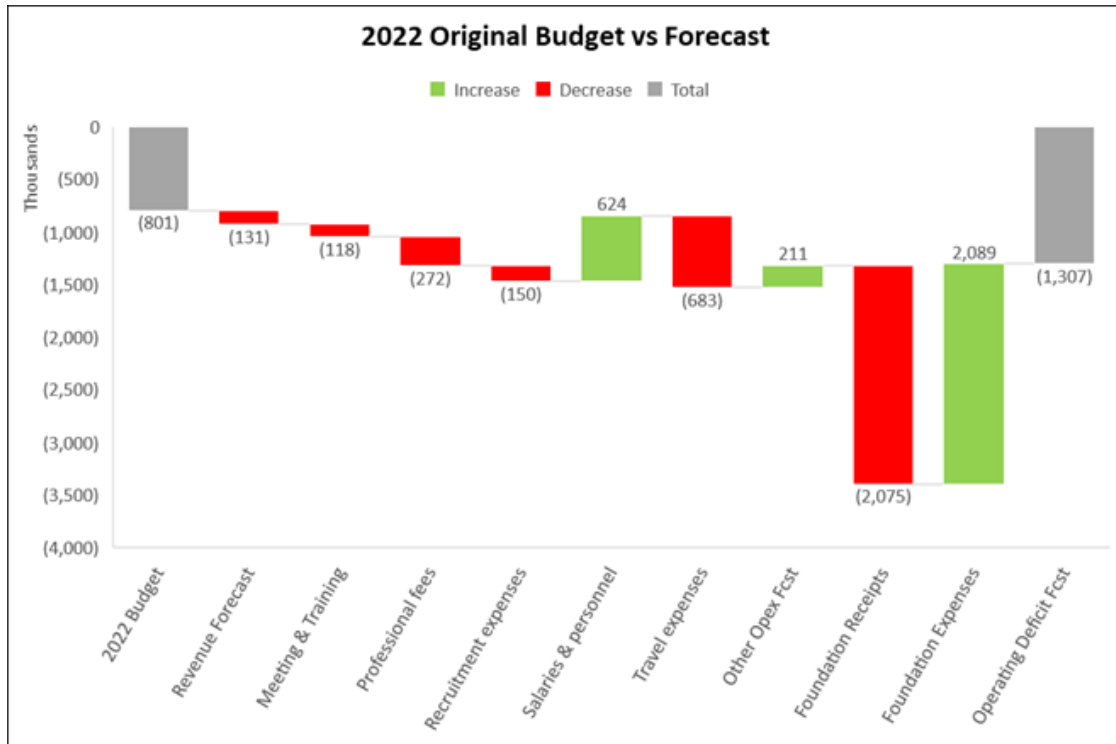


Figure 1: Original Budget vs Forecast

2 Statement of Financial Position

The Statement of Financial Position compares APNIC's assets, liabilities and equity at the end of July 2022 against the 2021 year end balances.

Amount (AUD)	As at Jul 2022	Year End 2021	% Change
CURRENT ASSETS			
Cash/ Term Deposits	10,746,875	11,234,947	-4%
Receivables	3,461,578	1,166,701	197%
Others	1,374,005	977,210	41%
TOTAL CURRENT ASSETS	15,582,458	13,378,858	16%
NON-CURRENT ASSETS			
Other Financial Assets	33,469,172	36,728,127	-9%
Property, plant and equipment	6,646,917	6,726,989	-1%
Deferred Tax Assets	321,557	321,557	0%
TOTAL NON-CURRENT ASSETS	40,437,646	43,776,672	-8%
TOTAL ASSETS	56,020,104	57,155,530	-2%
CURRENT LIABILITIES			
Payables	1,304,193	1,535,635	-15%
Provisions	2,769,757	2,700,030	3%
Unearned Revenue	13,223,879	12,243,099	8%
TOTAL CURRENT LIABILITES	17,297,828	16,478,765	5%
NON - CURRENT LIABILITIES			
Deferred Tax Liabilities	1,447,853	1,447,853	0%
Total Provisions	433,104	383,353	13%
TOTAL NON-CURRENT LIABILITIES	1,880,957	1,831,206	3%
TOAL LIABILITIES	19,178,785	18,309,971	5%
NET ASSETS	36,841,319	38,845,560	-5%
Equity			
Share Capital	1	1	0%
Retained earnings	38,845,559	34,176,882	14%
Net (Deficit)/ Surplus	-2,004,241	4,668,677	-143%
TOTAL EQUITY	36,841,319	38,845,560	-5%

Table 1. Statement of Financial Position

The Statement of Financial Position (Table 1)

Equity has decreased by 5% or \$2,004,241 since December 2021. Key drivers of change in the financial position include:

- \$488,072 reduction in cash due to payment of suppliers and is reflected in a reduction in trade payables.
- \$2,294,877 increase in receivables due to NIR renewals invoiced in July 2022 but not yet due for collection, expenses paid on behalf of the NRO to be re-imbursed and Foundation project cost recharge increase.
- \$396,795 increase in other receivables attributed to increase in prepayments and deposits paid for APNIC 54 event.

- \$3,258,955 decrease in other financial assets due to the decline in value of investment portfolio.
- \$231,443 decrease in payables due to payment to staff and suppliers; and attributed to the reduction in cash.
- \$980,780 increase in unearned revenue due to July invoicing of various extra large NIR members accumulated in the pool; ongoing recognition of membership revenues is in line with APNIC accounting policies.

3 Statement of Income

The Statement of Income compares APNIC's year-to-date July 2022 revenue and expenditure against the comparative period for 2021. It also compares the full year budget against the full year forecast for 2022.

Amount (AUD)	YTD Actual Jul 2022	YTD Actual Jul 2021	Variance %	Budget 2022	Forecast 2022	Budget Variance %
Membership fees	14,369,154	14,072,333	2%	24,799,617	24,721,796	-0%
Non-members fees	150,267	149,036	1%	263,209	262,369	-0%
Reactivation fees	11,600	10,500	10%	22,644	22,534	-0%
Sign-Up fees	153,000	170,250	-10%	315,985	271,536	-14%
Transfer fees	105,333	123,008	-14%	220,431	188,396	-15%
Sundry income	62,332	-52,890	-218%	172,200	307,547	79%
Foundation receipts	1,508,810	290,094	420%	6,362,600	4,287,715	-33%
Operating Revenue	16,360,496	14,762,331	11%	32,156,686	30,061,893	-7%
Investment income	349,732	491,769	-29%	806,229	694,937	-14%
TOTAL REVENUE	16,710,228	15,254,100	10%	32,962,915	30,756,830	-7%
Bank service fees	155,446	144,956	7%	261,000	261,000	-0%
Communication expenses	352,258	377,780	-7%	688,600	631,854	-8%
Computer expenses	996,098	805,128	24%	2,295,755	2,310,139	1%
Foundation funded project expenses	1,506,820	0	0%	6,362,600	4,273,826	-33%
Depreciation expenses	366,911	387,684	-5%	839,869	669,452	-20%
Doubtful debt expenses	-942	-698	35%	20,000	20,000	0%
ICANN contract fees	135,195	115,217	17%	225,600	231,762	3%
Insurance expenses	153,042	138,922	10%	231,600	249,545	8%
Meeting & training expenses	22,887	19,746	16%	553,500	671,821	21%
Membership fees expenses	43,239	33,598	29%	81,010	82,413	2%
Office operating expenses	233,883	189,375	24%	455,640	445,343	-2%
Postage & delivery expenses	4,057	10,331	-61%	48,000	39,000	-19%
Printing & photocopy expenses	13,476	13,301	1%	29,000	29,000	-0%
Professional fees	1,001,947	1,163,079	-14%	1,824,480	2,096,037	15%
Recruitment expenses	369,123	166,166	122%	306,000	456,000	49%
Salaries & personnel expenses	8,890,326	8,205,817	8%	17,577,277	16,953,448	-4%
Sponsorship & publicity expenses	171,648	123,074	39%	553,780	589,668	6%
Staff training expenses	134,246	79,295	69%	314,000	274,000	-13%
Translation expenses	15,416	-	0%	30,000	30,000	0%
Travel expenses	664,692	40,845	1527%	1,066,700	1,750,000	64%
TOTAL EXPENSES	15,229,767	12,013,616	27%	33,764,411	32,064,309	-5%
Operating Surplus/ (Deficit)	1,480,461	3,240,484	-54%	-801,496	-1,307,479	63%
Fair value (loss)/ gain on financial assets	-3,484,702	1,185,223	-394%	0	-3,484,702	0%
Surplus/ (Deficit) Before Tax	-2,004,241	4,425,708	-145%	-801,496	-4,792,181	498%

Table 2. Statement of Income

The Statement of Income (Table 2)

Year to date, APNIC has delivered an operating surplus of \$1,480,461 and a net deficit after fair value loss on financial assets of \$2,004,241.

The full year forecast operating deficit is \$1,307,479 vs an original budget operating deficit of \$801,496.

Membership revenue: Operating Revenue (excluding Foundation projects) is forecast to be \$155,255 below budget at the end of 2022.

- Membership fees are forecast to be below full year budget by \$77,821.
- Sign-up fees are forecast to be below full year budget by \$44,449.
- Year-to-date net membership growth (new & re-activated members less closures) is 2.66% for 2022 vs 2.88% same time last year (See Figure 2: Net Membership Growth YTD).
- Year-to-date new member growth is 425 vs budget of 469. Year-to-date account closures are 197 vs budget of 182.
- Year-to-date average fees for new members is \$1,286, vs budget of \$1,435. The average annual fee for closed accounts is \$1,716, vs. budget of \$1,769.
- 37.9% of all new members are eligible for the LDC discount, vs. budget of 30%.

	2022 YTD	2021 YTD
New Members	425	427
Reactivated Members	5	11
Closure	-197	-198
Net Change	233	240
As at 1 Jan	8,768	8,341
Net Change	233	240
As at 31 Jul	9,001	8,581
Year to Date Growth %	2.66%	2.88%

Figure 2. Net Membership Growth YTD

Foundation receipts and expenses: Both Foundation project receipts and expenses are forecast to be \$2,088,774 below budget. Non-project related forecast receipts of \$13,889 give rise to a slightly higher forecast total receipts than the corresponding expenses.

For greater transparency, APNIC is now reporting Foundation receipts and Foundation expenses separately as 'Foundation receipts' (revenue) and 'Foundation funded project expenses' (expenses) in the Statement of Income. Previous accounting treatment was to offset the Foundation receipts and expenses within the Income Statement.

Major variances in Foundation receipts and expenses include:

- Delays in the recruitment and onboarding of trainers, retained community trainers and other project funded roles due to skill shortage will reduce the full year salary and wage expenses associated with project delivery.
- Reduction in APNIC project funding for IXP development due to the project expenses being directly funded by the APNIC Foundation and ISOC.
- Reduction in APNIC project funding for M-Root deployment manpower cost with direct funding from the APNIC Foundation. Local hosts absorption of data center operational cost,

hardware purchase and software development savings due to capacity limitation will result in reduction in spending of M-Root project.

- Delays in M-Root equipment delivery due to global chip shortage resulted in deferral of equipment spending.

Investment Income: Interest and portfolio investment income are forecast to be \$111,292 below budget.

- Portfolio investment income: actual investment income received for July was \$156,018 lower than the Credit Suisse forecast income report.

Sundry Income: Sundry income is forecast to be \$135,347 above budget due to increased conference sponsorship income.

Expenses: Operating expenses (excluding Foundation projects) are forecast to be \$388,672 more than budget at the end of 2022. Major variances include:

- **Meeting & training expenses:** The full year expense is forecast to exceed budget due to the absorption of unbudgeted expenses for APriGF-APSIG events in Singapore less savings from deferral of the budgeted secretariat conference to 2023 (\$118,321 increase to budget).
- **Professional fees:** The full year expense is forecast to exceed budget due to additional provisions for a maternity cover on agile and productivity coaching, higher than budgeted consultancy for five 9s' gap analysis and recognition of HRIS implementation cost as operating expenses in accordance with the latest International Financial Reporting Standards. Conversion of two permanent staff to contractors due to relocation further increases the forecast for professional fees but has been offset against salaries and personnel expenditure (\$271,557 increase to budget).
- **Recruitment expenses:** The full year expense is forecast to exceed budget due to unbudgeted overseas relocation costs (\$150,000 increase to budget).
- **Travel expenses:** The full year expense is forecast to exceed the original budget due to limited capacity, increasing demand and overall volatility of travel costs. Travel arrangements are being closely reviewed to optimize the benefit of hybrid and face-to-face meetings. Based on an assessment of current travel needs, the travel provision has been increased by \$683,300 from budget.

Fair Value Loss on Financial Assets: Year-to-date fair value of the investment portfolio has reduced by \$3,484,702.

Since inception in September 2013, the portfolio has returned 4.09% (after fees but before franking) against the benchmark (CPI + 2.5%) of 4.56%. The Credit Suisse investment report and commentary that accompany this financial report provide detailed analysis of the portfolio's performance over time.

APNIC does not budget for investment valuation changes due to market volatility. Therefore, the decline in market value of the portfolio has impacted the actual and full year forecast net deficit vs. original budget.

4 Capital Expenditure

The table below provides overview of current capital expenditure as of July 2022.

CAPITAL (AUD)	YTD Actual Jul 2022	YTD Actual Jul 2021	Variance %	Budget 2022	Forecast 2022	Budget Variance %
Equipment & Software	259,294	290,418	-11%	1,141,800	977,159	-14%
Office Furniture & Fittings	29,837	4,394	579%	327,500	327,500	0%
Total - Capital Expenditure	289,131	294,811	-2%	1,469,300	1,304,659	-13%

Table 3. Capital Expenditure

Capital Expenditure (Table 3)

- Year to date spending on equipment and software includes cyclical renewal of laptops, routers and servers, server purchase for lab research and minor capital enhancements to the office building.
- The latest International Financial Reporting Standards has directed that HRIS implementation costs are to be recognised as an operating expense instead of capital expenditure. The impact is a \$100,000 forecast reduction in equipment and software additions.

5 Activity Summary

5.1 Expenses

EXPENSES (AUD)	YTD Actual Jul 2022	YTD Budget Jul 2022	Variance \$	Variance %
Member services	1,418,121	1,637,932	-219,811	-13%
Membership products	909,672	1,014,365	-104,693	-10%
Membership reporting	368,673	379,576	-10,903	-3%
Total - Membership	2,696,465	3,031,873	-335,408	-11%
Registration services	418,241	416,133	2,108	1%
Registry products	1,338,108	1,468,686	-130,578	-9%
Policy development	271,885	228,836	43,049	19%
Total - Registry	2,028,234	2,113,655	-85,421	-4%
APNIC conferences	433,476	547,307	-113,830	-21%
Foundation support	0	118,512	-118,512	-100%
Community engagement	969,856	944,835	25,021	3%
Community participation	200,665	249,036	-48,371	-19%
APNIC academy	1,881,570	2,912,631	-1,031,060	-35%
Internet infrastructure support	301,212	1,422,607	-1,121,395	-79%
Total - Development	3,786,780	6,194,927	-2,408,147	-39%
Research and analysis	476,854	612,602	-135,747	-22%
Total - Information	1,233,975	1,398,534	-164,559	-12%
Internal technical infrastructure	1,768,911	2,260,145	-491,234	-22%
Finance and business services	1,741,596	1,603,812	137,784	9%
Employee experience	1,475,364	1,634,439	-159,075	-10%
Total - Capability	5,484,313	5,934,067	-449,754	-8%
Total - Expenses	15,229,767	18,673,056	-3,443,288	-18%

Table 4. Expenses by Pillars and Workstreams

Activity Summary (Table 4)

This summary includes the activity grouping into pillars and workstreams as outlined in the 2022 Activity Plan.

- Year-to-date July expenses for all Pillars are tracking behind budget.
- The Development Pillar is \$2,408,147 below budget due to
 - delays in recruiting and onboarding trainers, retained community trainers and other project funded roles associated with project delivery.
 - project funding has been reduced for IXP development and M-Root deployment due to the project being funded directly by the APNIC Foundation.
 - Delays in M-Root equipment delivery due to global chip shortage resulted in defer of equipment spending and part year savings on servers related operational costs.

Budget Utilisation by Pillars is shown below in Figure 3.

Year-to-date Budget and Actual expenditure by Pillars is shown below in Figure 4.

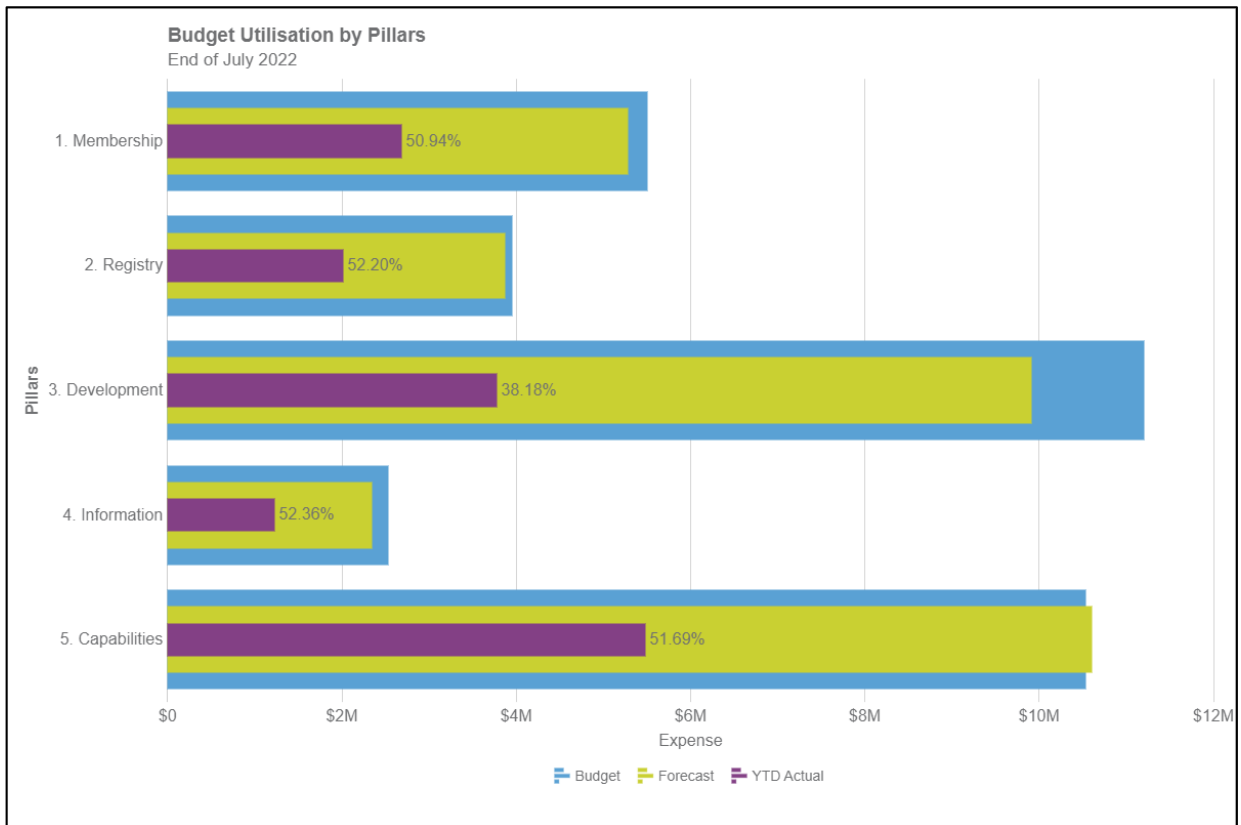


Figure 3. Budget Utilisation by Pillars

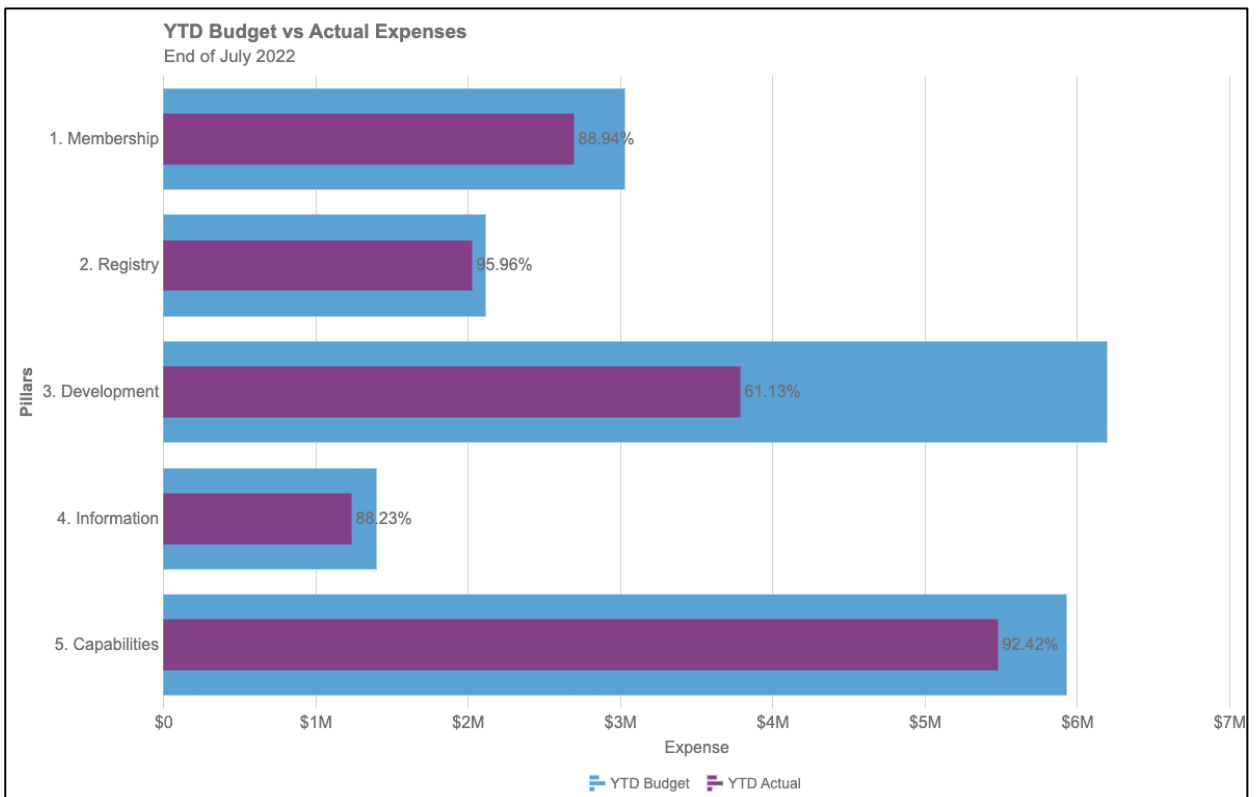


Figure 4. YTD Budget vs. Actual Expenditure by Pillars

5.2 Capital Expenditure

CAPITAL EXPENSES (AUD)	YTD Actual Jul 2022	YTD Budget Jul 2022	Variance \$	Variance %
Registry products	0	230,000	-230,000	-100%
Total - Registry	0	230,000	-230,000	-100%
APNIC conferences	9,450	43,000	-33,550	-78%
APNIC academy	0	25,000	-25,000	-100%
Internet infrastructure support	0	60,000	-60,000	-100%
Total - Development	9,450	128,000	-118,550	-93%
Research and analysis	52,700	123,000	-70,300	-57%
Total - Information	52,700	123,000	-70,300	-57%
Internal technical infrastructure	197,144	509,700	-312,556	-61%
Finance and business services	5,179	40,000	-34,821	-87%
Employee experience	24,658	387,500	-362,842	-94%
Total - Capability	226,981	937,200	-710,219	-76%
Total - Capital Expenses	289,131	1,418,200	-1,129,069	-80%

Table 5. Capital Expenditure by Pillars and Workstreams

Capital Expenditure (Table 5)

Only those workstreams with a year-to-date budgeted or actual spend are shown. Workstreams not shown currently have zero budget and actual spend year-to-date. The capital expenditure budget was prioritised into the first half of 2022. Refer to Table 3: Capital Expenditure for further details.

Capital Budget Utilisation by Pillars is shown below in Figure 5.

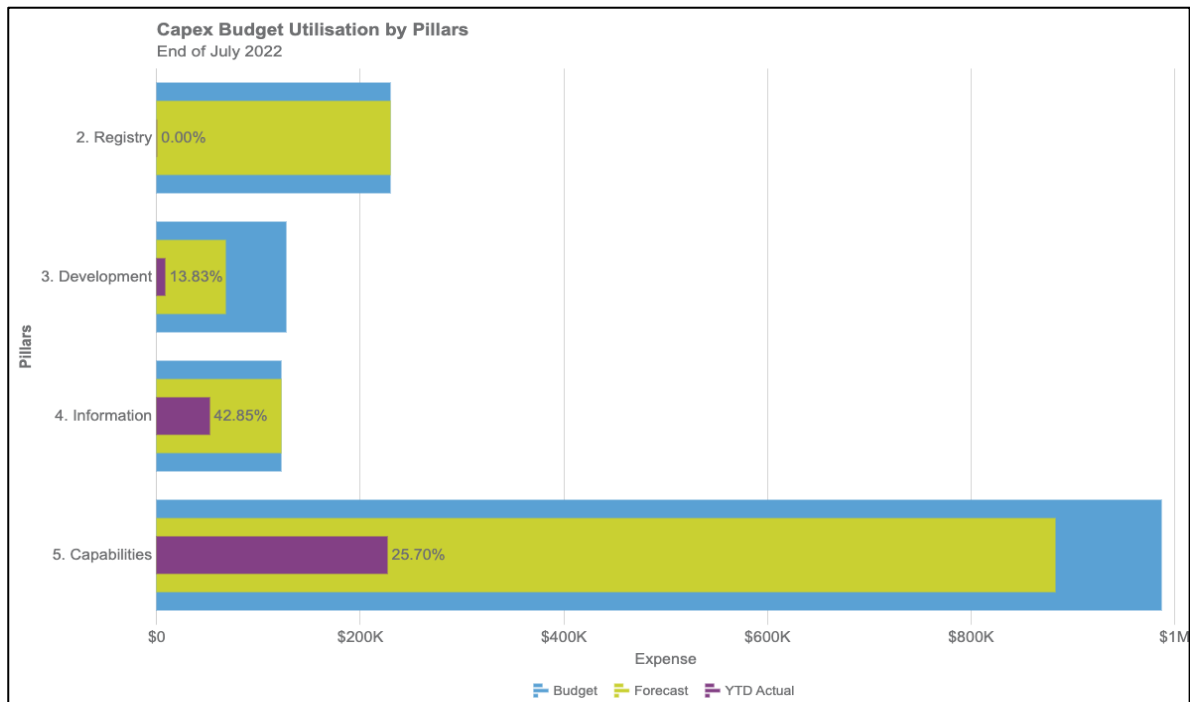


Figure 5. Capital Budget Utilisation by Pillars

6 APNIC Reserve

6.1 Cash Flow Statement

This report shows the cash flow status as at the end of July 2022.

Amount (AUD)	YTD Jul 2022
Total Operating Activities	
YTD Net Income	-2,004,241
Total Adjustments to Surplus/ (Deficit)	
Receivables	-2,078,353
Other Current Asset	-613,319
Payable	141,066
Withholding Tax Payable	15,196
Other Current Liability	662,802
Total Adjustments to Surplus/ (Deficit)	-1,872,608
Total Operating Activities	-3,876,849
Total Investing Activities	
Fixed Asset	80,071
Other Asset	3,258,955
Total Investing Activities	3,339,026
Total Financing Activities	
Long Term Liability	49,751
Equity	0
Total Financing Activities	49,751
Net Change in Cash for Period	-488,072
Cash at Beginning of Period	11,234,947
Cash at End of Period	10,746,875

Table 6. Cash Flow Statement

Cashflow Statement (Table 6)

- \$2,078,353 increase in receivables due to NIR renewal invoices and Foundation project recharges in July 2022 but not yet due for collection.
- \$613,319 increase in Other Current Asset largely due to increase in prepayments and NRO receivables.
- \$662,802 increase in other current liabilities attributed to increase in unearned revenue and payables offset by reduction in accrued expenses.
- \$3,258,955 decrease in other assets due to the decline in value of investment portfolio.

6.2 Capital Reserve

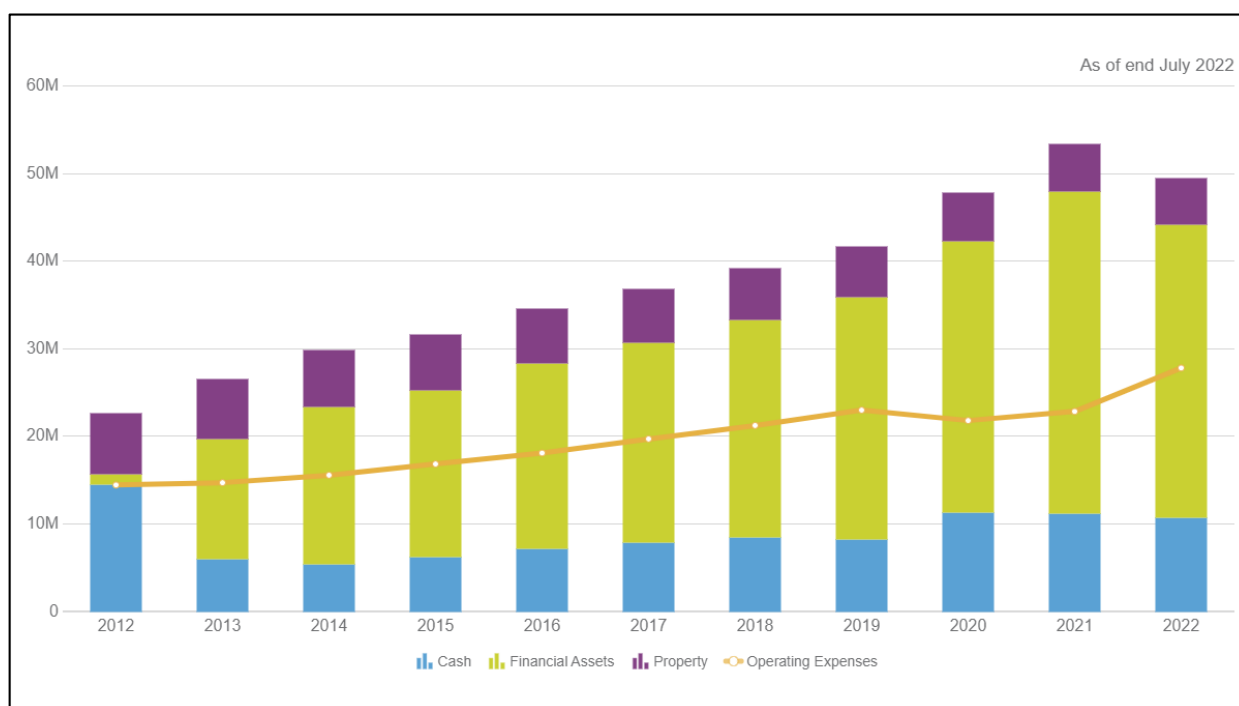


Figure 6. APNIC Reserves

Capital Reserve (Figure 6)

The Reserve is diversified between Cash Investments, Investment Portfolio, and APNIC Property (i.e. APNIC Office). At the end of July, APNIC maintained \$10,746,875 in cash reserves, \$33,469,172 has been invested in the investment portfolio and \$5,384,722 invested in APNIC Property. Figure 5 above tracks the value and the allocation of these assets over time against the operating expenses for each year for comparison. The decline in the reserve between December 2021 and July 2022 was mainly due to the decrease in cash held and decline in value of the investment portfolio.

6.3 APNIC's Equity and Reserves

By comparing the Total Equity (including retained earnings and unrealised gains / losses on the investment portfolio), and the monthly operating expenses based on the actual and budget, excluding APNIC Foundation project expenses for 2022, the number of month's coverage of operational expenses is set out below:

	YTD July Equity vs Actual Expenses	YTD July Equity vs Budgeted Expenses	Actual 2021*	Actual 2020*	Actual 2019
Total Equity (AUD)	36,841,319	36,841,319	38,845,560	34,176,883	30,724,702
% Equity Covered By Cash/ Cash Equivalents	120%	116%	123%	124%	117%
Monthly Operating Expenses (AUD)	1,960,421	2,283,484	2,125,305	2,024,419	1,914,554
Number of Months of expenses covered by Equity	18.79	16.13	18.28	16.88	16.05

Table 7. Equity and Reserves

* Calculation is based on the average monthly operating expenses of the approved budget, excluding Foundation project expenses, as it better reflects the APNIC operating cost base in a COVID-free course of business.

7 Membership

7.1 Membership by Category

Membership	Total Dec 2021	YTD New Jul-22	Reactivation Adjustment	YTD Closed Jul-22	YTD Size Change Jul-22	Total Jul-22	% Total
Extra Large	26	0		0	0	26	0%
Very Large	49	0		0	-2	47	1%
Large	151	2		0	0	153	2%
Medium	548	2		-3	18	565	6%
Small	3,733	105		-94	15	3,759	42%
Very Small	4,126	275	4	-78	-46	4,281	48%
Associate	135	41	1	-22	15	170	2%
TOTAL	8,768	425	5	-197	0	9,001	100%

Table 8. Membership by Category

Membership by category (Table 8)

There were 76 new and reactivated members and 22 account closures in July 2022. Overall net membership growth for the month was 54 members. Year-to-date, there have been:

- 425 new members vs. 469 budgeted new members
- 197 closures vs. 182 budgeted account closures

As at the end of July 2022, APNIC had a total of 9,001 Members serving 53 economies.

7.2 Membership by Economy

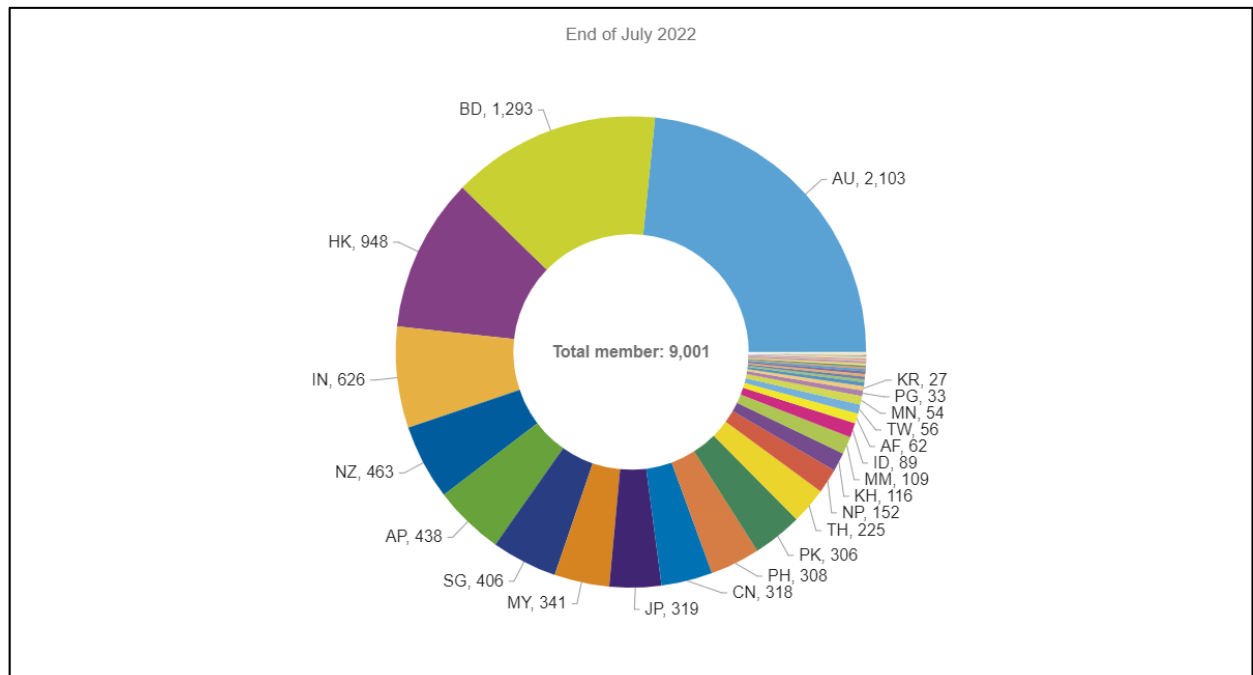


Figure 7. Membership by Economy

7.3 Membership Growth

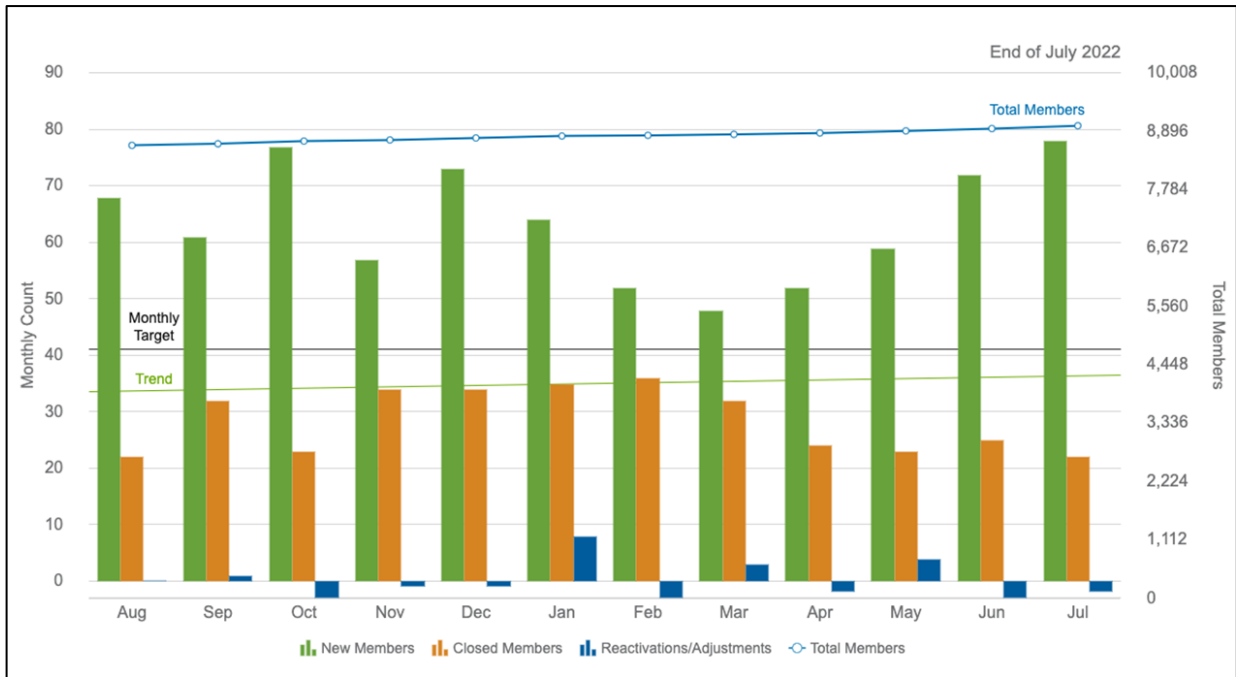


Figure 8. Monthly Membership Movement

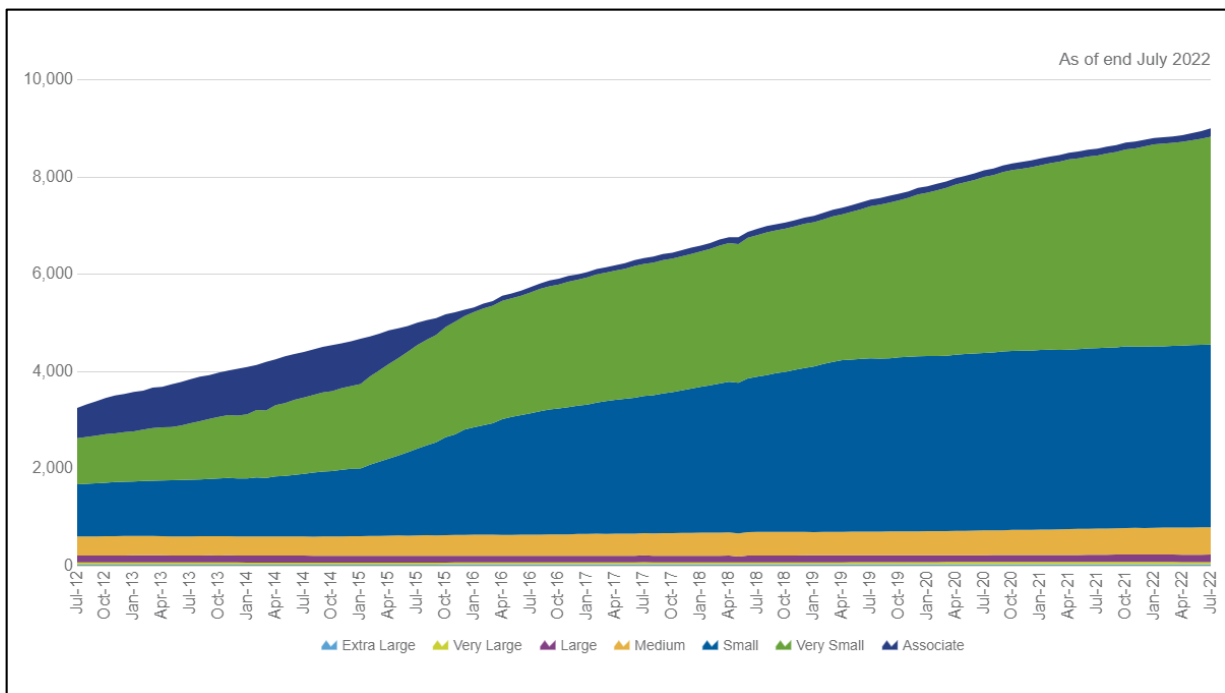


Figure 9. Total Membership by tier

7.4 Year-to-Date Membership Movement by Economy

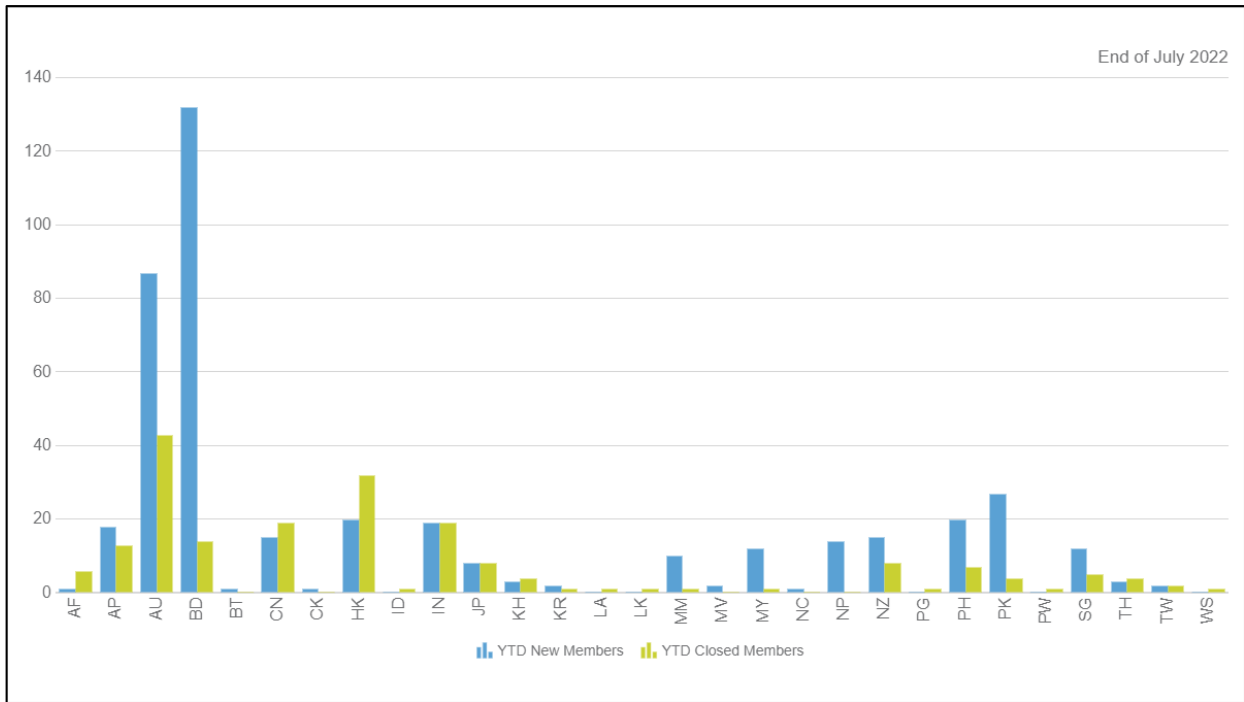


Figure 10. Year-to-Date Membership Movement by Economy

Membership movement by economy (Figure 10)

Figure 10 shows new and closed membership movement by economy as at end of July.

- Top new member economies are Bangladesh, Australia and Pakistan.
- Top closed member economies are Australia, Hong Kong, China and India.

7.5 Membership Closures Analysis

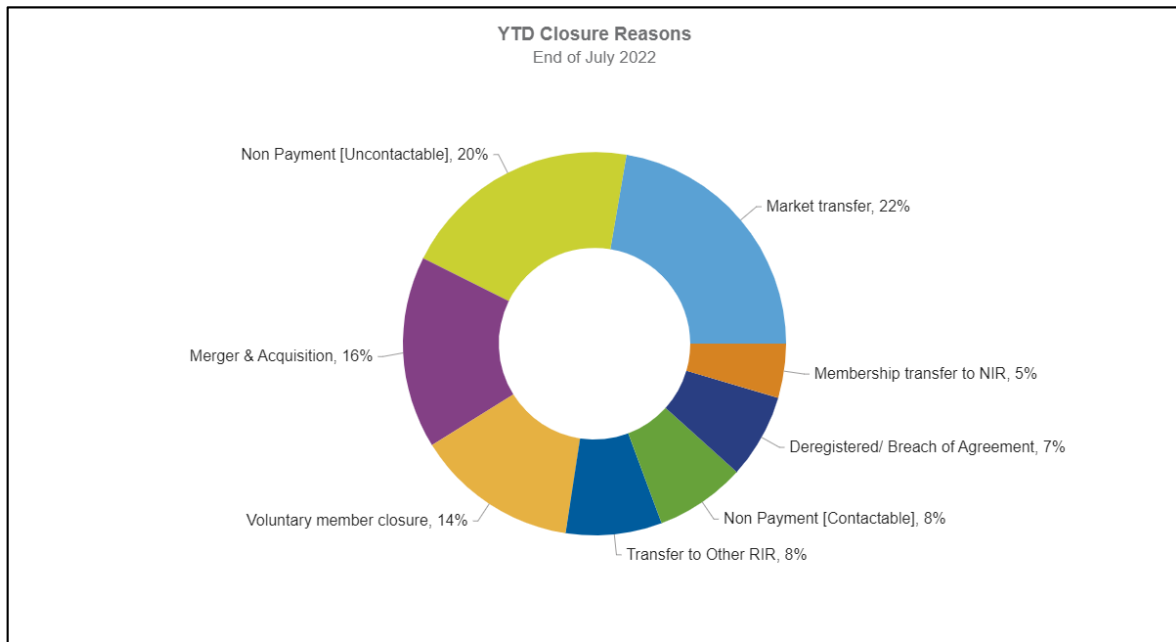


Figure 11. Closure Analysis

Figure 11 provides an analysis of Membership account closures as at the end of July. 48.7% of the closures relate to accounts closed due to the failure to establish contact, the business is no longer operating, or breach of agreement, where resource holdings are returned to APNIC.

7.6 Membership Closures by Year Joined

Year Joined	Deregistered/ Breach of Agreement	Market transfer	Membership transfer to NIR	Merger & Acquisition	Non Payment [Uncontactable]	Non Payment [Contactable]	Voluntary member closure	Transfer to Other RIR	Grand Total
1999					1				1
2000						1			1
2003					1				1
2004					1		1		2
2006		1							1
2007		1							1
2008					1	1			2
2009				3				1	4
2010		1		4	1				6
2011					1		2	1	4
2012		4		4	4	1		2	15
2013	1	1		4	3		1		10
2014	2	4		9		1	1	3	20
2015		8	1	2	6		1	4	22
2016	1	15	5	6	5	1	3	4	40
2017		6	1		2		4		13
2018			1		2	2	5		10
2019	5				6		2		13
2020	3		1		3	7	4		18
2021	1	3			3	1	2	1	11
2022	1						1		2
Grand Total	14	44	9	32	40	15	27	16	197

Table 9. Membership Closures by Year Joined

Membership Closures by Year Joined (Table 9)

Table 9 shows membership closures by year joined as at end of July.

There are 3 out of 44 closed members due to market transfer joined in 2021. Of these members:

- One member received resources through a merger and acquisition transfer in 2021 that were originally delegated in 2015. The member subsequently transferred the resources out via market transfer and closed out the account.
- Two members both started as associate members in 2021. They have claimed historical resources and subsequently transferred them out via market transfer and closed out the accounts.

7.7 Membership Closures by Economy

Economy	Deregistered/ Breach of Agreement	Market transfer	Membership transfer to NIR	Merger & Acquisition	Non Payment [Uncontactable]	Non Payment [Contactable]	Voluntary member closure	Transfer to Other RIR	Grand Total	IPv4 Resources Reclaimed (/24's)	IPv6 Resources Reclaimed (/32's)	ASN Reclaimed
AF					3		3		6	25	1	7
AP	1	2			3	1	2	4	13	2	8	13
AU		9		15	5	3	6	5	43	33	12	20
BD	1	8		1	1	1		2	14	3	7	16
CN	1	8			5	2	1	2	19	39	11	9
HK	10	11		3	5	1	1	1	32	82	17	20
ID			1						1			1
IN		3	8	3	2	2	1		19	9	7	6
JP				4	3		1		8	13	0	1
KH		1			1		2		4	8	1	3
KR					1				1	2	0	1
LA					1				1	4		1
LK							1		1	2	0	1
MM					1				1	1	0	1
MY				1					1			
NZ		1		1	1		5		8	12	4	4
PG							1		1	2		1
PH				1	3	1	1	1	7	9	0	4
PK		1			1	1	1		4	6	3	3
PW						1			1	2		1
SG				1	2	1		1	5	4	2	3
TH				1	1	1	1		4	3	0	3
TW	1			1					2	12	1	3
WS					1				1	8	1	1
Grand Total	14	44	9	32	40	15	27	16	197	281	75	123

Table 10. Membership Closures by Economy

January – July 2022 Finance Presentation

11 September 2022

All dollar values are denoted in Australian dollars (unless otherwise stated)

Finance Presentation

- Financial Performance – Year to date July 2022
- Financial Forecast – 2022 Full Year Outlook
- Additional Slides:
 - Income Statement & Balance Sheet
 - Re-forecast Analysis

Year to date July 2022

FINANCIAL PERFORMANCE

2022 Financial Highlights

TOTAL REVENUE (2022 YTD)

\$16,710,229

\$19,133,527

-12.67%

OPERATING EXPENSE (2022 YTD)

\$15,229,767

\$18,673,056

-18.44%

OPERATING SURPLUS (2022 YTD)

\$1,480,461

\$460,471

221.51%

TOTAL EQUITY (Jul 2022)

\$36,841,319

\$38,845,560

-5.16%

TOTAL REVENUE (Forecast FY)

\$30,756,830

\$32,962,915

-6.69%

OPERATING EXPENSE (Forecast FY)

\$32,064,309

\$33,764,411

-5.04%

OPERATING DEFICIT (Forecast FY)

-\$1,307,479

-\$801,496

-63.13%

TOTAL EQUITY (Forecast Dec 2022)

\$34,053,378

\$38,845,560

-12.34%

FINANCIAL PERFORMANCE

- ▶
- ▶ Membership revenue. YTD 0.5% behind budget. Forecast 0.6% behind FY budget
- ▶ Total income. YTD 13% behind budget. Forecast 7% behind FY budget
- ▶ Total expenditure. YTD 18% behind budget. Forecast 5% behind FY budget
- ▶ Foundation projects. YTD 59.4% behind budget. Forecast 33% behind FY budget
- ▶ Investment. Fair value loss of \$3.3M YTD

FINANCIAL POSITION

- ▶
- ▶ Cash and current assets of \$15.6M is up 16.5% from LY
- ▶ Financial investment of \$33.5M is down 8.9% from LY
- ▶ Total liabilities of \$19.2M is up 4.7% from LY
- ▶ Financial stability of 18.8 months coverage is up from 18.3 months LY
- ▶ Financial stability of 16.1 months coverage forecast for 2022

Financial Performance – Revenue

Membership fees

- Lag indicator – membership is recognised over 12 months
- Year to date – \$14,369,154 actual vs \$14,393,298 budget
- Full Year – \$24,721,796 forecast vs \$24,799,617 budget (-0.3% variance)

Sign-Up fees

- Lead indicator – will impact membership fees into the future
- Year to date – \$153,000 actual vs \$178,388 budget
- Full Year – \$271,536 forecast vs \$315,985 budget (-14.1% variance)

- 425 new members vs 469 budget YTD
- 197 closed members vs 182 budget YTD
- \$1,286 average new member fee vs \$1,435 budget
- 37.9% LDC vs 30% budget YTD

Investment income

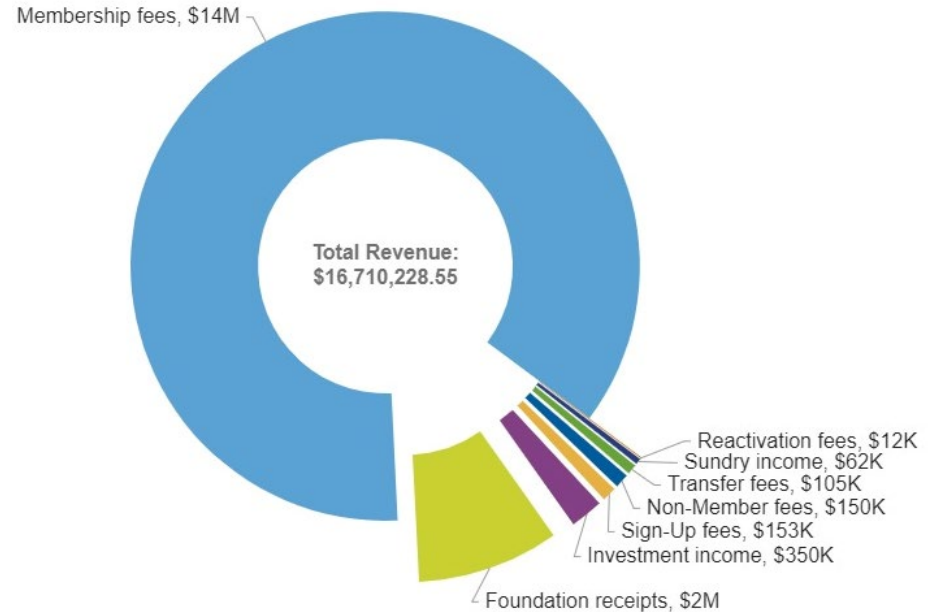
- Year to date – \$349,732 actual vs \$506,876 budget
- Full Year – \$694,937 forecast vs \$806,229 budget (-13.8% variance)
- Forecast Credit Suisse dividend distribution is \$122,075 below budget

Total revenue

- Year to date – \$16,710,229 actual vs \$19,133,527 budget
- Full Year - \$30,756,830 vs \$32,962,915 (-6.7% variance)

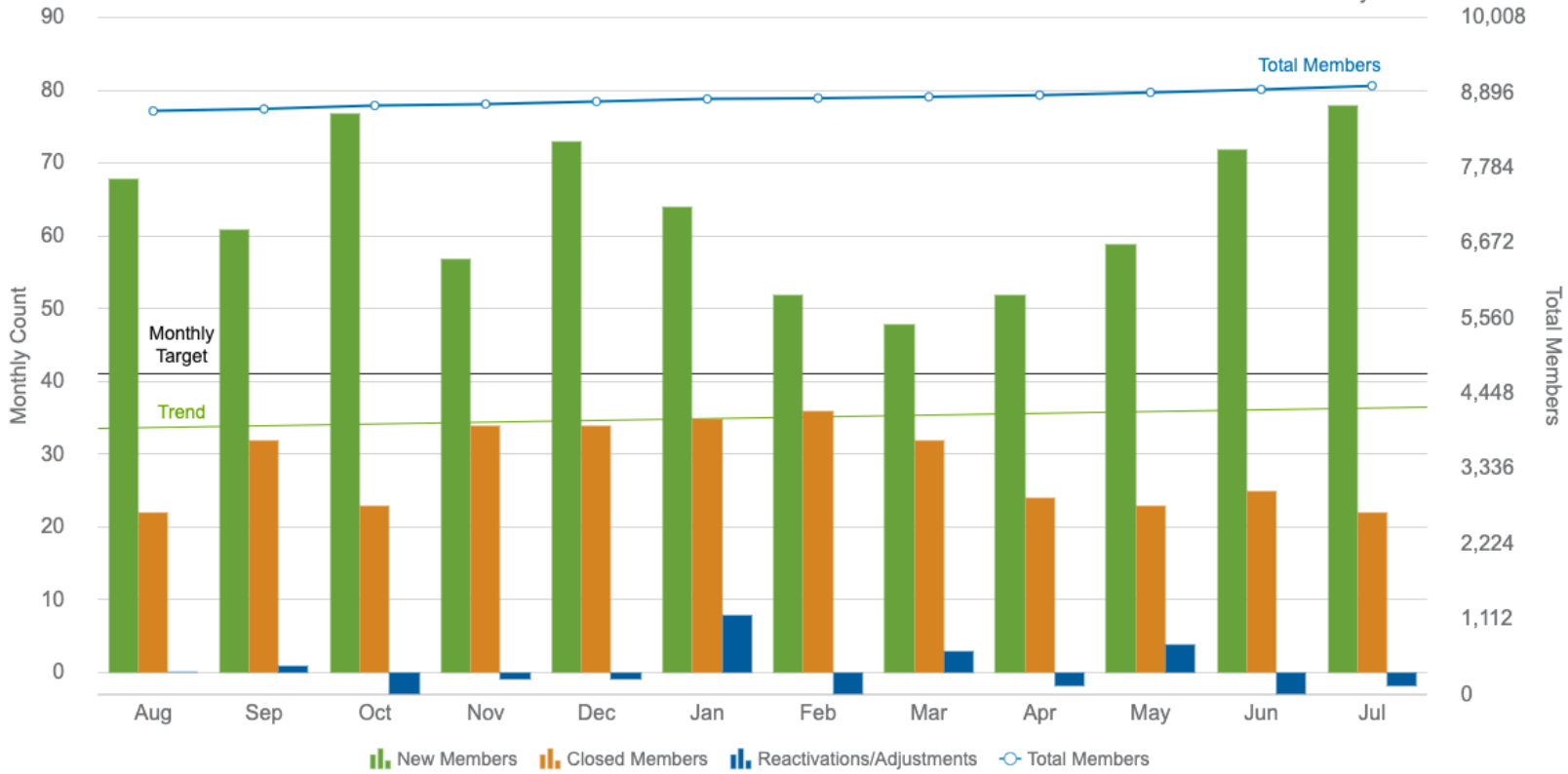
APNIC Revenue

End of July 2022

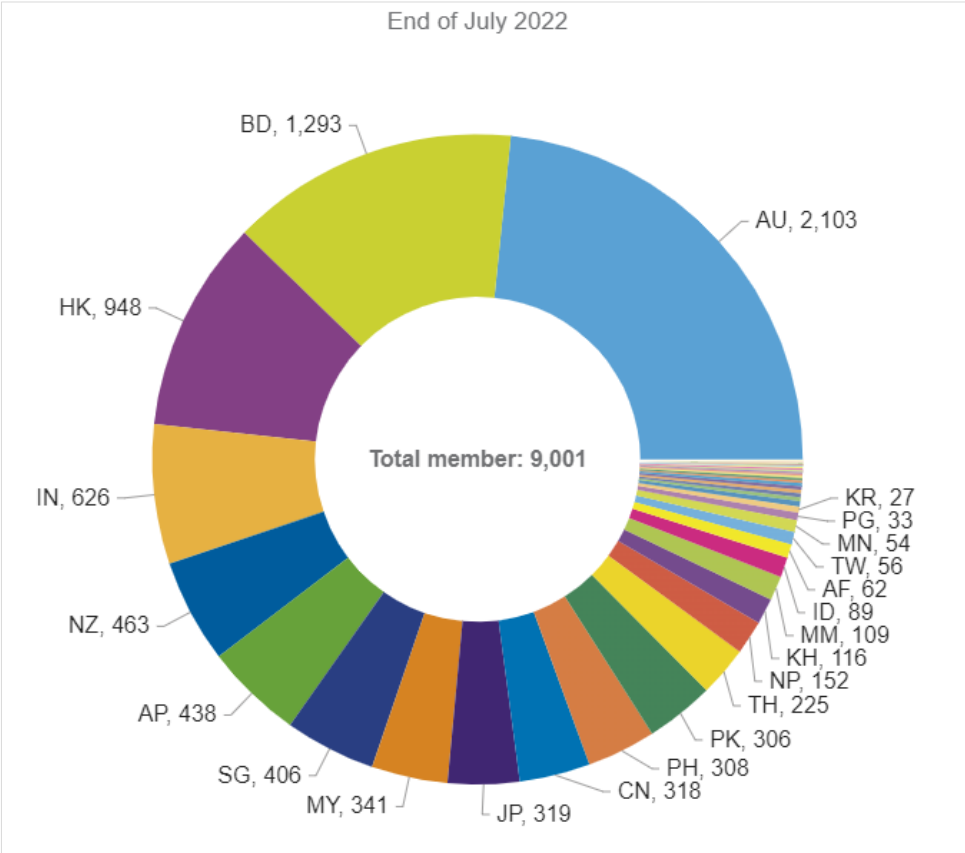


Membership – 12 month rolling trend

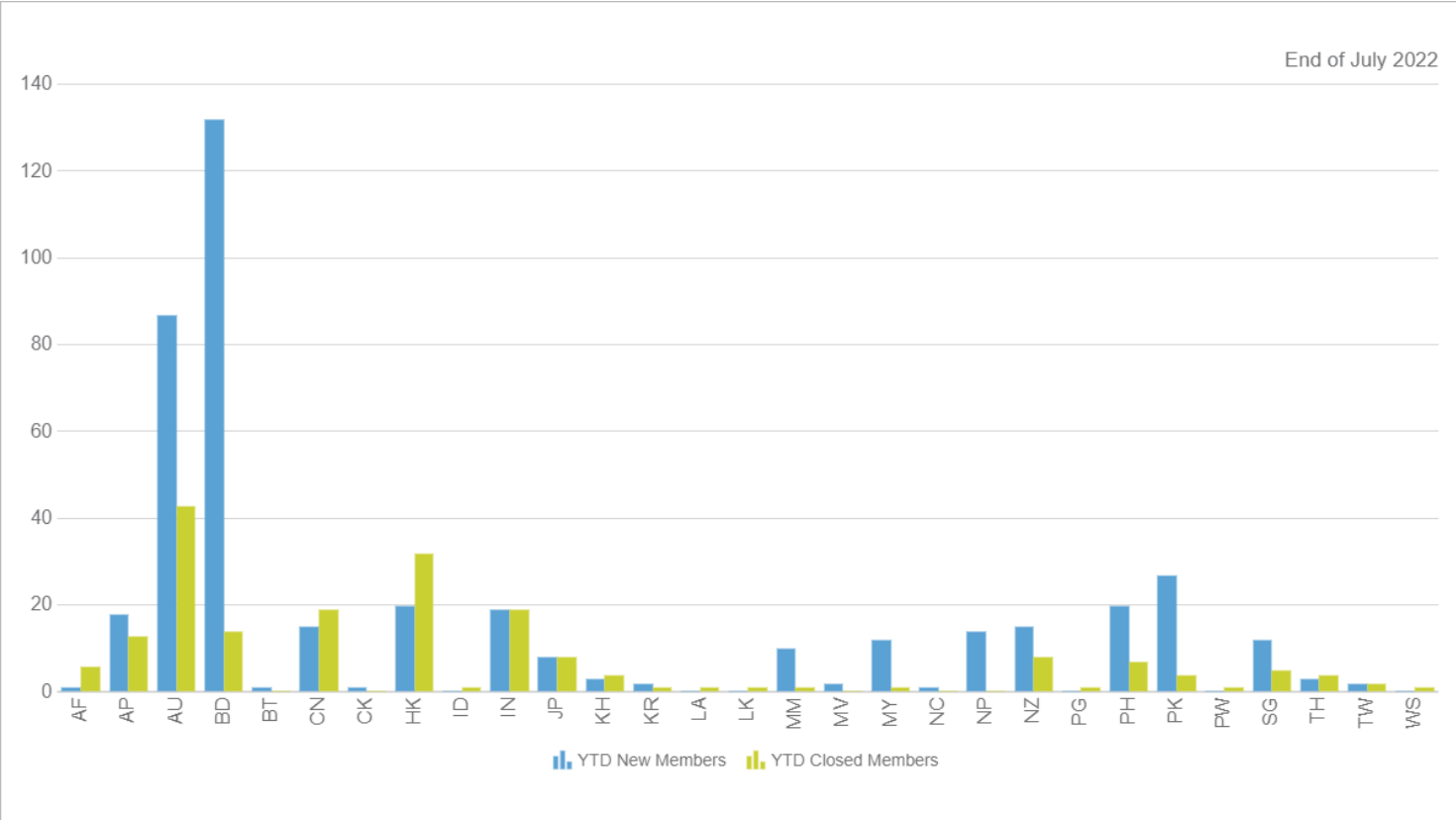
End of July 2022



Members by Economies



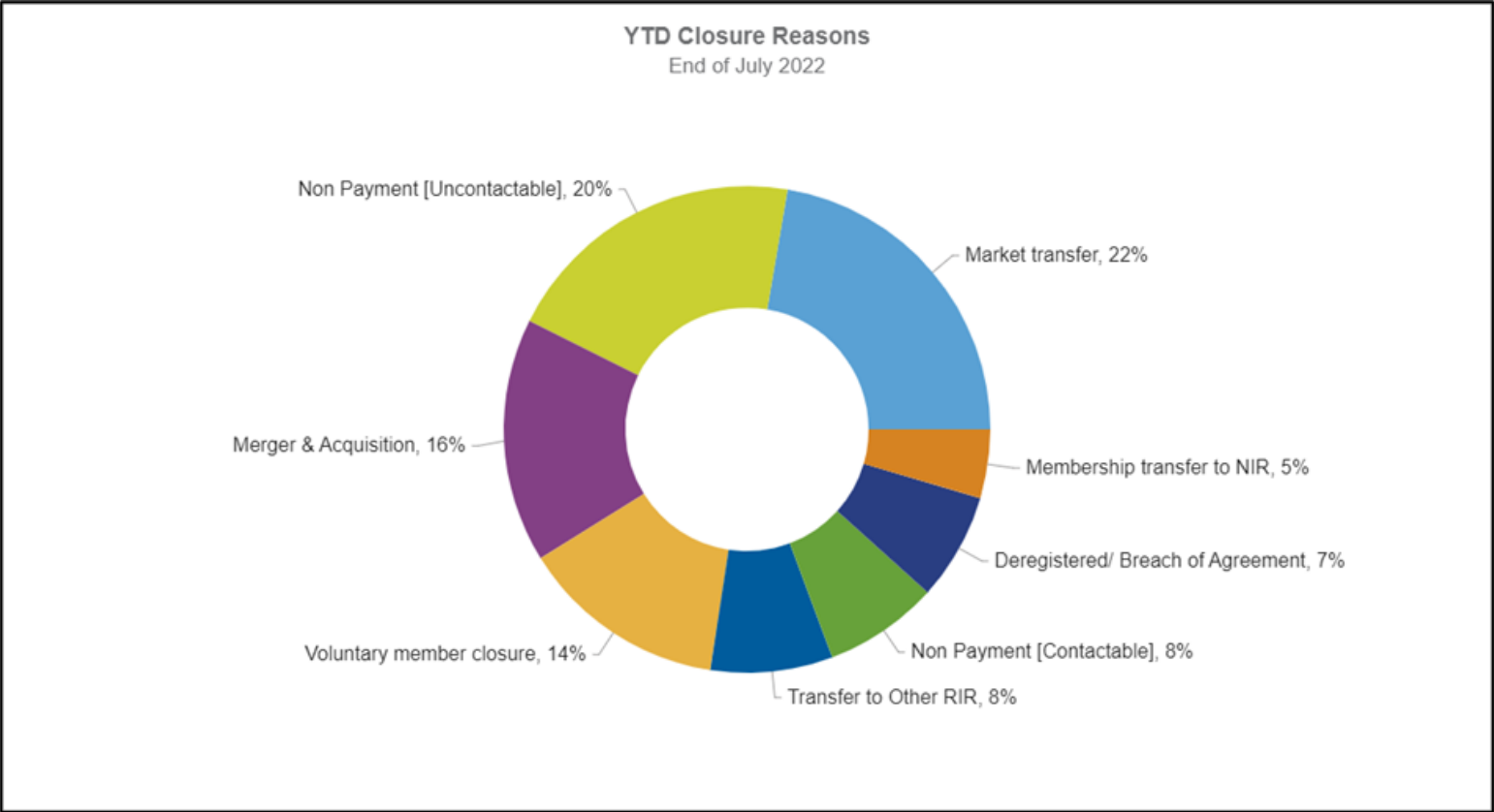
Members by Economies



Membership – tracking

Membership	Total Dec 2021	YTD New Jul-22	Reactivation Adjustment	YTD Closed Jul-22	YTD Size Change Jul-22	Total Jul-22	% Total
Extra Large	26	0		0	0	26	0%
Very Large	49	0		0	-2	47	1%
Large	151	2		0	0	153	2%
Medium	548	2		-3	18	565	6%
Small	3,733	105		-94	15	3,759	42%
Very Small	4,126	275	4	-78	-46	4,281	48%
Associate	135	41	1	-22	15	170	2%
TOTAL	8,768	425	5	-197	0	9,001	100%

Membership Closures



Membership – closures by economy

Economy	Deregistered/ Breach of Agreement	Market transfer	Membership transfer to NIR	Merger & Acquisition	Non Payment [Uncontactable]	Non Payment [Contactable]	Voluntary member closure	Transfer to Other RIR	Grand Total	IPv4 Resources Reclaimed (/24's)	IPv6 Resources Reclaimed (/32's)	ASN Reclaimed
AF					3		3		6	25	1	7
AP	1	2			3	1	2	4	13	2	8	13
AU		9		15	5	3	6	5	43	33	12	20
BD	1	8		1	1	1		2	14	3	7	16
CN	1	8			5	2	1	2	19	39	11	9
HK	10	11		3	5	1	1	1	32	82	17	20
ID			1						1			1
IN		3	8	3	2	2	1		19	9	7	6
JP				4	3		1		8	13	0	1
KH		1			1		2		4	8	1	3
KR					1				1	2	0	1
LA					1				1	4		1
LK							1		1	2	0	1
MM					1				1	1	0	1
MY				1					1			
NZ		1		1	1		5		8	12	4	4
PG							1		1	2		1
PH				1	3	1	1	1	7	9	0	4
PK		1			1	1	1		4	6	3	3
PW						1			1	2		1
SG				1	2	1		1	5	4	2	3
TH				1	1	1	1		4	3	0	3
TW	1			1					2	12	1	3
WS					1				1	8	1	1
Grand Total	14	44	9	32	40	15	27	16	197	281	75	123

Membership – closures by year joined

Year Joined	Deregistered/ Breach of Agreement	Market transfer	Membership transfer to NIR	Merger & Acquisition	Non Payment [Uncontactable]	Non Payment [Contactable]	Voluntary member closure	Transfer to Other RIR	Grand Total
1999					1				1
2000						1			1
2003					1				1
2004					1		1		2
2006		1							1
2007		1							1
2008					1	1			2
2009				3				1	4
2010		1		4	1				6
2011					1		2	1	4
2012		4		4	4	1		2	15
2013	1	1		4	3		1		10
2014	2	4		9		1	1	3	20
2015		8	1	2	6		1	4	22
2016	1	15	5	6	5	1	3	4	40
2017		6	1		2		4		13
2018			1		2	2	5		10
2019	5				6		2		13
2020	3		1		3	7	4		18
2021	1	3			3	1	2	1	11
2022	1						1		2
Grand Total	14	44	9	32	40	15	27	16	197

Financial Performance – Expenses

Salaries & personnel expenses

- Year to date – \$8,890,326 actual vs \$9,469,608 budget
- Full Year – \$16,953,448 forecast vs \$17,577,277 budget
- Delays in recruitment due to tight labour market

Professional fees

- Year to date – \$1,001,947 actual vs \$1,018,377 budget
- Full Year – \$2,096,037 forecast vs \$1,824,480 budget

Travel expense

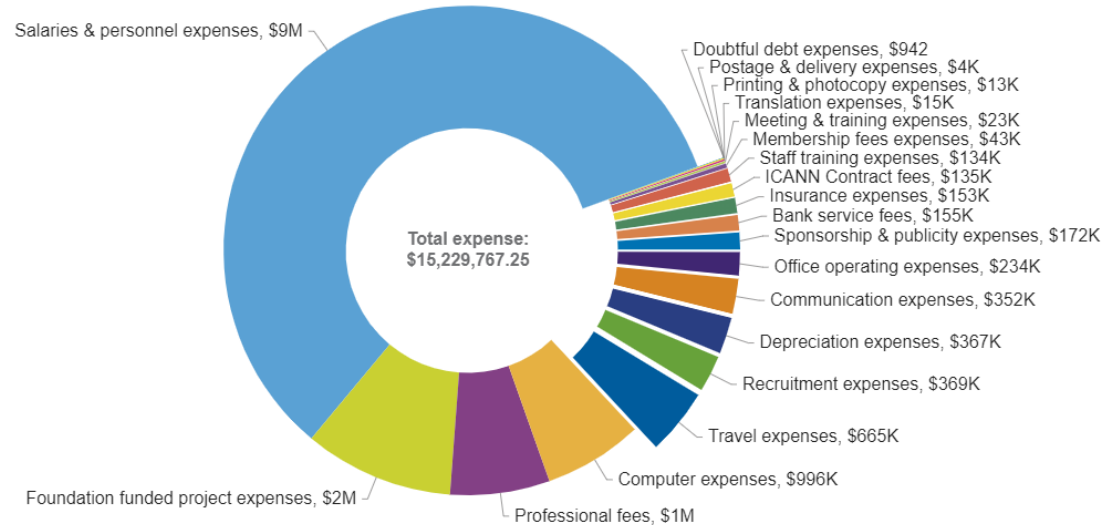
- Year to date – \$664,692 actual vs \$638,885 budget
- Full Year – \$1,750,000 forecast vs \$1,066,700 budget
- Limited capacity, increasing demand and ongoing volatility

Total expense

- Year to date – \$15,229,767 actual vs \$18,673,056 budget
- Full Year – \$32,064,309 actual vs \$33,764,411 budget (-5.0%)

APNIC Expenses

End of July 2022



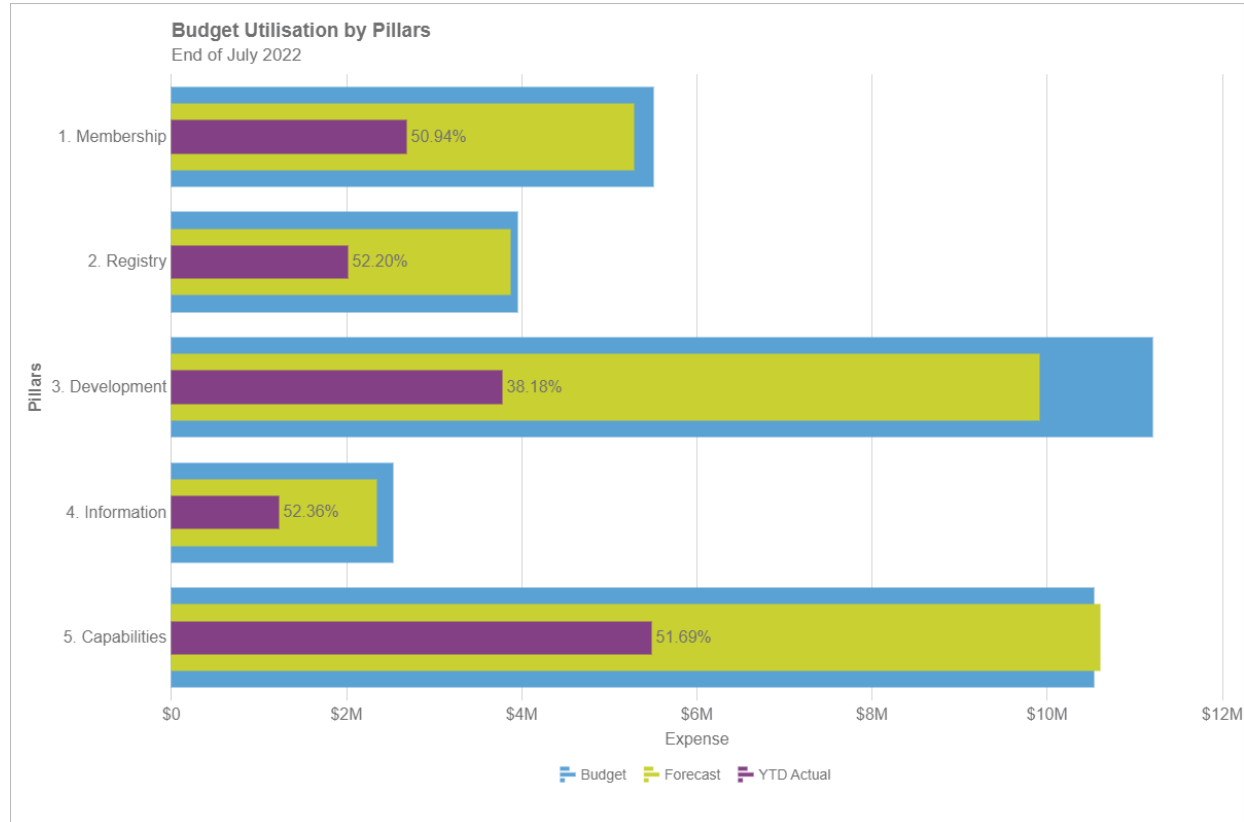
Operating Expenses Forecast by Pillars

Development Pillar

- Year to date – \$3,786,780 actual vs \$6,194,927 budget
- Full Year – \$9,918,079 forecast vs \$11,210,815 budget
- Delays in recruiting and onboarding trainers, retained community trainers and other project funded roles associated with project delivery.
- Project funding reduced for IXP development and M-Root deployment due to the project being funded directly by the APNIC Foundation.
- Delays in M-Root equipment delivery due to global chip shortage resulted in defer of equipment spending and part year savings on servers related operational costs.

Capability Pillar

- Year to date – \$5,484,313 actual vs \$5,934,067 budget
- Full Year – \$10,543,000 forecast vs \$10,610,494 budget
- Sage implementation cost – full year forecast \$65,000 to be recognised as current year expense



Capital Expenditure by Pillars

Registry (\$0 actual vs \$230,000 budget YTD)

- Backend loaded capital spending vs budget spending prioritized towards the start of the year

Development (\$9,450 actual vs \$128,000 budget YTD)

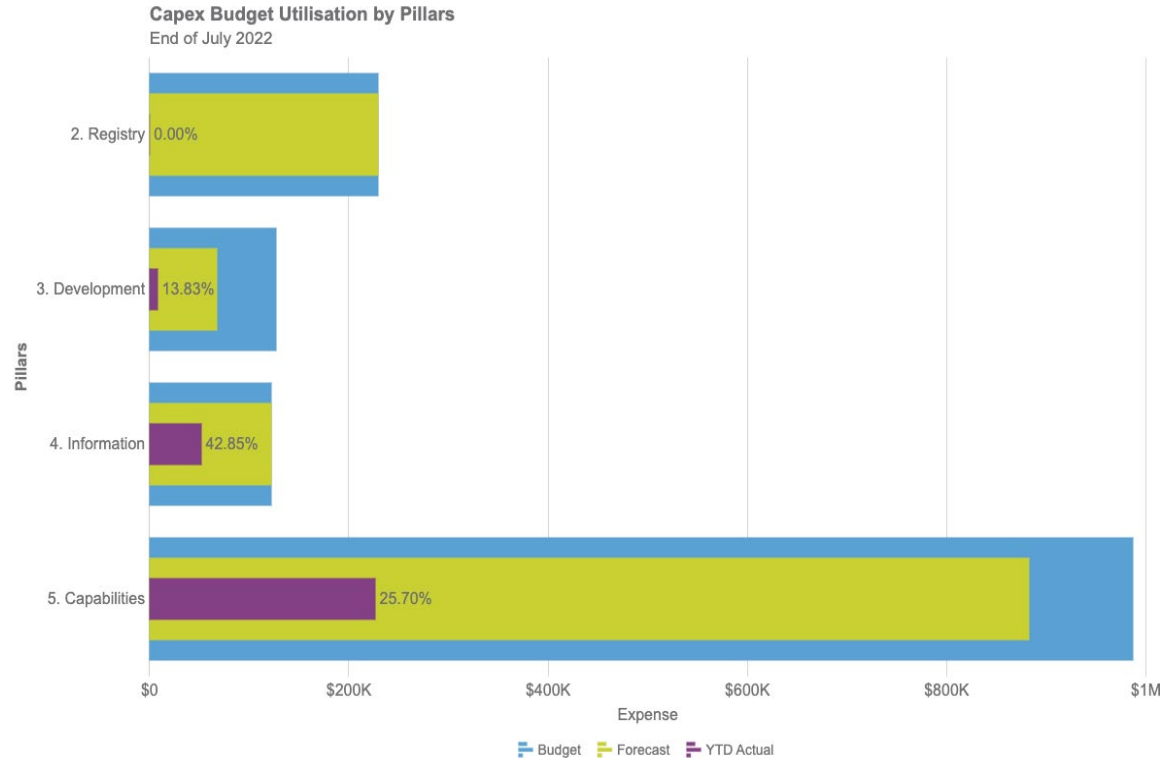
- \$38,867 delayed in delivery of network accessories
- \$65,000 reduction in forecast spending in servers and equipment

Information (\$52,700 actual vs \$123,000 budget YTD)

- Backend loaded capital spending vs budget spending prioritized towards the start of the year

Capabilities (\$266,981 actual vs \$937,200 budget YTD)

- \$100,000 Sage Implementation cost is to be recognized as operational expense
- Backend loaded capital spending vs budget spending was prioritized towards the start of the year



Financial Position – Assets & Liabilities

Other Assets

- \$2,691,672 increase due to:
 - NIR renewal invoices
 - NRO and APNIC Foundation receivables
 - Increase in prepayments

Financial Assets

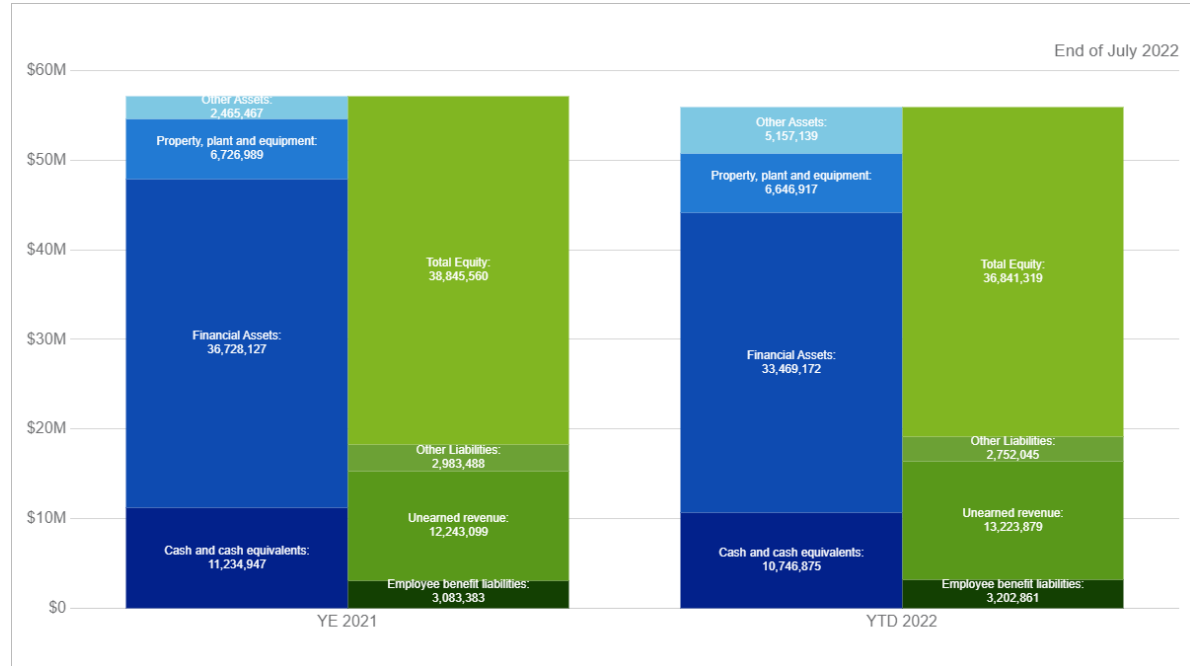
- Fair value loss of \$3,258,955 driven by market uncertainty and volatility

Cash

- \$488,072 reduction in cash due to suppliers payment

Equity

- \$2,004,241 reduction driven by YTD net deficit

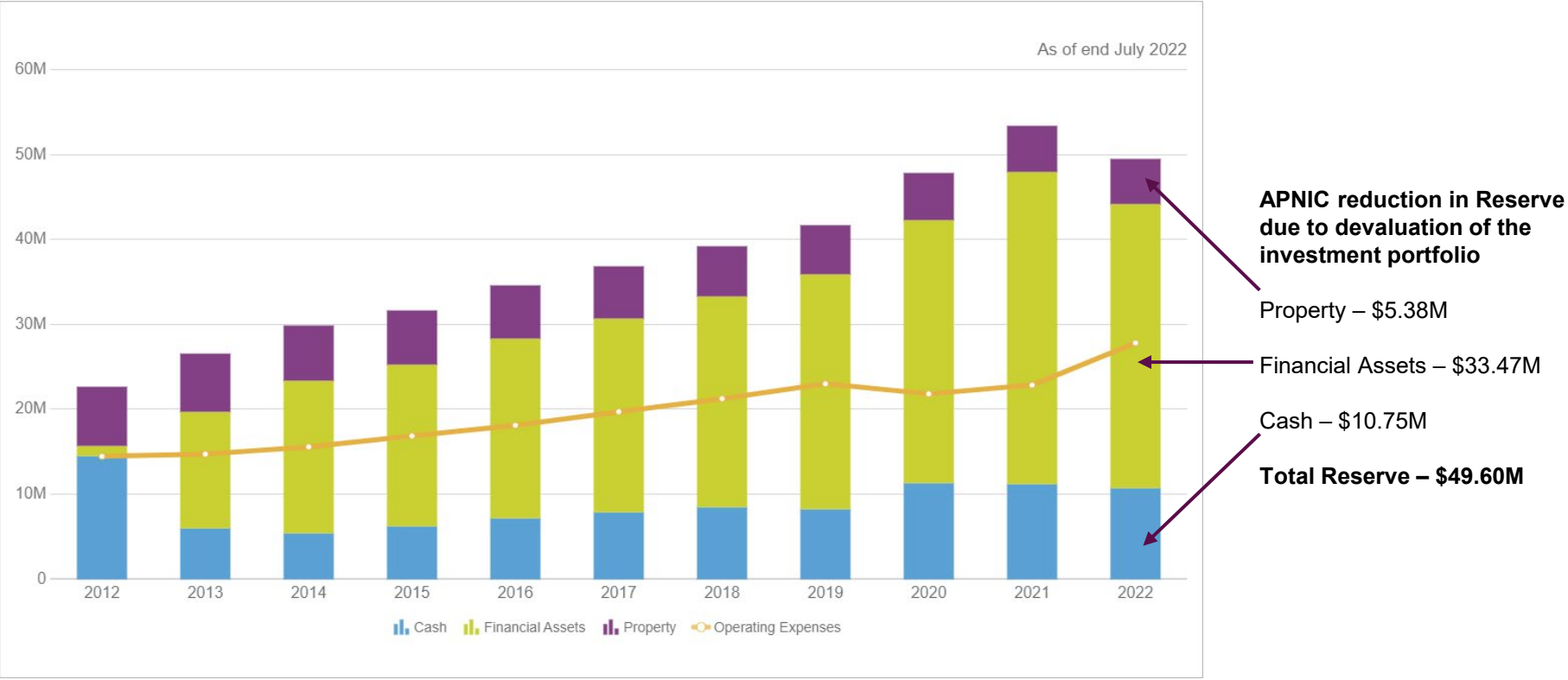


Financial Position – Stability Measure

	YTD July Equity vs Actual Expenses	YTD July Equity vs Forecast Expenses	Actual 2021*	Actual 2020*	Actual 2019
Total Equity (AUD)	36,841,319	36,841,319	38,845,560	34,176,883	30,724,702
% Equity Covered By Cash/ Cash Equivalents	120%	116%	123%	124%	117%
Monthly Operating Expenses (AUD)	1,960,421	2,283,484	2,125,305	2,024,419	1,914,554
Number of Months of expenses covered by Equity	18.79	16.13	18.28	16.88	16.05

- The 2022 financial stability measure is shown above for both YTD actual (18.79 months) and YTD budget (16.13 months)
- The financial stability measure is impacted by a \$2M reduction in equity from the decline in the investment portfolio value.
- During the 2022 budget presentation, APNIC projected a decline in the stability measure for the year due to the budget deficit.
- *The 2020 & 2021 financial stability measures are based on budgeted monthly operating expenses as this provides a more realistic expectation of coverage in a non-COVID operating environment.

Financial Position – APNIC Reserve



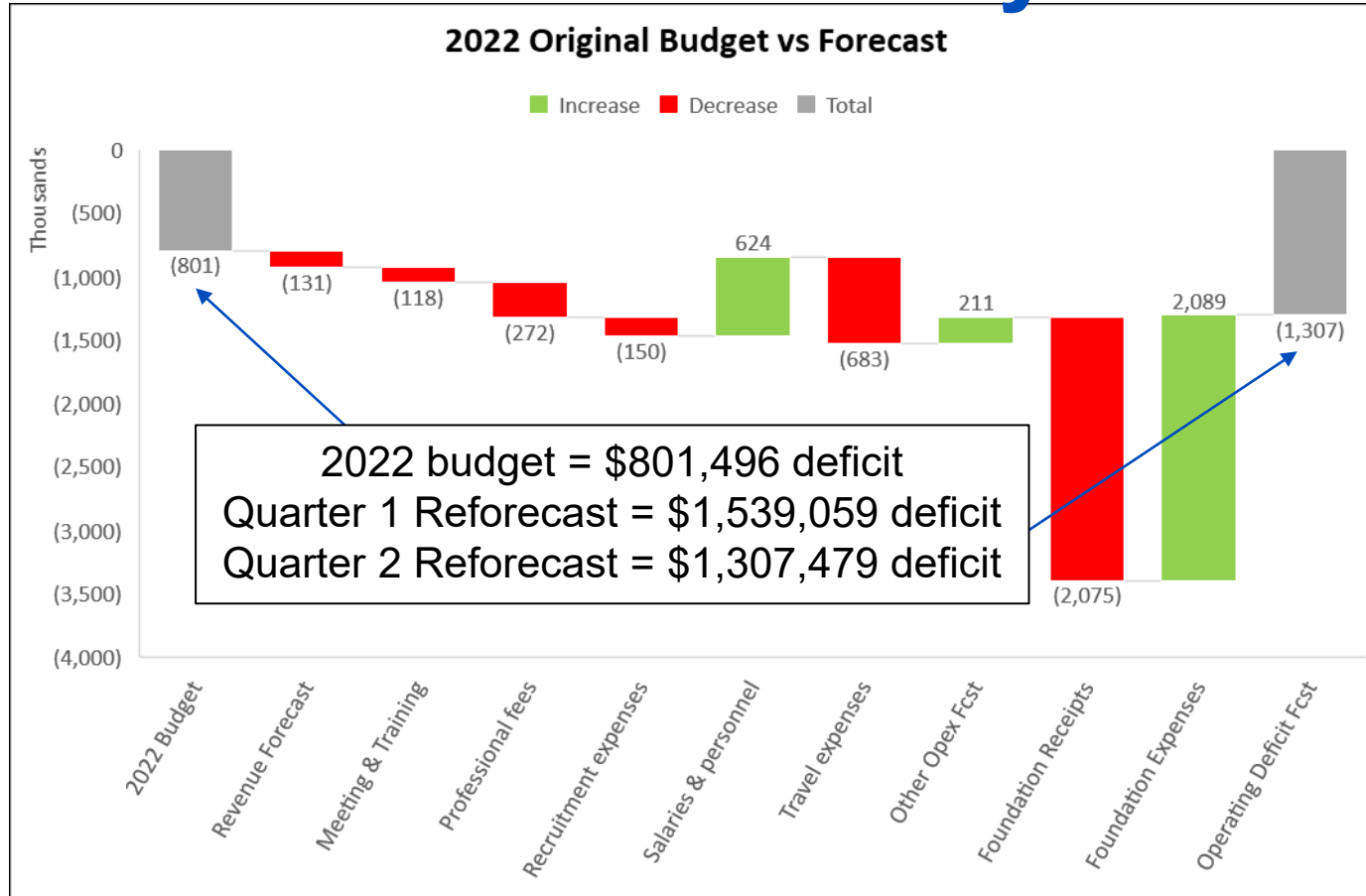
APNIC Reserve – Cash Rates

- Reserve Bank of Australia cash rate movements in 2022:
 - 0.1% since November 2020
 - 0.25% increase in May 2022
 - 0.5% in June 2022
 - 0.5% in July
 - 0.5% in August
 - 0.5% in September
 - Now at 2.35%
- Interest rates on short term deposits and interest- bearing accounts are improving with the rate rises.
- NAB \$1M and \$500K term deposits were renewed in May and June 2022 at 0.65% and 0.85% respectively
- Westpac security deposits of \$1.4M and \$1.25M are pending renewal in the second half of the year.

2022 Full Year

FINANCIAL RE-FORECAST

2022 Forecast – Summary Waterfall



2022 Full Year Forecast

INCOME STATEMENT AND BALANCE SHEET

Income Statement – July 2022 & Forecast

Amount (AUD)	YTD Actual	YTD Actual	Variance %	Budget	Forecast	Budget
	Jul 2022	Jul 2021		2022	2022	Variance %
Membership fees	14,369,154	14,072,333	2%	24,799,617	24,721,796	-0%
Non-members fees	150,267	149,036	1%	263,209	262,369	-0%
Reactivation fees	11,600	10,500	10%	22,644	22,534	-0%
Sign-Up fees	153,000	170,250	-10%	315,985	271,536	-14%
Transfer fees	105,333	123,008	-14%	220,431	188,396	-15%
Sundry income	62,332	-52,890	-218%	172,200	307,547	79%
Foundation receipts	1,508,810	290,094	420%	6,362,600	4,287,715	-33%
Operating Revenue	16,360,496	14,762,331	11%	32,156,686	30,061,893	-7%
Investment income	349,732	491,769	-29%	806,229	694,937	-14%
TOTAL REVENUE	16,710,228	15,254,100	10%	32,962,915	30,756,830	-7%
Bank service fees	155,446	144,956	7%	261,000	261,000	-0%
Communication expenses	352,258	377,780	-7%	688,600	631,854	-8%
Computer expenses	996,098	805,128	24%	2,295,755	2,310,139	1%
Foundation funded project expenses	1,506,820	0	0%	6,362,600	4,273,826	-33%
Depreciation expenses	366,911	387,684	-5%	839,869	669,452	-20%
Doubtful debt expenses	-942	-698	35%	20,000	20,000	0%
ICANN contract fees	135,195	115,217	17%	225,600	231,762	3%
Insurance expenses	153,042	138,922	10%	231,600	249,545	8%
Meeting & training expenses	22,887	19,746	16%	553,500	671,821	21%
Membership fees expenses	43,239	33,598	29%	81,010	82,413	2%
Office operating expenses	233,883	189,375	24%	455,640	445,343	-2%
Postage & delivery expenses	4,057	10,331	-61%	48,000	39,000	-19%
Printing & photocopy expenses	13,476	13,301	1%	29,000	29,000	-0%
Professional fees	1,001,947	1,163,079	-14%	1,824,480	2,096,037	15%
Recruitment expenses	369,123	166,166	122%	306,000	456,000	49%
Salaries & personnel expenses	8,890,326	8,205,817	8%	17,577,277	16,953,448	-4%
Sponsorship & publicity expenses	171,648	123,074	39%	553,780	589,668	6%
Staff training expenses	134,246	79,295	69%	314,000	274,000	-13%
Translation expenses	15,416	-	0%	30,000	30,000	0%
Travel expenses	664,692	40,845	1527%	1,066,700	1,750,000	64%
TOTAL EXPENSES	15,229,767	12,013,616	27%	33,764,411	32,064,309	-5%
Operating Surplus/ (Deficit)	1,480,461	3,240,484	-54%	-801,496	-1,307,479	63%
Fair value (loss)/ gain on financial assets	-3,484,702	1,185,223	-394%	0	-3,484,702	0%
Surplus/ (Deficit) Before Tax	-2,004,241	4,425,708	-145%	-801,496	-4,792,181	498%

Balance Sheet – As at July 2022

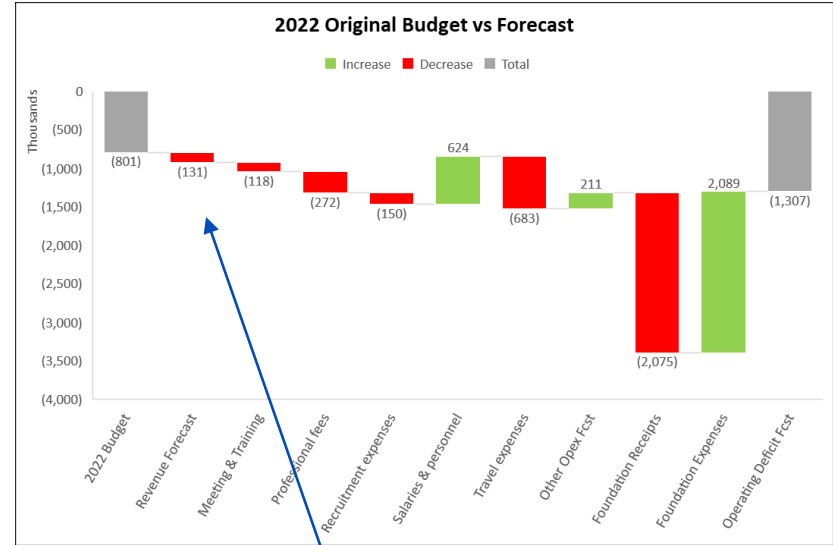
Amount (AUD)	As at Jul 2022	Year End 2021	% Change
CURRENT ASSETS			
Cash/ Term Deposits	10,746,875	11,234,947	-4%
Receivables	3,461,578	1,166,701	197%
Others	1,374,005	977,210	41%
TOTAL CURRENT ASSETS	15,582,458	13,378,858	16%
NON-CURRENT ASSETS			
Other Financial Assets	33,469,172	36,728,127	-9%
Property, plant and equipment	6,646,917	6,726,989	-1%
Deferred Tax Assets	321,557	321,557	0%
TOTAL NON-CURRENT ASSETS	40,437,646	43,776,672	-8%
TOTAL ASSETS	56,020,104	57,155,530	-2%
CURRENT LIABILITIES			
Payables	1,304,193	1,535,635	-15%
Provisions	2,769,757	2,700,030	3%
Unearned Revenue	13,223,879	12,243,099	8%
TOTAL CURRENT LIABILITIES	17,297,828	16,478,765	5%
NON - CURRENT LIABILITIES			
Deferred Tax Liabilities	1,447,853	1,447,853	0%
Total Provisions	433,104	383,353	13%
TOTAL NON-CURRENT LIABILITIES	1,880,957	1,831,206	3%
TOAL LIABILITIES	19,178,785	18,309,971	5%
NET ASSETS	36,841,319	38,845,560	-5%
Equity			
Share Capital	1	1	0%
Retained earnings	38,845,559	34,176,882	14%
Net (Deficit)/ Surplus	-2,004,241	4,668,677	-143%
TOTAL EQUITY	36,841,319	38,845,560	-5%

2022 Full Year

RE-FORECAST ANALYSIS

Forecast – Revenue

- Membership fees:
 - \$14,369,154 YTD Actual
 - \$24,799,617 Full Year Budget
 - \$24,591,320 Q1 Forecast
 - \$24,721,796 Q2 Forecast
- Membership fees – \$155,255 below budget
 - Membership fees \$79K below budget
 - Sign-up fees \$44K below budget
 - Transfer fees \$32K below budget
- Sundry income – \$135,347 above budget
 - Conference sponsorship \$135K above budget
- Investment income – \$111,292 below budget
 - Credit Suisse distributions \$122K below budget
 - Interest income \$11K above budget

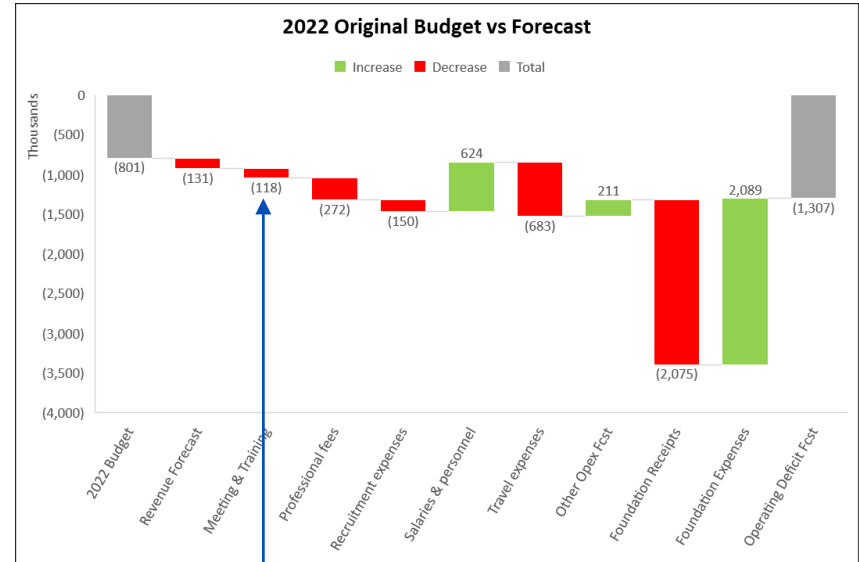


Revenue forecast drivers:

Membership fees	(\$155,255)
Sundry income	\$135,347
Investment income	(\$111,292)
Total	(\$131,200)

Forecast – Meeting & Training Expenses

- Meeting & Training Expense:
 - \$ 22,887 YTD Actual
 - \$553,500 Full Year Budget
 - \$518,500 Q1 Forecast
 - \$671,821 Q2 Forecast
- APNIC 54 – \$259,000 above budget
 - APriGF-APSIG event support \$220K unbudgeted
 - APNIC conference cost \$39K above budget
- Other Meeting – \$140,679 below budget
 - Deferral of secretariat conference to 2023 \$135K savings

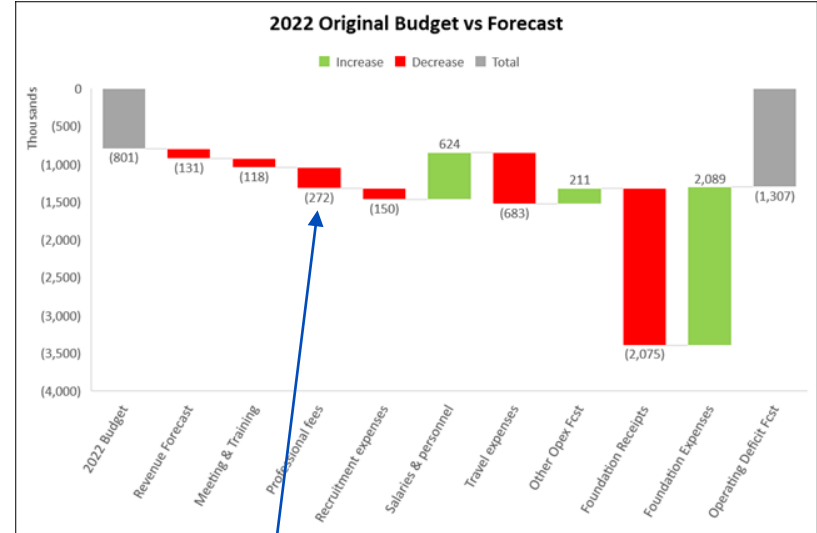


Meeting & Training Expense:

APNIC 54	(\$259,000)
Other meetings	\$140,679
Total	(\$118,321)

Forecast – Professional Fees

- Professional fees:
 - \$1,001,947 YTD July Actual
 - \$1,824,480 Full Year Budget
 - \$2,099,122 Q1 Forecast
 - \$2,096,037 Q2 Forecast
- Consultancy – \$192,280 above budget
 - Agile coaching maternity coverage \$84K unbudgeted
 - Sage implementation change in accounting \$65K
 - 5 9s additional provision \$43K
- Other Professional fees – \$79,277 above budget
 - Perm staff conversion to contractor \$99K reallocation from salaries and wages
 - Other savings on fees \$19K

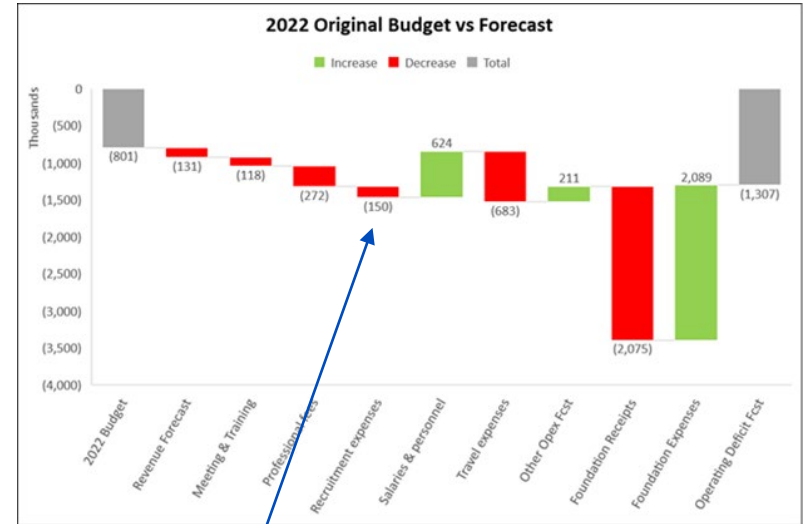


Professional fees:

Consultancy	(\$192,280)
Other professional fees	(\$79,277)
Total	(\$271,557)

Forecast – Recruitment Expenses

- Recruitment expenses:
 - \$369,123 YTD July Actual
 - \$306,000 Full Year Budget
 - \$386,059 Q1 Forecast
 - \$456,000 Q2 Forecast
- Recruitment – \$150,000 above budget
 - More overseas placement than expected with relocation costs forecast to be \$150K higher than budget



Recruitment expense:

Relocations

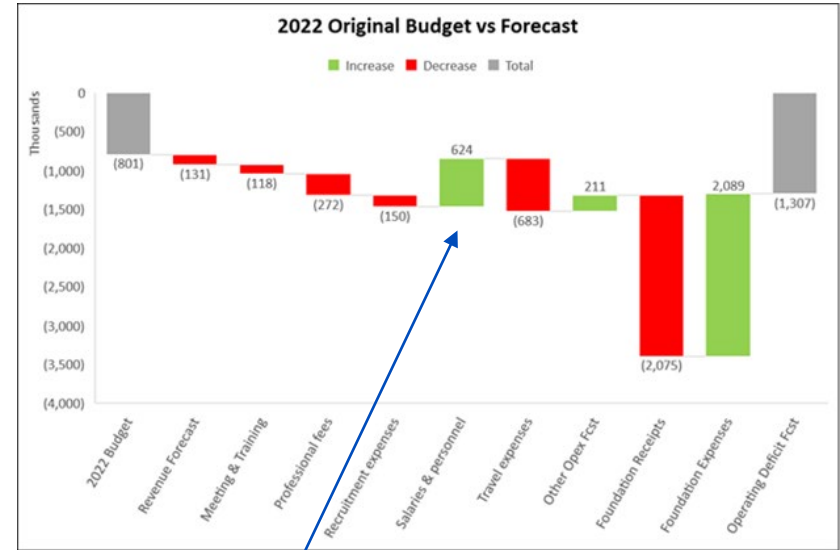
(\$150,000)

Total

(\$150,000)

Forecast – Salaries & Personnel Expenses

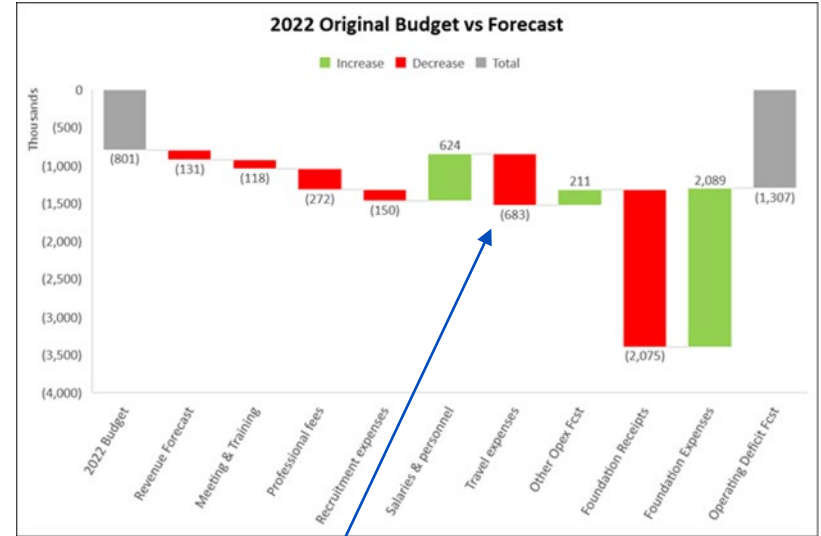
- Salaries & Personnel expenses:
 - \$8,890,326 YTD July Actual
 - \$17,577,277 Full Year Budget
 - \$17,193,942 Q1 Forecast
 - \$16,953,448 Q2 Forecast
- Personnel – \$623,829 below budget
 - Timing of recruitment for new positions
 - Vacancies created through departures
 - Reallocation to professional fees – contractors



Total Salaries expense (\$623,829)

Forecast – Travel Expenses

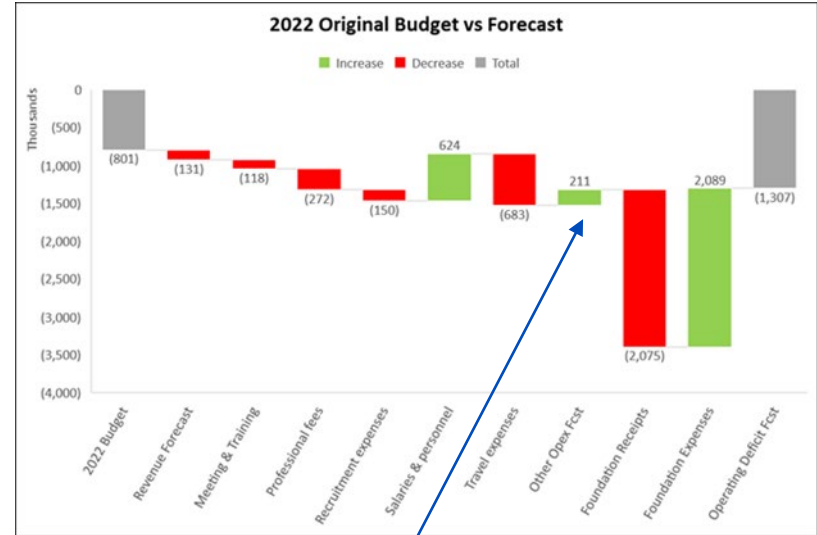
- Travel expenses:
 - \$ 664,692 YTD July Actual
 - \$1,066,700 Full Year Budget
 - \$1,750,000 Q1 Forecast
 - \$1,750,000 Q2 Forecast
- Year-to-date Travel spend
 - \$578K travel cost incurred starting April; 87% YTD expenses
 - Increasing demand, limited capacity and price volatility
- Travel Forecast
 - Ongoing review to optimize the benefit of hybrid vs FTF meetings
 - All travel reservations are being closely managed to ensure travel spend stay within the increased provision



Total Travel expenses (\$683,300)

Forecast – Other Operating expenses

- Other operating expenses:
 - \$2,773,972 YTD July Actual
 - \$6,073,854 Full Year Budget
 - \$6,036,548 Q1 Forecast
 - \$5,863,177 Q2 Forecast
- Other operating expenses – \$210,677 below budget
 - Depreciation is estimated to be \$170K lower than budget due to backend loaded capital spending vs budget spending was prioritized towards the start of the year
 - Staff training spending is expected to be \$40K below budget

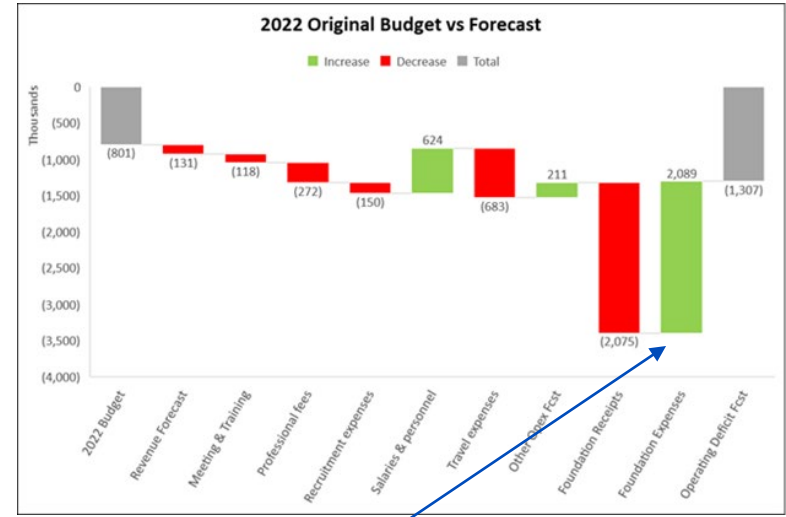


Other operating expenses:

Depreciation	\$170,417
Staff training expenses	\$ 40,000
Others	\$ 260
Total	\$210,677

Forecast – Foundation Activities

- Foundation activities expenses:
 - \$1,506,820 YTD July Actual
 - \$6,362,600 Full Year Budget
 - \$5,869,117 Q1 Forecast
 - \$4,273,826 Q2 Forecast
- Training – \$863,562 below budget
 - Delays in the recruitment and onboarding of trainers, retained community trainers, learning content developer and training certification officer due to skill shortage
 - Lower consultancy spending than budget on training content development due to capacity limitation
- M-Root and IXP – \$1,065,204 below budget
 - M-Root manpower cost direct funding from APNIC Foundation
 - M-Root data centre operational cost savings due to local hosts cost absorption
 - M-Root HW & SW expense savings due to capacity limitation
 - IXP development project with direct funding from APNIC Foundation and ISOC
- Others Foundation activities – \$160,008 below budget
 - Savings from reallocation research funding to analytics



Foundation activities expenses:

Training	(\$863,562)
M-Root and IXP	(\$1,065,204)
Others	(\$160,008)
Total	(\$2,088,774)

QUESTIONS?



Private Banking

Investment Report 1.7.2022 – 31.7.2022

APNIC PTY LTD

Portfolio Group: 3000039

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Private Banking

Investment Report 1.7.2022 – 31.7.2022

Portfolio Group **3000039**

In the Name of APNIC PTY LTD

Produced on 10.8.2022
Reporting Currency AUD

Relationship Manager Patrick Armitage
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APNIC PTY LTD
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Scope of Analysis

as of 31.7.2022

Components	Portfolio	Asset Value in AUD	Discretionary Mandate	Opened	Closed	Performance Activation	Performance Deactivation
Portfolio Group: 3000039							
Investment related Positions							
AUD Portfolio	3000039-10	0		16.08.2013		31.12.2013	
AUD Portfolio	3000039-70	33,539,078	Yes	16.08.2013		31.12.2013	
Total Investments		33,539,078					
Total Wealth		33,539,078					

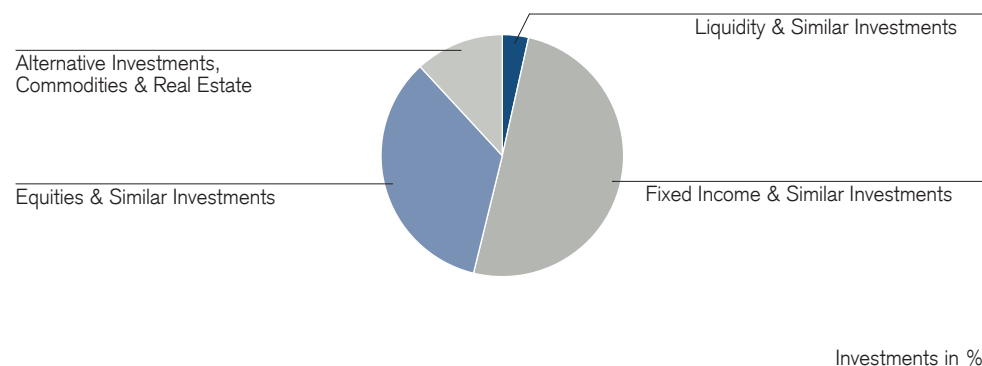
1. Overview

1.1. Asset Allocation

Asset Allocation by Asset Category

Period 1.7.2022 - 31.7.2022

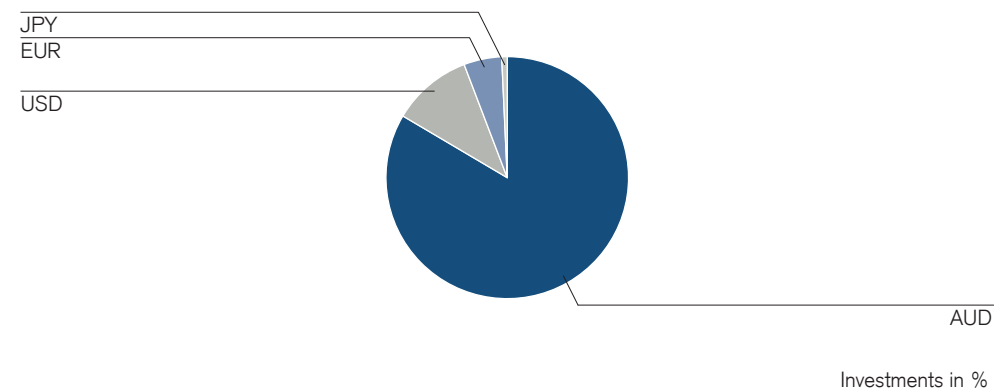
	Beginning Market Value in AUD	Change	Ending Market Value in AUD	Ending Market Value Prop.
■ Liquidity & Similar Investments	1,579,539	-407,644	1,171,895	3.49%
■ Fixed Income & Similar Investments	16,367,366	512,732	16,880,098	50.33%
■ Equities & Similar Investments	10,713,881	799,536	11,513,417	34.33%
■ Alternative Investments, Commodities & Real Estate	3,681,292	292,376	3,973,668	11.85%
Total Investments	32,342,078		33,539,078	100.00%



Asset Allocation by Currency

Period 1.7.2022 - 31.7.2022

	Beginning Market Value in AUD	Change	Ending Market Value in AUD	Ending Market Value Prop.
■ AUD - Australian Dollar	26,978,505	1,030,186	28,008,691	83.51%
■ USD - US Dollar	3,499,920	92,833	3,592,753	10.71%
■ EUR - Euro	1,629,027	63,753	1,692,780	5.05%
■ JPY - Japan Yen	234,614	10,228	244,842	0.73%
■ GBP - Pound Sterling	12	0	12	
Total Investments	32,342,078		33,539,078	100.00%



1.2. Income and Activity

Income Summary

Period 1.7.2022 - 31.7.2022

	Current Period in AUD	Year to Date in AUD
Cash Dividend	80,231	329,268
Coupon Received/Paid	0	322
Interest Earned	1,277	2,573
Interest Paid	0	-15
Net Income	81,508	332,147

Activity Summary

Period 1.7.2022 - 31.7.2022

	Current Period in AUD	Year to Date in AUD
Asset Inflows	0	0
Asset Outflows	0	0
Net Investment Asset Flows	0	0

1.3. Performance

Performance Summary

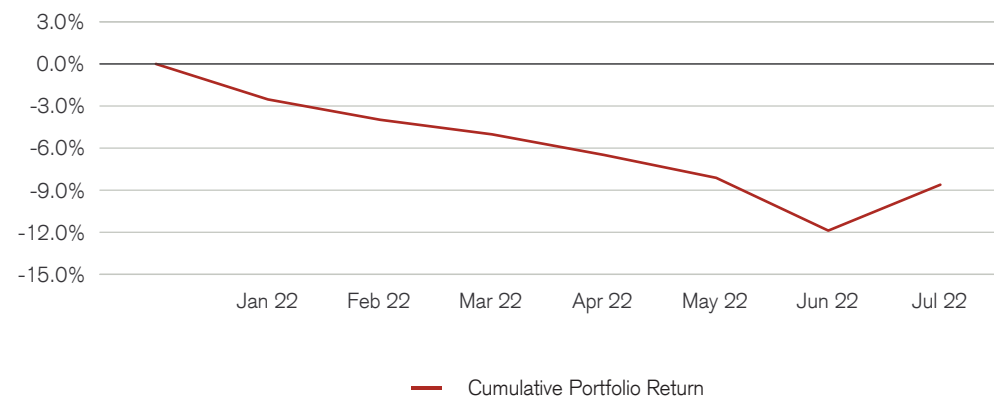
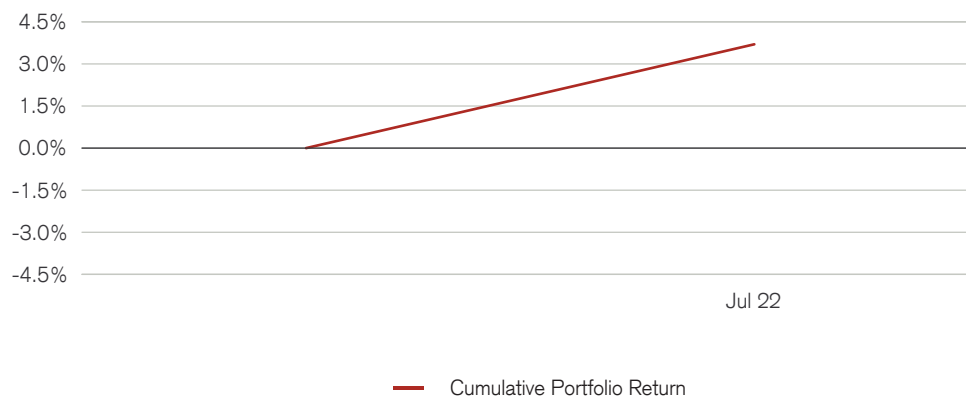
Period 1.7.2022 - 31.7.2022

	Asset Value in AUD	Asset Value in AUD
Ending Market Value		33,539,078
Beginning Market Value		32,342,078
Asset Flows including		0
Inflows	0	
Outflows	0	
Net Non-Investment Flows	0	
Taxes	0	
Flow Adjusted Value Change		1,197,000
Cumulative Portfolio Return – net		3.70%

Performance Year-to-date

Period 1.1.2022 - 31.7.2022

	Asset Value in AUD	Asset Value in AUD
Ending Market Value		33,539,078
Beginning Market Value		36,710,697
Asset Flows including		-9,574
Inflows	0	
Outflows	0	
Net Non-Investment Flows	0	
Taxes	-9,574	
Flow Adjusted Value Change		-3,162,045
Cumulative Portfolio Return – net		-8.61%



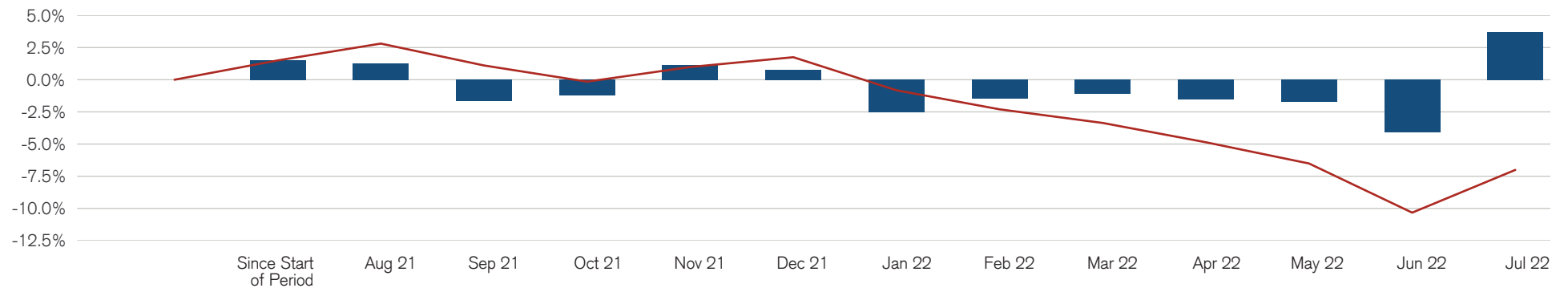
2. Analyses

2.1. Performance

Performance Details

Period 1.7.2021 - 31.7.2022

	Since Start of Period	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22
Ending Market Value	33,615,539	35,059,695	34,474,900	36,030,271	36,438,632	36,710,697	35,783,036	35,249,681	34,862,649	34,321,691	33,723,858	32,342,078	33,539,078
Beginning Market Value	33,118,359	33,615,539	35,059,695	34,474,900	36,030,271	36,438,632	36,710,697	35,783,036	35,249,681	34,862,649	34,321,691	33,723,858	32,342,078
Asset Flows including	0	1,000,000	-4,620	2,000,000	0	-4,869	0	0	-4,892	0	0	-4,683	0
Inflows	0	2,000,000	0	4,000,000	0	0	0	0	0	0	0	0	0
Outflows	0	-1,000,000	0	-2,000,000	0	0	0	0	0	0	0	0	0
Net Non-Investment Flows	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes	0	0	-4,620	0	0	-4,869	0	0	-4,892	0	0	-4,683	0
Flow Adjusted Value Change	497,180	444,156	-580,175	-444,629	408,361	276,934	-927,660	-533,356	-382,140	-540,958	-597,833	-1,377,097	1,197,000
■ Portfolio Return – net	1.50%	1.29%	-1.65%	-1.24%	1.13%	0.76%	-2.53%	-1.49%	-1.08%	-1.55%	-1.74%	-4.08%	3.70%
— Cumulative Portfolio Return	1.50%	2.81%	1.11%	-0.15%	0.99%	1.75%	-0.82%	-2.30%	-3.36%	-4.86%	-6.51%	-10.33%	-7.01%



2.2. Contribution Analysis

Multi-Period Contribution by Asset Category in % as of 31.7.2022

	Month To Date	Quarter To Date	Year To Date	1 Year	Current Period
Liquidity & Similar Investments	-0.01	-0.01	-0.29	-0.58	-0.01
Fixed Income & Similar Investments	1.66	1.66	-4.33	-5.50	1.66
Equities & Similar Investments	1.75	1.75	-2.88	-1.76	1.75
Alternative Investments, Commodities & Real Estate	0.30	0.30	-1.11	-0.54	0.30
Total – net ***	3.70	3.70	-8.61	-8.39	3.70

Multi-Period Contribution by Currency in % as of 31.7.2022

	Month To Date	Quarter To Date	Year To Date	1 Year	Current Period
AUD - Australian Dollar	3.18	3.18	-6.73	-7.11	3.18
USD - US Dollar	0.29	0.29	-1.01	-0.71	0.29
EUR - Euro	0.20	0.20	-0.71	-0.42	0.20
JPY - Japan Yen	0.03	0.03	-0.17	-0.17	0.03
GBP - Pound Sterling	-	-	0.01	0.02	-
Total – net ***	3.70	3.70	-8.61	-8.39	3.70

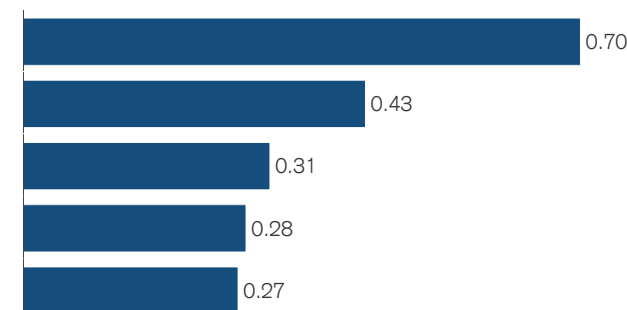
*** If applicable, fees charged in the relevant currency will be deducted from the cash account contribution, which is part of the Liquidity & Similar Investments asset category.

2.3. Contribution - Top Contributors & Detractors

Top Contributors in %

as of 31.7.2022

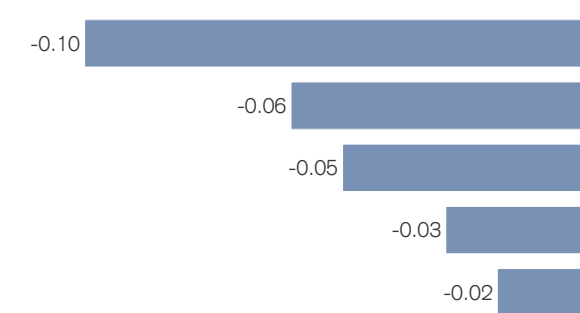
	Total Return	Average Weight	Contribution
UNITS WESTERN ASSET AUSTRALIAN BOND FUND CLASS -A-	3.66	19.27	0.70
UNITS PERPETUAL ACTIVE FIXED INTEREST FUND	3.32	12.93	0.43
UNITS SPDR S&P/ASX 200 LISTED PROPERTY FUND	11.09	2.99	0.31
UNITS SPDR S&P/ASX 200 FUND ETF AUSTRALIAN EQUITY EXCHANGE TRADED FUNDS	8.79	3.25	0.28
ACCUM SHS -1C- USD XTRACKERS (IE) PLC - XTRACKERS MSCI USA UCITS ETF	6.58	4.25	0.27
Total – net ***		42.70	2.00



Top Detractors in %

as of 31.7.2022

	Total Return	Average Weight	Contribution
REGISTERED SHS BHP GROUP LTD	-6.23	1.48	-0.10
SHS ISHARES ESG AWARE MSCI EM ETF	-2.92	1.99	-0.06
UBS USD ETC ON UBS BLOOMBERG CMCI COMPOSITE INDEX (TCMCI) 2007 - OPEN ENDED	-3.46	0.73	-0.05
REGISTERED SHS RIO TINTO LTD	-4.74	0.49	-0.03
REGISTERED SHS NEWCREST MINING LTD	-7.61	0.27	-0.02
Total – net ***		4.96	-0.26



*** If applicable, fees charged in the relevant currency will be deducted from the cash account contribution, which is part of the Liquidity & Similar Investments asset category.

3. Positions

3.1. Investment Related Positions

as of 31.7.2022

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %	
Liquidity & Similar Investments								
Accounts								
AUD	913,216.80	Current Account -20300003970945 AUD Portfolio: 3000039-70	1.0000		913,217			
					2.72%			
EUR	74,761.67	Current Account -20300003970056 AUD Portfolio: 3000039-70	1.0000 1.4897 EUR/AUD		109,090	-2,285	-2.05%	
					0.33%	-2,285	-2.05%	
GBP	6.99	Current Account -20300003970089 AUD Portfolio: 3000039-70	1.0000 1.8598 GBP/AUD		12	-1	-6.23%	
						-1	-6.23%	
USD	104,991.40	Current Account -20300003970780 AUD Portfolio: 3000039-70	1.0000 0.6847 AUD/USD		149,576	-3,768	-2.46%	
					0.45%	-3,768	-2.46%	
Total Liquidity & Similar Investments					1,171,895	0	3.49%	
Fixed Income & Similar Investments								
Fixed Income & Similar Investments AUD								
AUD	865,962.39	UNITS -D- ISHARES AUSTRALIAN BOND INDEX FUND AUD Portfolio: 3000039-70	AU60BGL01056 2244170	1.0394	0.9433 NAV 29.07.2022	816,899	-83,215 -83,215	-9.24% -9.24%
					2.44%			

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %
AUD 4,587,718.7008	UNITS PERPETUAL ACTIVE FIXED INTEREST FUND AUD Portfolio: 3000039-70	AU60PER02627 35661784	1.0475	0.9428 NAV 29.07.2022	4,325,109 12.90%	-480,519 -480,519	-10.00% -10.00%
AUD 5,547,398.5653	UNITS WESTERN ASSET AUSTRALIAN BOND FUND CLASS -A- AUD Portfolio: 3000039-70	AU60SSB01221 2248336	1.2576	1.1638 NAV 29.07.2022	6,455,896 19.25%	-520,363 -520,363	-7.46% -7.46%
AUD 49,678	SHS -I- AUD NEUBERGER BERMAN INVESTMENT FUNDS PLC - NEUBERGER BERMAN EMERGING MARKET DEBT - HARD CURRENCY FUND AUD Portfolio: 3000039-70	IE00B986FB81 53616359	10.6287	7.8400 NAV 29.07.2022	389,476 1.16%	-138,537 -138,537	-26.24% -26.24%
AUD 338,211	SHS -L3- HEDGED AUD FEDERATED HERMES INVESTMENT FUNDS PLC - FEDERATED HERMES GLOBAL HIGH YIELD CREDIT FUND AUD Portfolio: 3000039-70	IE00BMZ15N91 57259812	3.0819	2.7071 NAV 29.07.2022	915,571 2.73%	-126,769 -126,769	-12.16% -12.16%
AUD 9,599	UNITS SHS HEDGED AUD MUZINICH FUNDS - MUZINICH EMERGING MARKET CORPORATE DEBT FUND AUD Portfolio: 3000039-70	IE00BNC55647 110844223	97.4683	79.8600 NAV 29.07.2022	766,576 2.29%	-169,022 -169,022	-18.07% -18.07%
AUD 11,116	SHS -CH- ROBECO CAPITAL GROWTH FUNDS SICAV - ROBECOSAM GLOBAL SDG CREDITS DISTRIBUTION AUD Portfolio: 3000039-70	LU2207422291 56320962	99.0605	85.7700 NAV 29.07.2022	953,419 2.84%	-147,737 -147,737	-13.42% -13.42%
AUD 9,119	SHS -EAH- CS INVESTMENT FUNDS 1 SICAV - CREDIT SUISSE (LUX) GLOBAL INFLATION LINKED BOND FUND DISTRIBUTION AUD Portfolio: 3000039-70	LU2407926216 114771252	100.0000	99.7600 NAV 29.07.2022	909,711 2.71%	-2,189 -2,189	-0.24% -0.24%

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %	
AUD	25,916	SHS -IX- NINETY ONE GLOBAL STRATEGY FUND SICAV - EMERGING MARKETS LOCAL CURRENCY TOTAL RETURN DEBT FUND DISTRIBUTION AUD Portfolio: 3000039-70	LU2445645851 117293159	19.9500	20.1200 NAV 29.07.2022	521,430 1.55%	4,406 4,406 0.85%	0.85%
AUD	8,374	SHS -S -AUD (QIDIV)- BLUEBAY FUNDS SICAV - BLUEBAY GLOBAL INVESTMENT GRADE CORPORATE BOND FUND DISTRIBUTION AUD Portfolio: 3000039-70	LU2457787914 118776845	100.0000	98.6400 NAV 29.07.2022	826,011 2.46%	-11,389 -11,389 -1.36%	-1.36%
Total Fixed Income & Similar Investments						16,880,098 0 50.33%		
Equities & Similar Investments								
Equities & Similar Investments AUD								
AUD	6,126	REGISTERED SHS AUSTRALIA & NEW ZEALAND BANKING GROUP LTD AUD Portfolio: 3000039-70	AU000000ANZ3 640139 ANZ.AX	28.2539	22.9000 CLO 29.07.2022	140,285 0.42%	-32,798 -32,798 -18.95%	-18.95%
AUD	39,898	REGISTERED SHS ALUMINA LTD AUD Portfolio: 3000039-70	AU000000AWC3 1526402 AWC.AX	1.8361	1.5400 CLO 29.07.2022	61,443 0.18%	-11,813 -11,813 -16.13%	-16.13%
AUD	34,858	REGISTERED SHS AURIZON HOLDINGS LTD AUD Portfolio: 3000039-70	AU000000AZJ1 20175896 AZJ.AX	4.5903	4.0200 CLO 29.07.2022	140,129 0.42%	-19,879 -19,879 -12.42%	-12.42%
AUD	12,758	REGISTERED SHS BHP GROUP LTD AUD Portfolio: 3000039-70	AU000000BHP4 640390 BHP.AX	32.9558	38.6800 CLO 29.07.2022	493,479 1.47%	73,030 73,030 17.37%	17.37%

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %
AUD	3,471 REGISTERED SHS CARSALES.COM LTD AUD Portfolio: 3000039-70	AU000000CAR3 10476764 CAR.AX	16.7162	20.6500 CLO 29.07.2022	71,676 0.21%	13,654 13,654	23.53% 23.53%
AUD	2,870 REGISTERED SHS COMMONWEALTH BANK OF AUSTRALIA AUD Portfolio: 3000039-70	AU000000CBA7 646758 CBA.AX	81.5356	100.7700 CLO 29.07.2022	289,210 0.86%	55,203 55,203	23.59% 23.59%
AUD	6,140 REGISTERED SHS COMPUTERSHARE LTD AUD Portfolio: 3000039-70	AU000000CPU5 241285 CPU.AX	16.0032	24.9800 CLO 29.07.2022	153,377 0.46%	55,118 55,118	56.09% 56.09%
AUD	1,173 REGISTERED SHS CSL LTD AUD Portfolio: 3000039-70	AU000000CSL8 241548 CSL.AX	178.5819	289.8400 CLO 29.07.2022	339,982 1.01%	130,506 130,506	62.30% 62.30%
AUD	2,504 REGISTERED SHS FLIGHT CENTRE TRAVEL GROUP LTD AUD Portfolio: 3000039-70	AU000000FLT9 90307 FLT.AX	19.0671	17.2200 CLO 29.07.2022	43,119 0.13%	-4,625 -4,625	-9.69% -9.69%
AUD	849 CHESS UNITS OF FOREIGN SECURITIES JAMES HARDIE INDUSTRIES PLC AUD Portfolio: 3000039-70	AU000000JHX1 1303670 JHX.AX	27.0838	35.2000 CLO 29.07.2022	29,885 0.09%	6,891 6,891	29.97% 29.97%
AUD	330 REGISTERED SHS MACQUARIE GROUP LTD AUD Portfolio: 3000039-70	AU000000MQG1 3422370 MQG.AX	85.9818	181.1300 CLO 29.07.2022	59,773 0.18%	31,399 31,399	110.66% 110.66%
AUD	8,982 REGISTERED SHS NATIONAL AUSTRALIA BANK LTD AUD Portfolio: 3000039-70	AU000000NAB4 641643 NAB.AX	24.5148	30.6000 CLO 29.07.2022	274,849 0.82%	54,657 54,657	24.82% 24.82%

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss		P/L Unreal. in % Instr. in % FX in %
						Unrealized in AUD of which Instrument of which Forex		
AUD	4,479 REGISTERED SHS NEWCREST MINING LTD AUD Portfolio: 3000039-70	AU000000NCM7 650853 NCM.AX	27.6429	19.3000 CLO 29.07.2022	86,445 0.26%	-37,368 -37,368	-30.18% -30.18%	
AUD	27,933 REGISTERED SHS NINE ENTERTAINMENT CO. HOLDINGS LTD AUD Portfolio: 3000039-70	AU000000NEC4 22858707 NEC.AX	2.7241	2.0600 CLO 29.07.2022	57,542 0.17%	-18,551 -18,551	-24.38% -24.38%	
AUD	9,661 REGISTERED SHS ORIGIN ENERGY LTD AUD Portfolio: 3000039-70	AU000000ORG5 1051439 ORG.AX	7.5195	5.9400 CLO 29.07.2022	57,386 0.17%	-15,259 -15,259	-21.01% -21.01%	
AUD	10,278 REGISTERED SHS QANTAS AIRWAYS LTD AUD Portfolio: 3000039-70	AU000000QAN2 390413 QAN.AX	5.6657	4.5600 CLO 29.07.2022	46,868 0.14%	-11,364 -11,364	-19.52% -19.52%	
AUD	8,445 REGISTERED SHS QBE INSURANCE GROUP LTD AUD Portfolio: 3000039-70	AU000000QBE9 641857 QBE.AX	11.6722	11.5300 CLO 29.07.2022	97,371 0.29%	-1,201 -1,201	-1.22% -1.22%	
AUD	1,646 REGISTERED SHS RIO TINTO LTD AUD Portfolio: 3000039-70	AU000000RIO1 603520 RIO.AX	76.5155	97.8300 CLO 29.07.2022	161,028 0.48%	35,084 35,084	27.86% 27.86%	
AUD	2,410 SHS RESMED INC CHESS DEPOSITORY INTERESTS REPR 1/10 SH AUD Portfolio: 3000039-70	AU000000RMD6 1058638 RMD.AX	23.6564	34.2100 CLO 29.07.2022	82,446 0.25%	25,434 25,434	44.61% 44.61%	
AUD	24,579 REGISTERED SHS SOUTH32 LTD 2,863 of which is pending settlement AUD Portfolio: 3000039-70	AU000000S320 27547963 S32.AX	2.9484	3.8100 CLO 29.07.2022	93,646 0.28%	21,178 21,178	29.22% 29.22%	

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %
AUD	92,105 UNITS SPDR S&P/ASX 200 LISTED PROPERTY FUND AUD Portfolio: 3000039-70	AU000000SLF1 1377855 SLF.AX	12.3314	11.7000 CLO 29.07.2022	1,077,629 3.21%	-58,159 -58,159	-5.12% -5.12%
AUD	17,978 UNITS SPDR S&P/ASX 200 FUND ETF AUSTRALIAN EQUITY EXCHANGE TRADED FUNDS AUD Portfolio: 3000039-70	AU000000STW9 1285707 STW.AX	66.1214	62.8800 CLO 29.07.2022	1,130,457 3.37%	-58,274 -58,274	-4.90% -4.90%
AUD	14,246 REGISTERED SHS TELSTRA CORPORATION LTD AUD Portfolio: 3000039-70	AU000000TLS2 720464 TLS.AX	4.5550	3.8900 CLO 29.07.2022	55,417 0.17%	-9,474 -9,474	-14.60% -14.60%
AUD	3,230 SHS VANGUARD MSCI AUSTRALIAN SMALL COMPANIES INDEX ETF EXCHANGE TRADED FUND AUD Portfolio: 3000039-70	AU000000VSO2 13053435 VSO.AX	60.3498	62.2900 CLO 29.07.2022	201,197 0.60%	6,267 6,267	3.21% 3.21%
AUD	9,974 REGISTERED SHS WESTPAC BANKING CORP AUD Portfolio: 3000039-70	AU000000WBC1 642372 WBC.AX	26.9089	21.5100 CLO 29.07.2022	214,541 0.64%	-53,849 -53,849	-20.06% -20.06%
AUD	1,031 REGISTERED SHS WESFARMERS LTD AUD Portfolio: 3000039-70	AU000000WES1 642397 WES.AX	34.0342	46.6300 CLO 29.07.2022	48,076 0.14%	12,986 12,986	37.01% 37.01%
AUD	3,593 REGISTERED SHS WORLEY LTD AUD Portfolio: 3000039-70	AU000000WOR2 1524357 WOR.AX	12.3553	14.3100 CLO 29.07.2022	51,416 0.15%	7,023 7,023	15.82% 15.82%
AUD	2,499 REGISTERED SHS WOOLWORTHS GROUP LTD AUD Portfolio: 3000039-70	AU000000WOW2 81350 WOW.AX	34.1257	37.5200 CLO 29.07.2022	93,762 0.28%	8,482 8,482	9.95% 9.95%

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD	Profit/ Loss	P/L
					of which Accrued Interest Proportion in %	Unrealized in AUD of which Instrument of which Forex	Unreal. in % Instr. in % FX in %
AUD	7,762 REGISTERED SHS COLES GROUP LTD AUD Portfolio: 3000039-70	AU0000030678 44059594 COL.AX	16.9597	18.7500 CLO 29.07.2022	145,538 0.43%	13,896 13,896	10.56% 10.56%
AUD	2,590 UNITS VANGUARD ETHICALLY CONSCIOUS AUST ETF EXCHANGE TRADED FUND AUD Portfolio: 3000039-70	AU0000103533 57145371 VETH.AX	58.0530	54.5400 CLO 29.07.2022	141,259 0.42%	-9,099 -9,099	-6.05% -6.05%
AUD	6,677 REGISTERED SHS WOODSIDE ENERGY GROUP LTD AUD Portfolio: 3000039-70	AU0000224040 119209424 WDS.AX	25.7078	31.9800 CLO 29.07.2022	213,530 0.64%	41,879 41,879	24.40% 24.40%
AUD	408 RIGHTS AUSTRALIA & NEW ZEALAND BANKING GROUP LTD 2022-15.08.22 FOR SHARES AUD Portfolio: 3000039-70	AU0000232860 120508722 ANZRss		3.9800 CLO 29.07.2022	1,624	1,624 1,624	
AUD	120,274.1238 UNITS WHEB SUSTAINABLE IMPACT FUND AUD Portfolio: 3000039-70	AU60HHA00072 4431395	1.5471	1.3856 BID 28.07.2022	166,652 0.50%	-19,424 -19,424	-10.44% -10.44%
AUD	45,147.8135 UNITS EIGER AUSTRALIAN SMALL COMPANIES FUND AUD Portfolio: 3000039-70	AU60HOW29675 112847137	1.7805	1.3694 NAV 29.07.2022	61,825 0.18%	-18,558 -18,558	-23.09% -23.09%
AUD	47,433.4328 UNITS PERENNIAL BETTER FUTURE TRUST AUD Portfolio: 3000039-70	AU60WPC56007 112127492	1.3598	1.2362 NAV 29.07.2022	58,637 0.17%	-5,864 -5,864	-9.09% -9.09%
Total Equities & Similar Investments AUD					6,441,498		
					0		
					19.21%		

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %
Equities & Similar Investments EUR							
EUR	5,893	SHS EUR ISHARES II PLC - ISHARES CORE MSCI EUROPE UCITS ETF AUD Portfolio: 3000039-70	IE00B1YZSC51 3246398 IQQY.DE	27.1155 1.5166 EUR/AUD	27.4850 CLO 29.07.2022	236,340 0.70%	-5,995 3,177 -9,173 -2.47% 1.36% -3.84%
EUR	7,210	ACCUM.PTG.SHS WELLINGTON MANAGEMENT FUNDS (IRELAND) PLC - WELLINGTON STRATEGIC EUROPEAN EQUITY FUND CLASS -N- UNHEDGED EUR AUD Portfolio: 3000039-70	IE00B9DPD161 20938626	15.8682 1.5372 EUR/AUD	22.3585 NAV 29.07.2022	235,224 0.70%	59,358 68,282 -8,924 33.75% 40.90% -7.15%
EUR	25,880	ACCUM SHS -1C- USD XTRACKERS(IE)PLC - XTRACKERS MSCI WORLD ESG UCITS ETF AUD Portfolio: 3000039-70	IE00BZ02LR44 41359963 XZWO.DE	27.7044 1.5414 EUR/AUD	29.4500 CLO 29.07.2022	1,112,126 3.32%	6,924 65,918 -58,995 0.63% 6.30% -5.67%
Total Equities & Similar Investments EUR					1,583,690	0	4.72%
Equities & Similar Investments JPY							
JPY	800	UNITS NEXT FUNDS NIKKEI 225 EXCHANGE TRADED FUND AUD Portfolio: 3000039-70	JP3027650005 1264151 1321.T	25,375.1038 81.6809 AUD/JPY	28,480.0000 CLO 29.07.2022	244,842 0.73%	-3,687 26,693 -30,380 -1.48% 12.24% -13.72%
Total Equities & Similar Investments JPY					244,842	0	0.73%
Equities & Similar Investments USD							
USD	8,712	ACCUM SHS -1C- USD XTRACKERS (IE) PLC - XTRACKERS MSCI USA UCITS ETF AUD Portfolio: 3000039-70	IE00BJ0KDR00 24268896 XD9U.L	105.7350 0.7245 AUD/USD	115.5800 CLO 29.07.2022	1,434,531 4.28%	163,027 122,193 40,835 12.82% 9.31% 3.51%

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %	
USD	2,629	ACCUM.PTG.SHS SSGA SPDR ETFS EUROPE II PLC - SPDR S&P U.S. TECHNOLOGY SELECT SECTOR UCITS ETF USD AUD Portfolio: 3000039-70	IE00BWBXM948 28805652 SXLK.L	67.3500 0.6729 AUD/USD	74.0050 CLO 29.07.2022	277,179 0.83%	14,055 24,926 -10,871	5.34% 9.88% -4.54%
USD	15,517	SHS -R (ACC.)- GOLDMAN SACHS FUNDS SICAV - GOLDMAN SACHS EMERGING MARKETS EQUITY PORTFOLIO CAPITALISATION AUD Portfolio: 3000039-70	LU0830622741 19578737	16.3327 0.7203 AUD/USD	14.5100 NAV 29.07.2022	320,763 0.96%	-31,084 -40,294 9,209	-8.83% -11.16% 2.33%
USD	1,985	SHS ISHARES GLOBAL HEALTHCARE ETF AUD Portfolio: 3000039-70	US4642873255 1352444 IXJ.P	86.8369 0.7294 AUD/USD	83.7400 CLO 29.07.2022	236,811 0.71%	504 -8,758 9,262	0.21% -3.57% 3.78%
USD	14,080	SHS ISHARES ESG AWARE MSCI EM ETF AUD Portfolio: 3000039-70	US46434G8630 33080862 ESGE.OQ	39.5584 0.7305 AUD/USD	32.0000 CLO 29.07.2022	641,892 1.91%	-120,595 -151,615 31,019	-15.82% -19.11% 3.29%
USD	566	TRUST UNITS SPDR S&P 500 ETF TRUST AUD Portfolio: 3000039-70	US78462F1030 45088 SPY.P	265.5437 0.7544 AUD/USD	411.9900 CLO 29.07.2022	332,210 0.99%	132,975 118,088 14,887	66.74% 55.15% 11.59%
Total Equities & Similar Investments USD						3,243,386 0 9.67%		
Total Equities & Similar Investments						11,513,417 0 34.33%		

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %
Alternative Investments, Commodities & Real Estate							
Hedge Funds							
AUD	276,039	UNITS PARTNERS GROUP GLOBAL VALUE FUND (AUD) WHOLESAL AUD Portfolio: 3000039-70	AU60ETL02762 26607292	2.1653	3.0725 NAV 30.06.2022	848,130 250,436 2.53%	41.90% 41.90%
AUD	541,964.01	UNITS BLACKROCK GLOBAL ALLOCATION FUND (AUST) CLASS -D- WHOLESAL AUD Portfolio: 3000039-70	AU60MAL00181 3379478	1.2351	1.1070 NAV 29.07.2022	599,962 -69,435 1.79%	-10.37% -10.37%
AUD	6,256	ACCUM SHS -I- HEDGED AUD PGIM FUNDS PLC - PGIM WADHWANI KEYNES SYSTEMATIC ABSOLUTE RETURN FUND AUD Portfolio: 3000039-70	IE00BKV41X02 54282717	106.6533	121.8850 NAV 29.07.2022	762,513 95,289 2.27%	14.28% 14.28%
AUD	1,941	SHS -D2 HEDGED- BLACKROCK STRATEGIC FUNDS SICAV - BLACKROCK EMERGING COMPANIES ABSOLUTE RETURN FUND CAPITALISATION AUD Portfolio: 3000039-70	LU2402058403 114466865	98.2200	79.7300 NAV 29.07.2022	154,756 -35,889 0.46%	-18.83% -18.83%
AUD	1,706	SHS -B- LUMYNA-MARSHALL WACE UCITS SICAV - LUMYNA - MW ESG (MARKET NEUTRAL) TOPS UCITS FUND CAPITALISATION AUD Portfolio: 3000039-70	LU2430035803 117027980	104.2953	103.8617 NAV 28.07.2022	177,188 -740 0.53%	-0.42% -0.42%
AUD	7,225	UNITS -D- BCV FUND (LUX) FCP - BCV LIQUID ALTERNATIVE BETA CAPITALISATION AUD Portfolio: 3000039-70	LU2487461068 119435425	99.8788	102.3500 NAV 29.07.2022	739,479 17,854 2.20%	2.47% 2.47%
Total Hedge Funds					3,282,027	0	9.79%

Number/ Nominal	Description	Identification ISIN Valoren Number Ticker	Cost Valuation Price Exchange Rate	Current Valuation Price/ Type Date	Value in AUD of which Accrued Interest Proportion in %	Profit/ Loss Unrealized in AUD of which Instrument of which Forex	P/L Unreal. in % Instr. in % FX in %
Commodities & Precious Metals							
USD	98	UBS USD ETC ON UBS BLOOMBERG CMCI COMPOSITE INDEX (TCMCI) 2007 - OPEN ENDED AUD Portfolio: 3000039-70	CH0031794263 3179426 TCMCI.S	1,372.5201 0.7353 AUD/USD	1,431.0000 BID 29.07.2022	199,791 0.60%	16,869 8,165 8,705 9.22% 4.26% 4.96%
Total Commodities & Precious Metals					199,791	0	0.60%
Real Estate							
AUD	17,781	STAPLED SECURITY GOODMAN GROUP AUD Portfolio: 3000039-70	AU000000GMG2 18079202 GMG.AX	11.0006	20.7000 CLO 29.07.2022	368,067 1.10%	172,465 172,465 88.17% 88.17%
AUD	57,574	STAPLED SECURITY MIRVAC GROUP AUD Portfolio: 3000039-70	AU000000MGR9 821911 MGR.AX	2.0391	2.1500 CLO 29.07.2022	123,784 0.37%	6,385 6,385 5.44% 5.44%
Total Real Estate					491,851	0	1.47%
Total Alternative Investments, Commodities & Real Estate					3,973,668	0	11.85%
Total Investments					33,539,078	100.00%	
of which Accrued Interest					0		

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, which are aggregated as Net Investment Asset Flows. Non-Investment Flows refer to transactions related to Non-Investment Related Positions such as loan transactions to finance such Non-Investment Related Positions. Non-investment Flows do not contribute to the performance of the 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.

Fees/ Taxes

Fees include management or safekeeping fees.

Taxes include value-added taxes and service related taxes, depending on country specific rules.

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-allocable Effect

As a general rule, in most cases the sum of all the return contributions usually equal the portfolio return figure indicated. In some cases, however, the two figures may not tally exactly (for example, due to rounding differences). These discrepancies are being accounted for and indicated as "Non-allocable effect" return contribution.

Non-Investment Related Positions

Non-Investment Related Positions refer to non-asset/ non-investment type positions such as those relating to insurance policies or mortgages. Guarantees, standby letters of credit, holdcovers or other credit instruments which have been issued by the Bank pursuant to facilities granted are reflected under the sub-section entitled "Pro Memoria 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.

Performance Calculation

The performance figures are calculated based on investment related positions using the TWR Daily method (Time Weighted Rate of Return), which is based on geometrically linking daily rates of return.

The start of period displayed for the performance calculation is referring to Beginning Market Value, which is the closing balance of the previous day. The end of period displayed is referring to Ending Market Value, which is the closing balance of the day.

The net of fees and gross of taxes return is calculated after deduction of fees and before deduction of taxes.

The cumulative return calculation is reset, every time when geometrically linking the rates of return would render distorted values. Such scenarios can happen when the market values fluctuate around zero.

Return values prior 2015 displayed in this report might be different from previously reported return values.

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.

For realized profit and loss for FX Spots, Forwards and Swaps (including all currencies and Precious Metals) in Transactions section, in the 'Execution of FX Purchase' and 'Execution of FX Sales' rows, the value in the realized Profit/Loss column is calculated by comparing the Transaction Valuation based on the end of day exchange rate on the Value Date against the Cost Valuation based on the FX contract rate; this does not mean that the Profit/Loss for that transaction can be or has been cashed out.

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.

For unrealized profit and loss for Precious Metal Account and Current Account in Position Section, where there have been FX Spots, Forwards and Swaps transactions (including all currencies and Precious Metals), the Cost Valuation exchange rate is calculated based on the weighted average end of day exchange rate on respective transactions' value date. The value

in the unrealized Profit/Loss column is calculated by comparing the Current Valuation (based on conversion rates stated in the statement) as of reporting date against Cost Valuation.

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.

Return contribution

The contribution figure refers to the contribution of an individual asset category and/or currency to the overall performance on a portfolio level. The figure is calculated based on investment related positions using the TWR Daily method (Time Weighted Rate of Return), the return is computed by aggregating the daily returns.

Reference to the average weight of an instrument is computed by dividing the aggregated daily instrument weight by the number of days in the reporting period. The daily weight of an instrument is calculated by dividing the instrument's start of day market value and cash flow by the portfolio's start of day market value and cash flow.

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 31.7.2022

AUD 1.0000 = JPY 93.0560

AUD 1.0000 = USD 0.7019

EUR 1.0000 = AUD 1.4592

GBP 1.0000 = AUD 1.7436

4.2. Legal Information

This ad-hoc investment report is a statement of account provided to you upon your request and in accordance with and subject to the Account Opening Terms and Conditions.

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For All:

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 prices reflected for instruments and other information detailed within this ad-hoc investment report are attained or derived by the Bank from market data sources believed to be reliable, however the Bank does not make any representation as to the accuracy or completeness of such prices or information. In the absence of reliable market reference prices, the Bank may assign a nominal value or make an appropriate comment on the ad-hoc investment report. As a result, this ad-hoc 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.

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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.

The Bank will, at the time of printing this ad-hoc 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 by the Bank in this ad-hoc investment report will not always reflect the price indications available on the last business day of the reporting period 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 Relationship Manager if you need further information on the FX conversion rate applied in relation to your CNY positions.

Please note that financial institutions have transitioned away from certain London Interbank Offered Rates (LIBORs) to alternative reference rates (ARRs) and are preparing to transition away from the remaining USD LIBOR tenors (other than USD LIBOR 1w and 2m) before end of June 2023. This may affect products issued by Credit Suisse or third parties in your portfolio. Please refer to our Credit Suisse IBOR website www.credit-suisse.com/IBOR for more information, or reach out to your Credit Suisse Relationship Manager with any questions you may have.

Please be aware that the financial industry's transition away from LIBOR interest rate benchmarks may have had or may have an impact on valuations of OTC derivative transactions, as the inputs that Credit Suisse uses to calculate valuations may have changed or may change.

If you have any credit facilities in place with the Bank, please note that potentially all of the assets detailed within this ad-hoc investment report may be held as collateral for those facilities. If you have any questions in relation to the collateral for your facility, please contact your Relationship Manager.

The information in this ad-hoc 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.

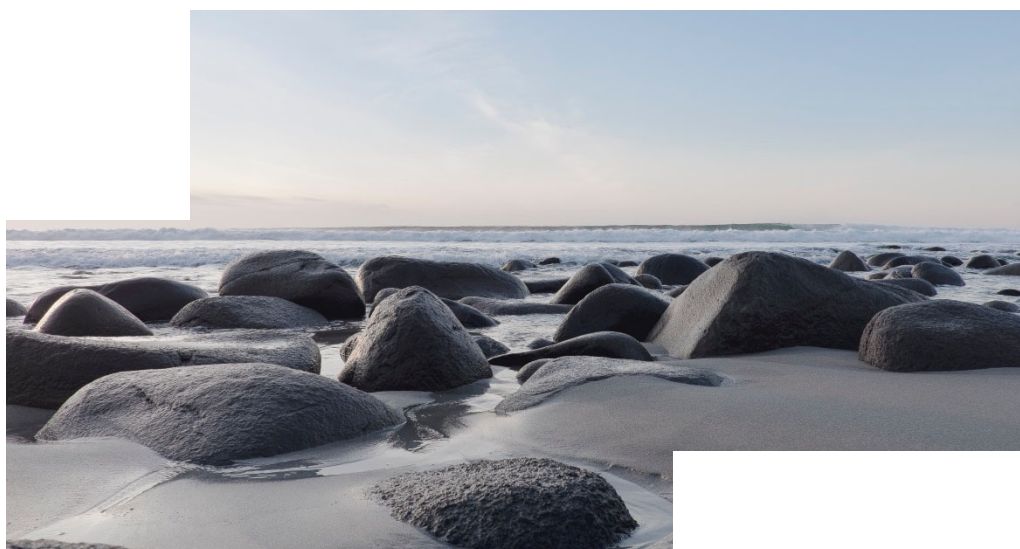
The fee charged for the provision of the Bank's Advisory Service (referring to portfolio(s) ending with -30 to -39) is a Flat Fee notwithstanding that prior to June 2017 the fee may have been described as a Management Fee or All-In Fee in statements or documents received by the client whether by hardcopy, email, Internet Banking or any other form of delivery.

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

APNIC Monthly Commentary



Summary

- The APNIC portfolio was indicatively up 3.70% in July
- Global equities advanced +6.32% in AUD terms driven by a positive US reporting season
- Australian equities gained 5.75%
- Bond yields fell as inflation expectations moderated

Market Commentary

Equity markets rebounded in July, driven by a positive US reporting season and US GDP contraction which softened investor expectations of the steepness of future rate hikes. Despite commodities being weaker, a stronger AUD partially offset some of the gains from international equities for Australian investors. In AUD terms, US, Europe, Emerging Markets and Australian equities returned 8.26%, 3.68%, -1.19% and 5.75% respectively. Australia remained among the most resilient equity markets outperforming most of the major global benchmarks in July. In bond markets, yields fell off the back of moderating inflation expectations after softer economic releases in the US.

The starting point for the Australian economy remains strong, but at their July meeting, the RBA hiked the cash rate by 0.50% and significantly lowered forecasts for real GDP growth as higher rates suppress consumer consumption. Reflecting the RBA's hawkish stance, they materially lifted their headline CPI forecasts as the RBA's trimmed mean printed at 4.9%YoY for the June quarter, up from 3.7% from March. While normalising monetary conditions was not a "pre-set path", the board places a high priority on the return of inflation to the 2-3% range over time while keeping the economy on an even keel. Despite record low unemployment, the impact of higher rates has been stronger than expected. A fall in house prices, subdued consumer sentiment point all to a weaker growth outlook in the near term though high household savings will help cushion the impact. Looking ahead, focus now turns to the Australian corporate earnings season to see how inflation and rate hikes will impact company earnings.

US economic data was mixed. US ISM Manufacturing PMI printed at 52.8 in July, down

from 53.0 in June as new orders continued to contract and supplier deliveries slowed. The first estimate of real US GDP for 2Q, showed a contraction of -0.9% QoQ as one-off inventory building weighed on GDP growth over the June quarter. In contrast, the labour market continues to be a source of strength as US unemployment rate fell to a new cycle low of 3.5%. Inflation remains elevated as US Core PCE Inflation printed at 4.8% YoY and suggests the inflation breadth remains a chief concern for the Fed. As widely expected, the Fed delivered a 75bp hike in July yet, equity markets responded positively perhaps as Fed chair Powell suggested that policy had moved to a more neutral setting and that going forward, rate decisions will be on a “meeting-by-meeting” basis. Judging from July’s rebound, the market appears to have interpreted these comments to mean that the pace of hikes is likely to slow especially as US GDP slows. With that said, the shift has now turned to the growth risks to the global economy as escalating signs of trouble begin to emerge as weaker consumer confidence and spending begin to flow through.

European economic activity was weaker in July as the region contends with ongoing geo-political tensions, rising inflation and an energy crisis with no clear resolution. The Eurozone Markit Manufacturing Index PMI printed at 49.8 in July, down from 52.1 observed in June pointing to the first contraction in factory activity since June 2020. Output and new orders decreased as manufacturing expectations worsen to such an extent, that more firms are expected to cut output than increase production in the coming year. In a worrying sign of a broadening in inflationary pressure, the Euro Area Core inflation surprised to the upside again and printed at 4.0% for July up from 3.7% in June, driven by higher services and good inflation. However, Eurozone Q2 GDP grew by 0.7% QoQ, above expectations, as strong tourism provided a boost in Q2 activity. With that said, the downside risks Eurozone economic growth has increased as low Russian energy deliveries, weaker manufacturing output and depressed consumer consumption, increase the likelihood of the region falling into recession.

After a solid rebound in June, China’s economy dipped again in July. News on mortgage boycotts, record heat and rainfall and more lockdowns caused by a rise in new COVID-19 cases wreaked havoc on economic activities. The Caixin Manufacturing PMI plunged to 50.4 in July, down from 51.7 in June caused by a fall in new orders and output. While growth momentum did slow, and parts of the economy, especially the property sector look vulnerable, the Chinese economy as a whole remains on the mend from the trough in 2Q2022. China’s leaders are committed to ongoing policy support aimed at accelerating investment activities in the infrastructure and exports sector.

In the local market, the top performing sectors were Information Technology (+15.36%), Real Estate (+12.08%) and Financials (+9.30%) while Materials (-0.63%), Energy (+2.11%) and Utilities (3.13%) were the worst performers.

Market Value as at 31 July 2022

	Market Value
APNIC Portfolio	A\$33,539,078

Performance as of 31 July 2022

APNIC Portfolio				
	Portfolio	Benchmark	Relative	CPI + 2.5%
Month	3.70%	3.72%	-0.02%	0.72%
3 Months	-2.26%	-1.30%	-0.96%	2.08%
Year To Date	-8.61%	-7.34%	-1.27%	4.41%
1 Year	-8.39%	-6.67%	-1.72%	6.94%
3 Years pa	0.38%	1.34%	-0.96%	4.81%
Since Inception pa	4.09%	4.52%	-0.43%	4.56%

* Performance is after fees but before franking. Inception is September 2013.

Positive Contributors to Performance

Australian stocks performing well included:

Goodman Group (+16.0%)

Investor rotation into long duration growth stocks led to a rally in the region’s leading industrial property developer and manager. Confidence in the group’s outlook also improved following a positive earnings report from Prologis a US based competitor. Management feedback from Prologis highlighted continued strong industrial property demand reflecting powerful structural trends despite a cyclical normalisation as pandemic effects on ecommerce fade and economic growth slows down.

Nine Entertainment (+12.9%)

The share price of Australia’s leading media group rebounded from a significant sell off as concerns on potential weakness in advertising spending eased. Although there have been mixed signals on recent advertising trends the group has performed well during the last quarter reflecting growth in free to air television spending and gains in market share. A rebound in the Domain share price was also reflected in an improved Nine valuation given its 60% equity interest.

Carsales.com (+12.3%)

The group completed its acquisition of the US based Trader Interactive during the month at a total cost of USD809m. The associated capital raising of \$1.2bn was well supported given management had an opportunity to improve its confidence in the business through its initial 49% equity interest acquired in 2021. Trader Interactive offers a significant growth opportunity in the US market where it has good positions in advertising for recreational vehicles, motorcycles and trucks. The domestic business continues to perform well with management confirming market forecasts for its FY22 result.

Negative Contributors to Performance

Australian stocks underperforming included:

Newcrest Mining (-7.6%)

The gold mining sector has been impacted by lower gold prices, rising production costs and production shortfalls. The Newcrest share price was also impacted during the month by a sell down from a major institutional investor. From an operational perspective the company performed better than peers in the June quarter achieving targeted improvement in production with cost performance that was better than consensus expectations. Management will provide an assessment of cost inflation risks and mitigation strategies with their August financial report.

BHP (-6.2%)

Weaker prices for iron ore, coking coal and copper during the month led to a softer share price. These near-term trends reflect demand weakness in China given a slow rebound from covid lockdowns and ongoing difficulties in the real estate market. The group broadly achieved its June quarter cost and production guidance and guided to modest improvement in volumes in FY23 outside of iron ore where a flat outcome is expected.

QBE Insurance (-5.1%)

The decline in bond yields represents a modest headwind for the group given the potential to reduce improving earnings from its investment portfolio. The company also announced a need to remediate policy pricing problems in Australia that occurred over several years requiring a provision of USD75m.

Asset Allocation

Asset Class	Tactical Position
Cash	Neutral
Bonds	Neutral
Australian Equities	Neutral
International Equities	Overweight
Alternative Investments	Underweight

Outlook

The Global Investment Committee (GIC) continues to navigate a challenging macroeconomic environment. Asset prices have begun to reflect a shift in focus from inflation and central bank hawkishness to growth risks. Equities remain highly volatile, with cyclical sectors like energy, and commodities, one of the most growth sensitive asset classes, retracing off their recent highs. With that said, bond yields have fallen, driving positive returns as the market becomes more comfortable that a peak in yields is close, with bonds now seen as a good hedge against growth risks. Inflation remains elevated and a confirmation of peak inflation in the US might be months away posing the risk that should central banks stay too focused on headline instead of core inflation, further policy tightening is pushed at a time when growth weakens, increasingly the likelihood of a recession. Europe faces a growing list of challenges, political instability in Italy, a continued energy crisis and record high inflations all weighs on sentiment. The GIC concludes that while the growth outlook has weakened and the risk of recession has increased, it is not out base case. We believe we are appropriately positioned for the current backdrop and remain alert as events unfold, and ready to act as opportunities arise.

Data Sources

Credit Suisse, unless otherwise specified.

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APNIC Portfolio Review



September 2022

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Key Highlights – Market Commentary

- Equity markets rebounded in July and in early August too. The rally from the mid-June lows was impressive but short-lived as markets fell in the second half of August, primarily due to the hawkish commentary from the Chairman of the US Federal Reserve after the Jackson's Hole Economic Policy Symposium of central banks.
- Australia remains among the most resilient equity markets calendar year to date outperforming most of the major global benchmarks. The starting point for the Australian economy remains strong, but at their July and September meetings, the Reserve Bank of Australia (RBA) hiked the cash rate by 0.50% and significantly lowered forecasts for real GDP growth. While normalising monetary conditions is not a "pre-set path", the RBA places a priority on the return of inflation to the 2-3% range while keeping the economy on an even keel. Despite record low unemployment, the impact of higher rates is being felt in a fall in house prices and subdued consumer sentiment pointing to a weaker growth outlook. Looking ahead, focus now turns to Australian corporate earnings to see how inflation and rate hikes will impact company earnings.
- US economic data remains mixed. US ISM Manufacturing Purchasing Manager Index (PMI) printed at 52.8 in July, down from 53.0 in June, as new orders continued to contract and supplier deliveries slowed. The first estimate of real US GDP for the second quarter, showed a contraction of -0.9% Quarter on Quarter (QoQ). Inflation remains elevated, yet the labour market continues to be a source of strength as the US unemployment rate fell to 3.5%. As widely expected, the Fed delivered a 75bp hike in July and continues to tighten monetary policy indicating that it wants to move the Fed Funds Rate above the "neutral" rate in the short term.
- European economic activity remains weak as the region contends with ongoing geo-political tensions, rising inflation and an energy crisis with no clear resolution. The Eurozone Markit Manufacturing Index PMI printed at 49.8 in July, down from 52.1, pointing to the first contraction in factory activity since June 2020. Output and new orders decreased as manufacturing expectations worsen. In a worrying sign of inflation, the Euro Area Core inflation surprised to the upside and printed at 4.0% for July up from 3.7% in June, driven by higher services and goods inflation. However, Eurozone Q2 GDP grew by 0.7% QoQ, above expectations, as strong tourism provided a boost in Q2 activity. With that said, downside risks to growth have increased as low Russian energy deliveries, weaker manufacturing output and depressed consumer consumption, increase the likelihood of the region falling into recession.
- After a solid rebound in June, China's economy dipped again in July. Mortgage boycotts, record heat and rainfall and more lockdowns caused by a rise in new COVID-19 cases reduced economic activity. The Caixin Manufacturing PMI fell to 50.4 in July, down from 51.7 in June caused by a fall in new orders and output. While growth momentum did slow, and parts of the economy, especially the property sector look vulnerable, the Chinese economy as a whole remains on the improve. China's leaders are committed to ongoing policy support aimed at accelerating investment activities in the infrastructure and exports sector.

Performance*

APNIC Portfolio

Yield Strategy

Portfolio Value End August A\$33,170,989

APNIC Portfolio				
	Portfolio	Benchmark	Outperformance	CPI + 2.5%
August	-1.14%	-1.32%	+0.18%	0.72%
3 Months	-1.63%	-1.32%	-0.31%	2.17%
Year To Date	-9.62%	-8.58%	-1.04%	5.16%
1 Year	-10.56%	-9.11%	-1.45%	7.15%
5 Years pa	3.11%	3.47%	-0.36%	4.71%
Since Inception** pa	3.93%	4.32%	-0.39%	4.60%

*Performance is after fees but before franking

**Inception September 2013

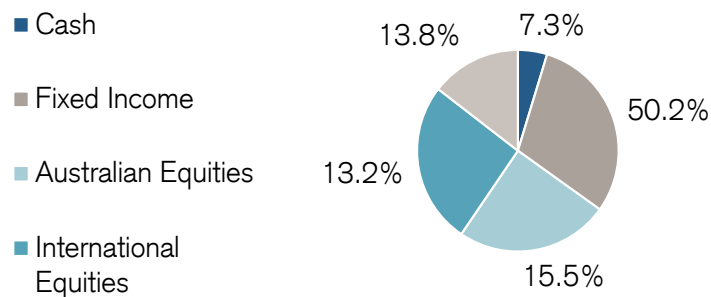
Performance Comments

- Calendar year to date, Australian equity stock selection and an active exposure (overweight) to commodities has contributed to relative performance with strong upward moves in commodities and energy prices during the year.
- An overweight to global equities between March and mid-August detracted from relative performance. However, a weaker Australian dollar supported the absolute return from the asset class.
- For fixed income, Australian bonds have fallen calendar year to date as yields have risen sharply. The asset class has slightly detracted from relative performance as credit spreads have widened as investors positioned for higher uncertainty within the economy. The portfolio has been overweight credit exposure within the fixed income asset class, so this has hurt relative performance.
- Hedge Funds detracted from relative performance as many hedge funds have underperformed calendar year to date in the challenging market environment. The portfolio remains underweight hedge funds.

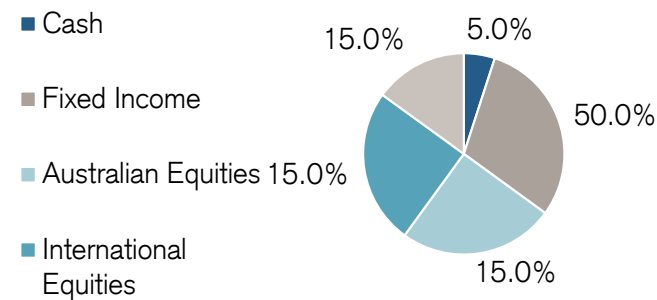
Asset Allocation Global Yield & Outlook

- The portfolio is currently defensively positioned with an overweight allocation to cash, a neutral allocation to bonds, and importantly, an underweight position in equities and alternative investments.
- An equities rally in July, spurred on by hopes that central banks could slow down and eventually even reverse their rate hikes once inflation rates hit a peak, was impressive but short-lived. The Credit Suisse Global Investment Committee (GIC) used this rally to reduce equity allocations in portfolios from overweight to neutral during August. Since then, and following the Jackson's Hole Economic Policy Symposium of central banks, we think that markets now face considerably more pressure. Investors are now confronted with an environment of slowing growth, rising probability of recession, elevated inflation and – after the Jackson Hole Symposium – central banks that are determined to hike interest rates. We believe that the next few months are likely to be challenging as markets adjust to this new reality. Risks are skewed to the downside in our view and that is why we have decided to reduce the tactical position for equities further to underweight within the APNIC portfolio as we believe that with the likely economic slowdown, corporate earnings will come under pressure in the medium term.
- The Global Investment Committee also recently revised its stance from underweight to neutral on government bonds which is a further reflection of this overall defensive positioning within the portfolio given that government bonds traditionally outperform in a period of slowing corporate earnings.

Current Asset Allocation



Yield Asset Allocation



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Presentation to APNIC



August 2022

Prepared by Patrick Armitage, CFA

Executive Summary

Risk Profiling

The core of our investment process is the consideration of risk and the appropriate positioning for APNIC's portfolio by way of our Strategic Asset Allocation (SAA). This presentation outlines the SAA process and provides guidelines for our investment profiles so that APNIC can make an informed decision regarding the appropriate risk profile for APNIC.

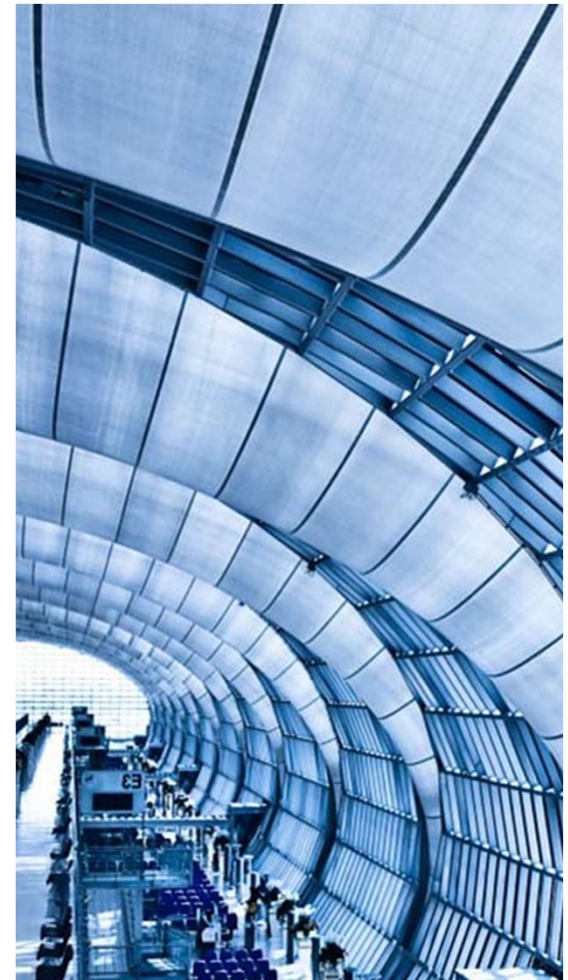
An investor's recommended risk profile is determined by the ability to cope with financial losses (risk ability) and the way the investor emotionally deals with investment risks (risk tolerance).

We currently have APNIC's risk profile recorded as Moderate which translates to a recommended Yield oriented portfolio, which is how APNIC's portfolio is currently invested.

Every four years, we ask APNIC to confirm that this risk profile remains appropriate given APNIC's investment objectives, investment time horizon and liquidity requirements.

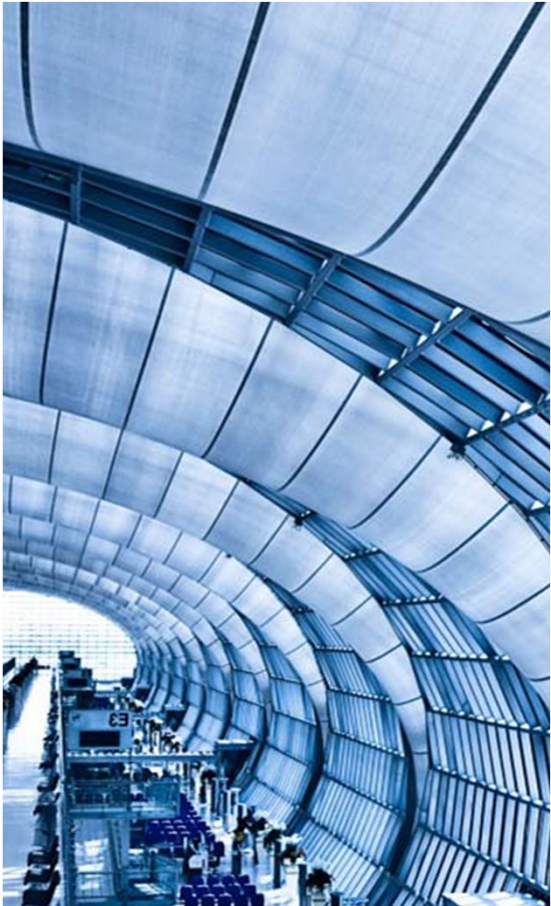
To determine this, we have set out the relevant questions below for APNIC to consider, plus the relevant profile returns and risk metrics (as highlighted by the specific historical draw downs for each profile).

We have also included questions regarding Responsible Investing and what sustainable investing framework APNIC may want within the portfolio.



Executive Summary

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Investment Philosophy and Approach



Our Investment Philosophy

A Principled Approach to Investing

Our five core investment beliefs are principles that help guide us and our clients through all types of economic and financial market cycles:

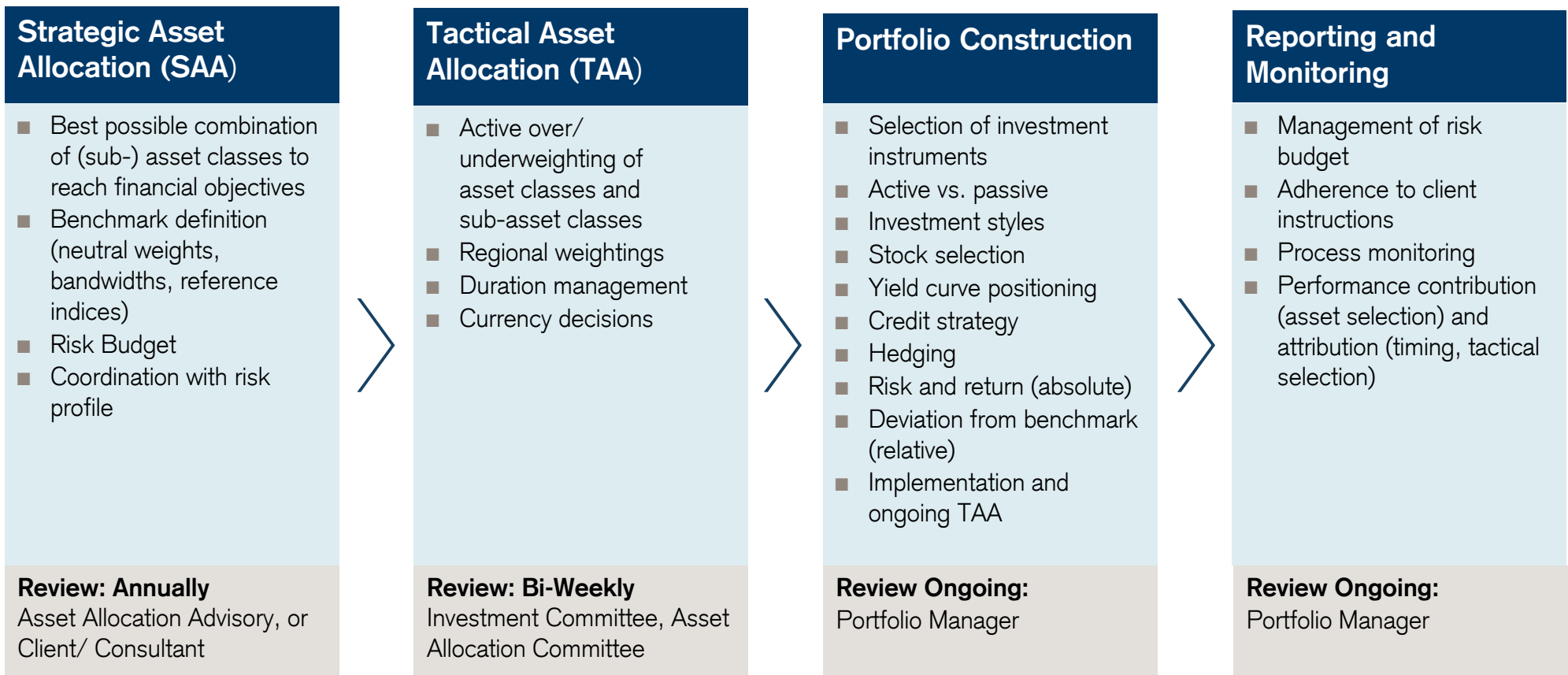
1. Meeting a client's investment **needs and objectives**
2. Having a **long-term investment horizon**
3. Using the advantages of **diversification**
4. Harvesting **risk premiums**
5. Maintaining a **disciplined investment process**



Our Investment Philosophy

The Structured Investment Process

Once the clients needs and objectives are fully understood, the investment process follows four stages:



Strategic Asset Allocation



Strategic Asset Allocation

Focus on the Essentials

82%

of portfolio performance is determined by the **personal investment strategy**.

Timing and **security selection** account for less than **14%** of performance.

A number of **minor reasons** account for the other **4%** of portfolio performance.

For illustrative purposes only.

Source: Wolfgang Drobetz and Friederike Köhler, The Contribution of Asset Allocation Policy to Portfolio Performance pages 219–233, in: Financial Markets and Portfolio Management, volume 16, number 2, 2002.

Strategic Asset Allocation

The Cornerstone of Our Advice

At Credit Suisse, the cornerstone of our investment advice is the Strategic Asset Allocation (SAA). We use the Strategic Asset Allocation to express our asset allocation advice, and importantly, it serves as a preliminary discussion point to further customise solutions to specifically meet a client's investment requirements.

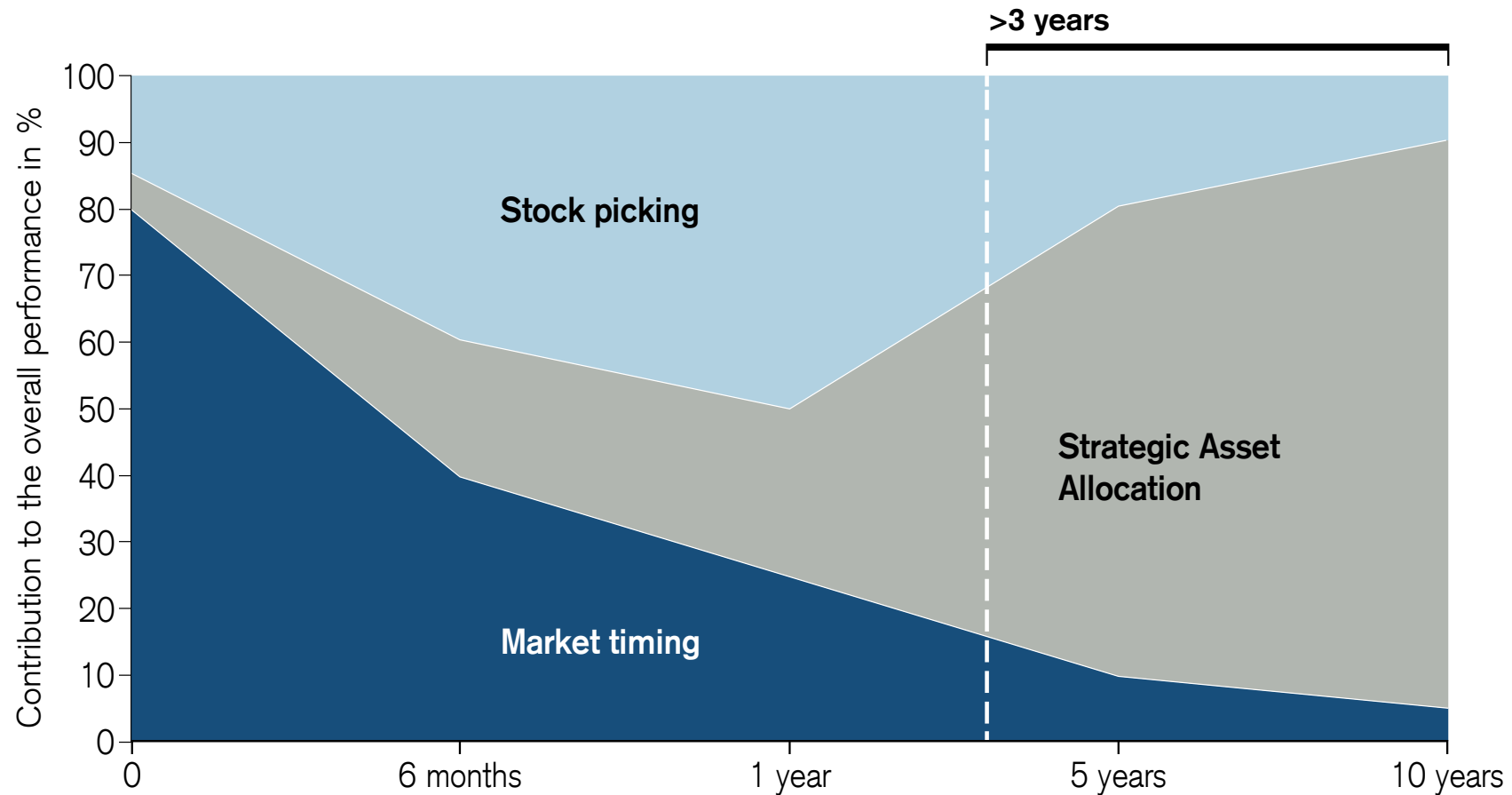
The SAA is based on realistic and fundamentally sound forecasts of risk, return, and correlation of returns for each asset class. Our Credit Suisse Capital Market Assumption inputs have distinct methodologies based on financial analysis and serve as the backbones for our Credit Suisse SAA advice.

As part of the portfolio construction process, we use the SAA as the starting point to create customised asset allocations advice to meet a client's needs.



Strategic Asset Allocation

The Core Driver of Long Run Returns



¹ Ibbotson and Kaplan (2000), Brinson, Hood and Beebower (1986), and Brinson Singer and Beebower (1991).

Source:
Credit Suisse AG

Strategic Asset Allocation

Based on Risk Tolerance

- The Strategic Asset Allocation (SAA) reflects the **risk tolerance** of the investor through the cycle (ability to withstand drawdown, investment horizon, liquidity etc.)
- The selection of an SAA is **not** driven by the client's or Credit Suisse's **view** of the market.
- A change in the risk profile (SAA) of the client should only be contemplated if the client's risk tolerance has changed
i.e.: ability and willingness to tolerate an increased probability and severity of loss

Risk Tolerance

SAA/Risk Profile

View of the Market

TAA
(over/underweight)



Risk Tolerance Questions



Risk Profile Questions

Please consider these and let us know your responses

Investment Objective: Which statement best describes your investment objective?

Response	Response
To preserve the value of the investments (Low Risk Tolerance)	1
To earn moderate income from the investments (Moderate Risk Tolerance)	2
To see the value of the investments grow and at the same time generate income from the investments (Medium Risk Tolerance)	3
To see enhanced capital growth over time (Enhanced Risk Tolerance)	4
To see substantial capital growth over time (High Risk Tolerance)	5

Free Assets: What proportion of your corpus is available for investment (ie free assets) and not needed to cover defined liabilities or specific projects for the future?

Response	Response
Less than 20%	1
Between 20% and 40%	2
Between 40% and 60%	3
Between 60% and 90%	4
More than 90%	5



Risk Tolerance Questions

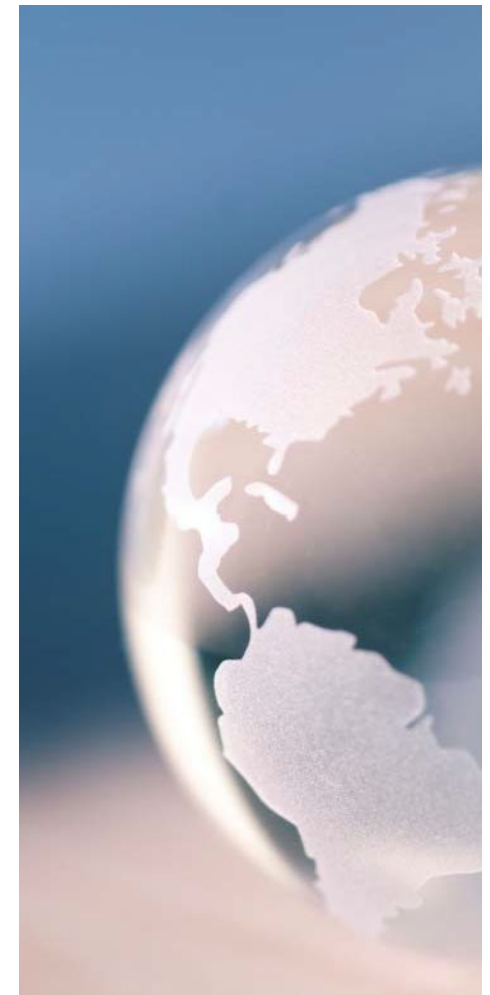
Please consider these and let us know your responses

Experience: How many years of experience do you have investing in risk bearing investments such as equities, derivatives, alternative investments etc.?

Response	Score
No experience	1
Between 1 and 3 years	2
Between 3 and 6 years	3
Between 6 and 15 years	4
More than 15 years	5

Interest: How often do you follow developments in the financial markets?

Response	Score
Never	1
Rarely	2
Sometimes	3
Regularly	4
Almost daily or more often	5

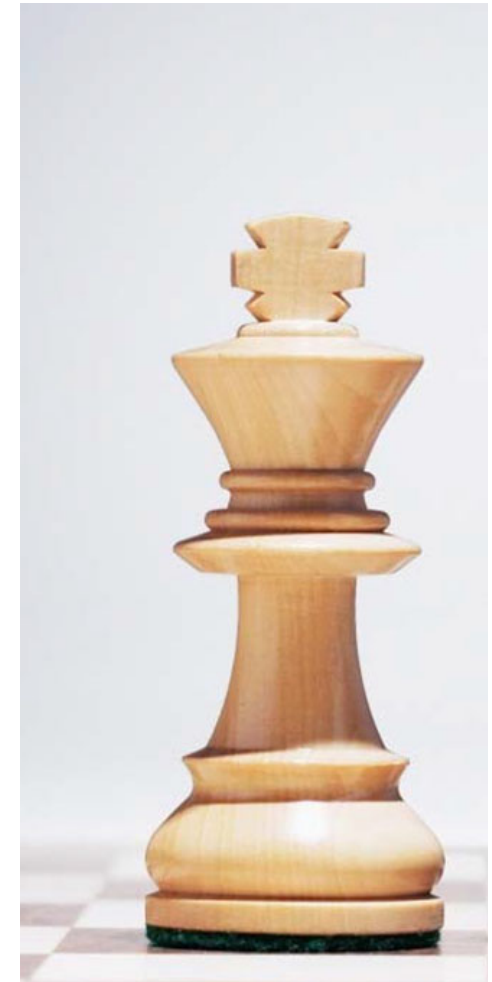


Risk Tolerance Questions

Please consider these and let us know your responses

Expectations : Do you agree with the following statement: Over the long term (more than 5 years), riskier investments with a higher potential return (e.g. equities) are more attractive than less risky investments with a lower potential return (e.g. money market investments).

Response	Score
Do not agree	1
Slightly disagree	2
Partially agree	3
Mostly agree	4
Agree	5



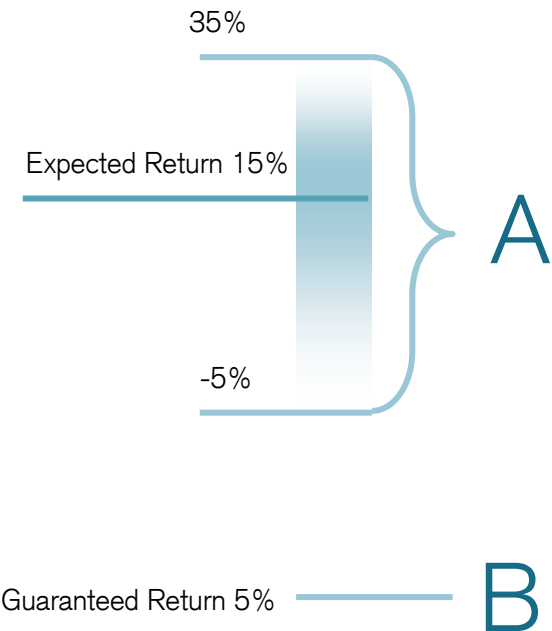
Risk Profile Questions

Please consider these and let us know your responses

Risk Awareness:

Investment opportunity A is expected (but not guaranteed) to generate an annual return of 15%. In the past its returns have been as high as 35% but also as low as -5%. Investment opportunity B guarantees a fixed annual return of 5%. How much of your planned investment would you put in the riskier opportunity A (the rest will be placed in opportunity B)?

Response	Response
None	1
Less than 50%	2
Around 50%	3
More than 50%	4
Up to 100%	5



Risk Tolerance Questions

Please consider these and let us know your responses

Comfort

How would you react if your portfolio were to decrease in value by 30%?

Response	Score
Broadly reduce positions	1
Selectively reduce positions	2
Maintain current positions	3
Selectively increase positions	4
Broadly increase positions	5

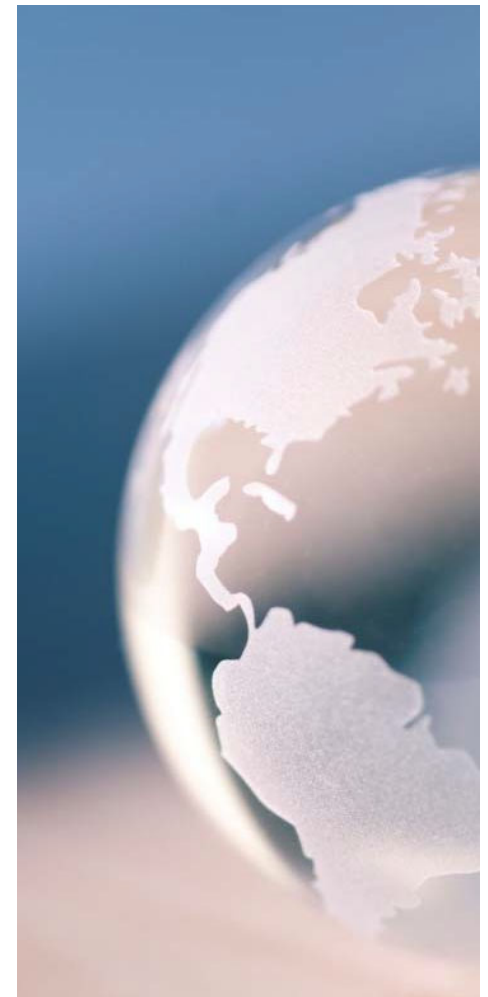


Risk Profile Questions

Please consider these and let us know your responses

Time Horizon: For how many years are you unlikely to need substantial funds from your portfolio?

Response	Response
Less than 3 years	1
Between 3 and 5 years	2
Between 5 and 8 years	3
Between 8 and 12 years	4
More than 12 years	5



Risk Profile Questions

Please consider these and let us know your responses

Illiquid Alternative Investments: What proportion of the corpus would you be comfortable allocating to illiquid alternative investments (eg: Private Equity, Real Estate, Private Credit, etc)?*

Response	Response
None	1
0% to 5%	2
5% to 10%	3
10% to 20%	4
20% plus	5

*we would work with you to ensure that the overall asset allocation allows for sufficient liquidity within the corpus to fund the liquidity required on an ongoing basis (including during potentially stressed market conditions)



Risk Profile Questions

Please consider these and let us know your responses

Responsible Investing: Should the portfolio have an RI/ESG screen?

Response	Response
Yes	1
No	2

RI/ESG Impact on Portfolio: If the portfolio does have an RI/ESG screen, would you be willing for the portfolio to have a higher degree of volatility to implement this screen (ie potentially caused by excluding certain asset classes like hedge funds or private equity, increasing the weighting to certain sectors, or perhaps through greater concentrations within certain asset classes)?

Response	Response
Yes	1
No	2



Risk Profile Questions

Please consider these and let us know your responses

Responsible Investing: If there is an RI/ESG screen, for the direct investments within the portfolio, what are the segments which should be specifically excluded?

Response	Response
Controversial Weapons	Yes/No
Alcohol	Yes/No
Adult Entertainment	Yes/No
Gambling	Yes/No
Tobacco Manufacturing	Yes/No



Risk Profile Questions

Please consider these and let us know your responses

RI/ESG Impact on Portfolio: If the portfolio does have an RI/ESG screen, would you be willing for the portfolio to potentially forgo some performance to implement this screen (ie for the portfolio to potentially underperform a broader based benchmark without an RI/ESG screen)?

Response	Response
Yes	1
No	2

RI/ESG Impact on Portfolio: If the portfolio were to underperform a broader based benchmark due to an RI/ESG screen, how much underperformance would be tolerable?

Response	Response
Insignificant Amount	1
Moderate Amount	2
Significant Amount	3



Risk Profiles For Comparison



Our Investment Profiles

Risk Profiles for Comparison

	Fixed Income	Yield	Balanced	Growth	Global Equities
Investment Objectives	<ul style="list-style-type: none"> ■ Preservation of capital ■ Generation of returns using current income 	<ul style="list-style-type: none"> ■ Real capital preservation ■ Generation of returns using current income 	<ul style="list-style-type: none"> ■ Real preservation and long term accumulation of capital using current income, capital, and currency gains 	<ul style="list-style-type: none"> ■ Long-term asset growth through a greater focus on capital and currency gains 	<ul style="list-style-type: none"> ■ Long-term asset growth through a greater focus on capital and currency gains
Risk Tolerance	<ul style="list-style-type: none"> ■ Low risk tolerance ■ Maintenance of low volatility 	<ul style="list-style-type: none"> ■ Below-average risk tolerance ■ Volatility as low as possible 	<ul style="list-style-type: none"> ■ Average risk tolerance ■ Takes volatility into account 	<ul style="list-style-type: none"> ■ Above-average risk tolerance ■ Takes increased volatility into account 	<ul style="list-style-type: none"> ■ High risk tolerance ■ Takes major volatility into account
Asset Classes	<ul style="list-style-type: none"> ■ Liquidity ■ Bonds ■ Alternative Investments 	<ul style="list-style-type: none"> ■ Liquidity ■ Bonds ■ Equities ■ Alternative Investments 	<ul style="list-style-type: none"> ■ Liquidity ■ Bonds ■ Equities ■ Alternative Investments 	<ul style="list-style-type: none"> ■ Liquidity ■ Bonds ■ Equities ■ Alternative Investments 	<ul style="list-style-type: none"> ■ Liquidity ■ Equities ■ Alternative Investments
Investment Horizon	Up to 3 years	3–5 years	5–8 years	8–12 years	Over 12 years

Source: Credit Suisse

Strategic Asset Allocation

Risk Profiles for Comparison



Investment Profiles	Fixed Income	Yield	Balanced	Growth	Equities
Liquidity	5.0%	5.0%	5.0%	5.0%	5.0%
Bonds	85.0%	50.0%	30.0%	10.0%	0.0%
Equities - Domestic	0.0%	15.0%	25.0%	35.0%	43.8%
Equities - International	0.0%	15.0%	25.0%	35.0%	43.8%
Alternates - Hedge Funds	7.5%	10.0%	10.0%	10.0%	7.5%
Alternates - Real Estate	2.5%	5.0%	5.0%	5.0%	0.0%
Alternates - Commodities	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	0.0%	0.0%	0.0%	0.0%	0.0%
Historic Analysis					
Annualised Average Return	8.9%	9.9%	10.4%	10.9%	11.1%
Annualised Average Return Last 10 Years	4.7%	7.7%	9.5%	11.3%	12.2%
Annualised Average Return Last 20 Years	5.8%	6.5%	6.9%	7.3%	7.4%
Worst 12 Month Return	-4.7%	-13.9%	-21.6%	-29.3%	-31.3%
Best 12 Month Return	23.3%	28.8%	36.6%	45.3%	53.1%
Max Drawdown (%)	-6.6%	-17.6%	-27.2%	-36.1%	-38.0%
Portfolio Standard Deviation	3.6%	5.6%	7.6%	9.9%	11.4%
Negative Annual Return is Incurred	1 in 40.0 years	1 in 13.7 years	1 in 7.1 years	1 in 5.8 years	1 in 4.9 years
Credit Suisse Research Projections					
Total Return	1.7%	3.8%	5.1%	6.5%	7.1%
Income	2.6%	2.5%	2.5%	2.5%	2.5%
Standard Deviation	4.2%	5.1%	7.3%	9.9%	11.5%

Source: Bloomberg, Credit Suisse, Thomson Reuters

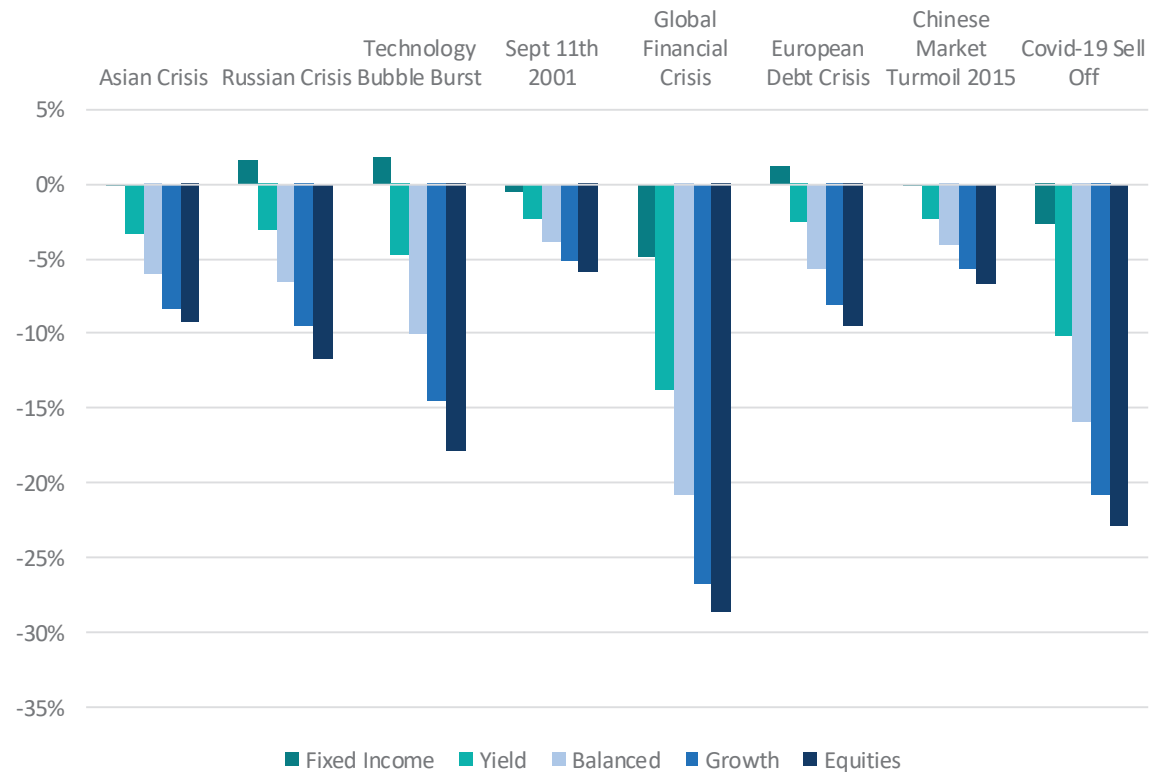


Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Scenario Analysis

Benchmark Asset Allocation Profiles

Credit Suisse's proprietary risk models predict the loss each benchmark asset allocation profile would have experienced in recent historical drawdown scenarios.



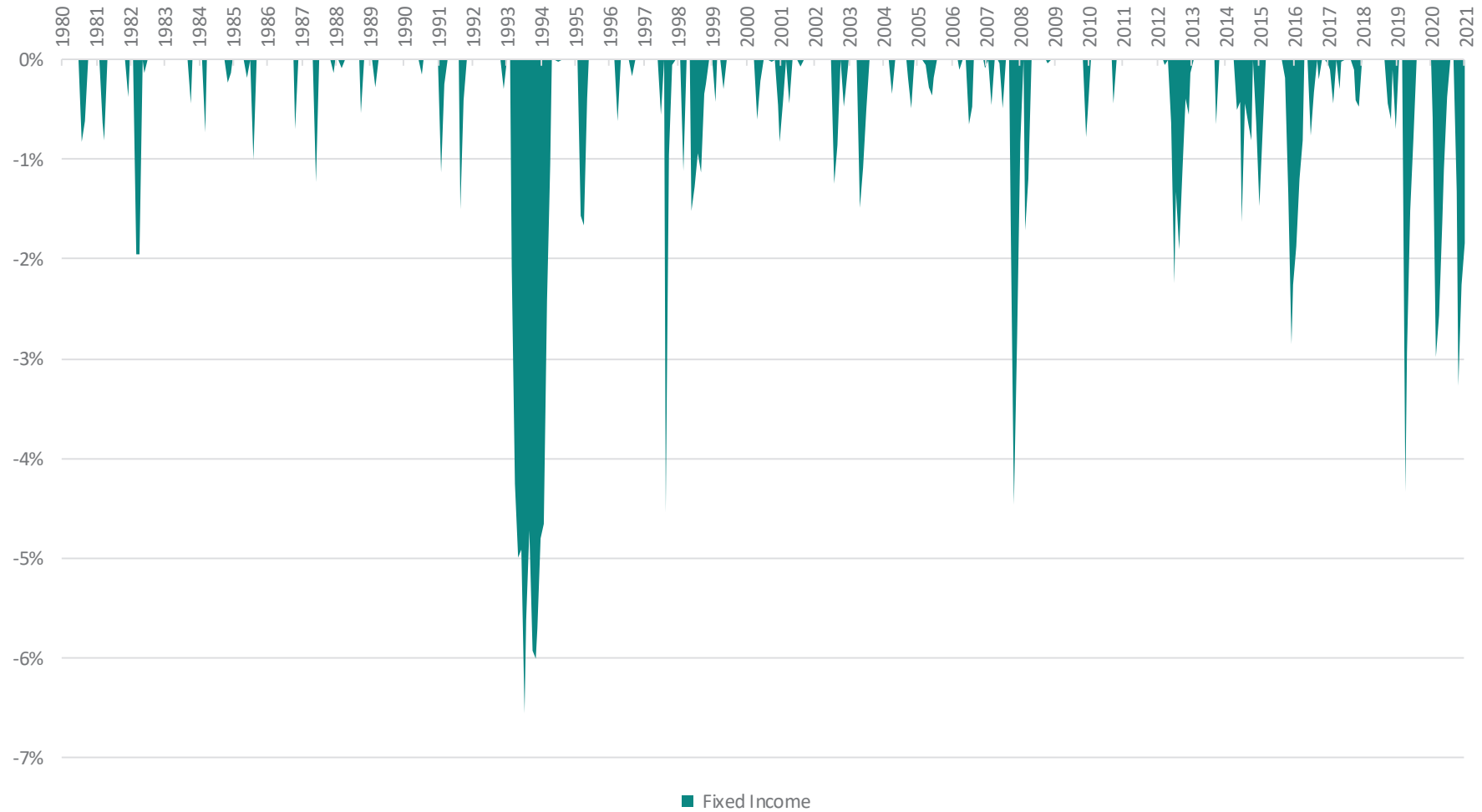
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Historical Drawdowns

Fixed Income Profile



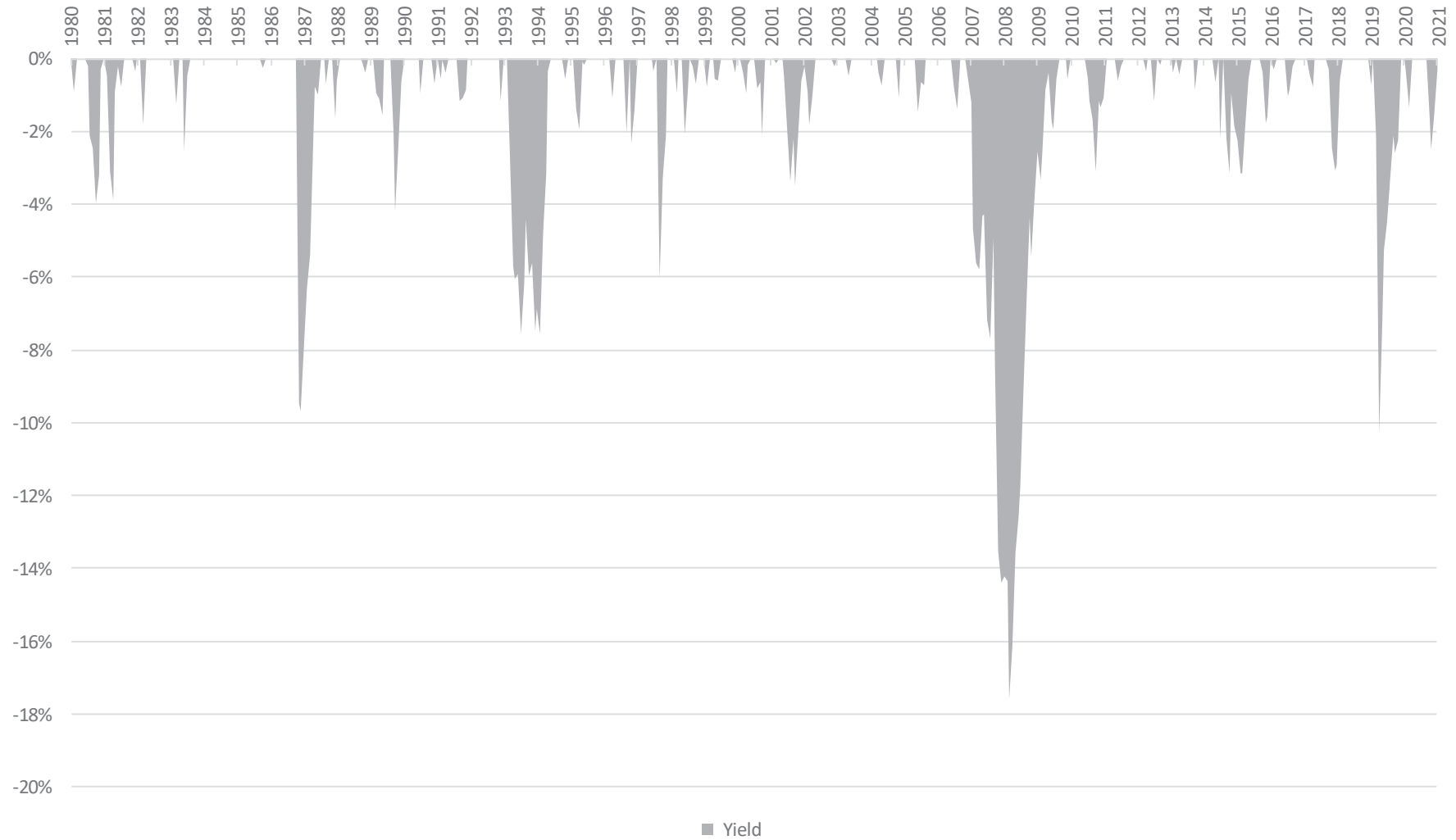
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Historical Drawdowns

Yield Profile



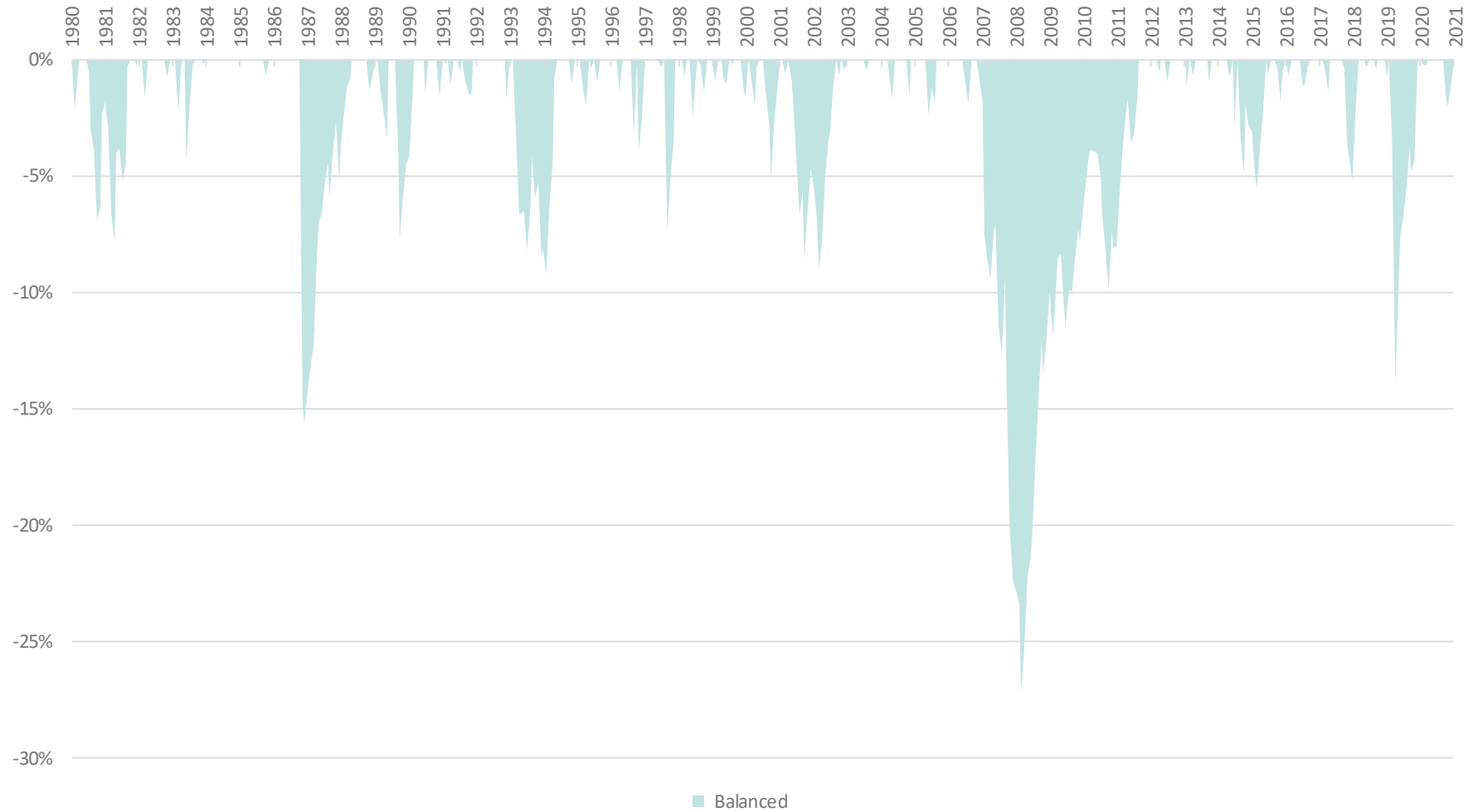
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Historical Drawdowns

Balanced Profile



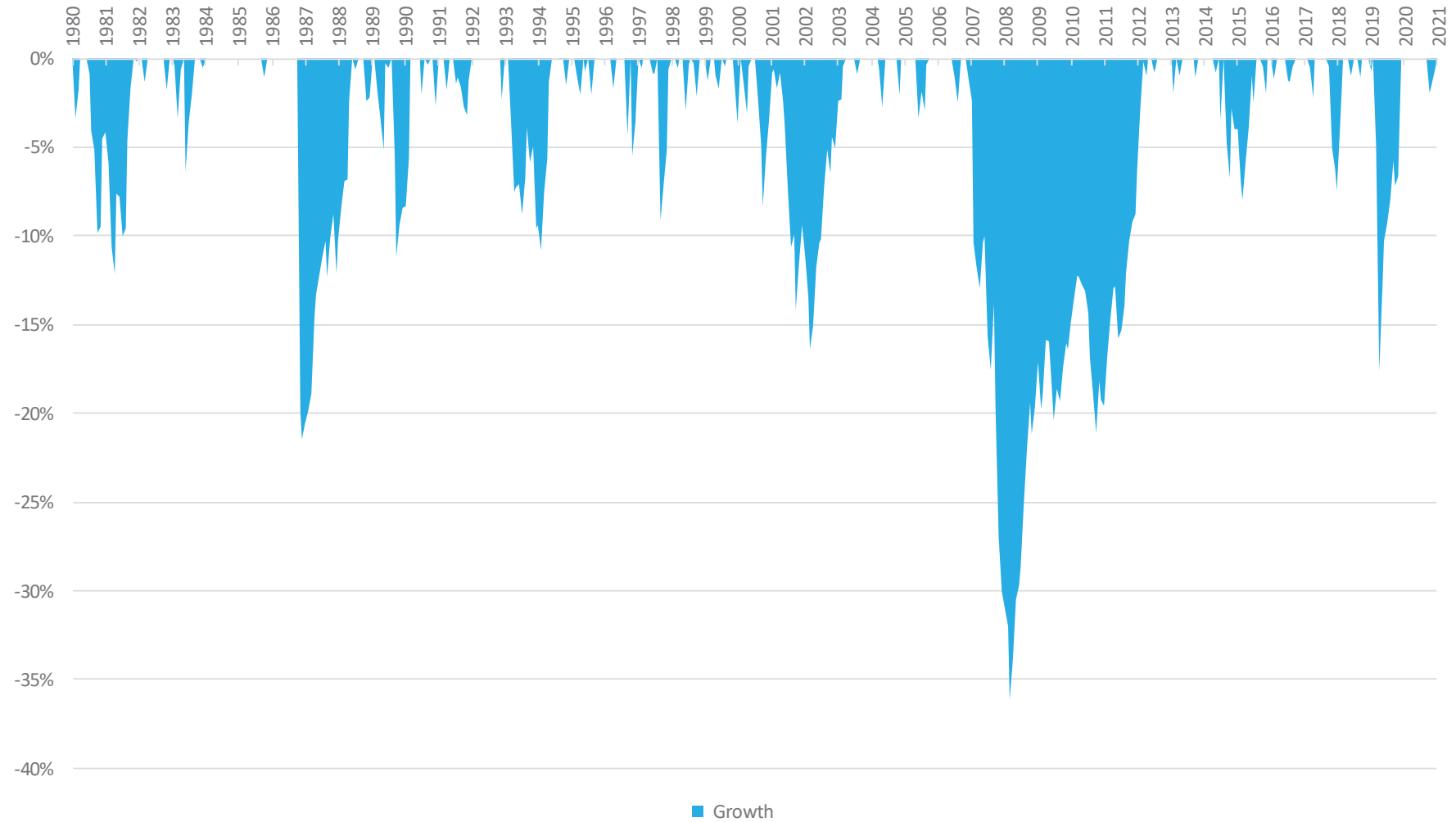
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Historical Drawdowns

Growth Profile



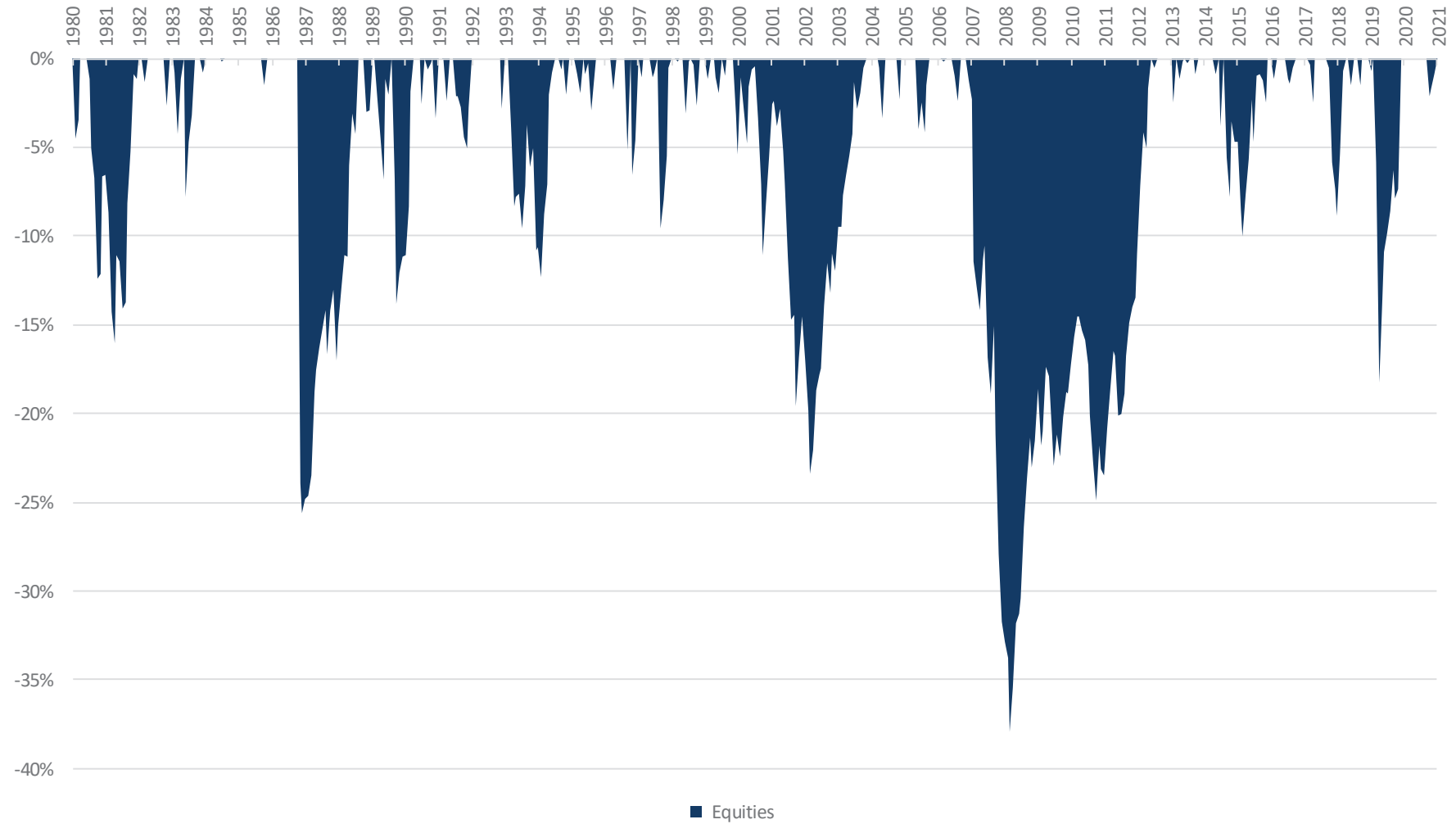
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Historical Drawdowns

Equities Profile



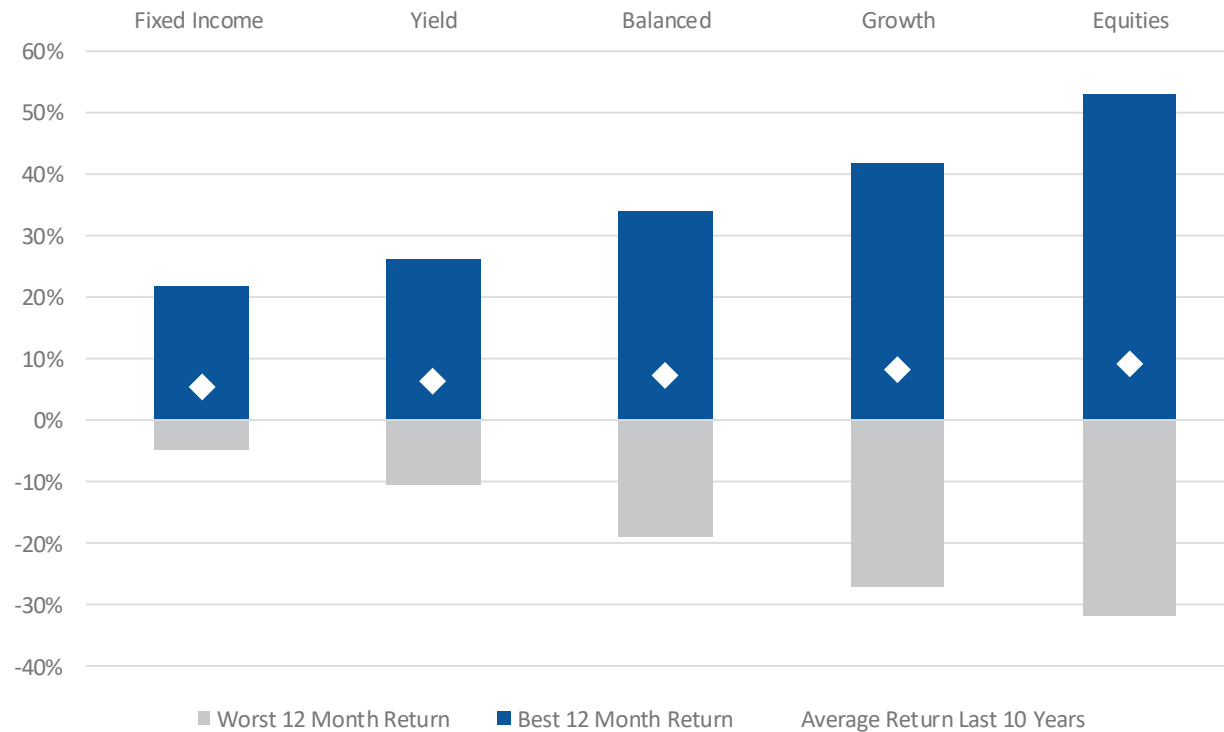
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Risk and Return Comparison

Consider range of returns over rolling 12 months



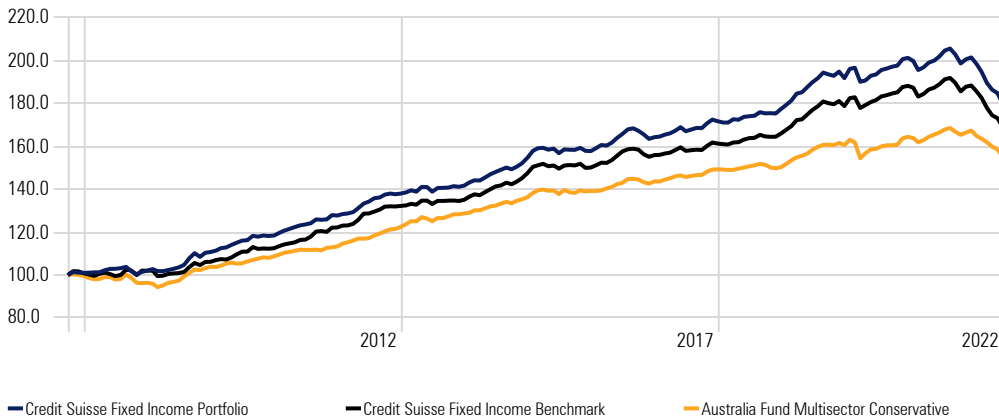
Source: Bloomberg, Credit Suisse, Thomson Reuters



Incorporates data from January 1981 through to December 2021 and uses the longest data set available for each asset class. Please refer to "Notes on Credit Suisse Benchmark Asset Allocation Framework".

Investment Growth

Time Period: Since Common Inception (1/10/2007) to 30/06/2022



— Credit Suisse Fixed Income Portfolio — Credit Suisse Fixed Income Benchmark — Australia Fund Multisector Conservative

Monthly Returns - Credit Suisse Fixed Income Portfolio

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2022	-1.55	-1.79	-2.68	-1.66	-0.86	-2.69							-10.73
2021	-0.75	-2.09	0.65	1.11	0.47	0.96	1.37	0.47	-1.34	-2.07	0.97	0.44	0.10
2020	2.26	0.26	-3.32	0.32	1.15	0.32	1.07	0.35	0.43	0.26	1.52	0.31	4.94
2019	1.10	1.07	1.81	0.32	1.30	1.23	0.99	1.35	-0.43	-0.35	1.03	-1.58	8.09
2018	-0.35	-0.02	0.91	-0.13	0.78	0.16	0.14	0.95	-0.31	0.05	-0.09	1.22	3.34
2017	0.18	0.52	0.39	0.73	0.99	-1.12	0.47	0.46	-0.06	1.35	1.01	-0.45	4.54
2016	0.90	0.88	-0.18	0.88	1.39	1.09	1.28	0.31	-0.70	-1.02	-1.25	0.48	4.10
2015	2.04	0.78	0.13	-0.55	0.32	-1.34	1.13	-0.11	-0.02	0.59	-0.88	-0.07	1.98
2014	1.09	0.65	-0.06	0.96	1.05	0.73	0.71	0.68	-0.54	0.85	1.06	1.69	9.21
2013	0.40	0.71	-0.46	1.60	-0.06	-1.53	1.22	0.06	0.08	0.47	-0.20	0.38	2.67
2012	0.53	0.22	0.47	1.47	1.60	0.70	1.16	0.26	0.98	0.37	-0.24	0.24	8.02
2011	1.05	0.85	0.71	0.68	0.66	0.34	0.44	1.45	-0.15	0.17	1.57	-0.15	7.88
2010	0.60	1.01	0.31	1.04	0.91	0.83	0.19	1.73	-0.33	0.47	-0.20	0.19	6.94
2009	0.73	-0.90	-0.04	0.49	0.57	0.66	1.12	3.05	2.11	-1.58	1.78	0.32	8.54
2008	0.06	0.14	0.05	0.94	0.61	0.04	0.28	0.58	-1.95	-1.35	1.07	0.55	0.98
2007										1.39	-0.27	-0.07	

Drawdown

Time Period: Since Common Inception (1/10/2007) to 30/06/2022



— Credit Suisse Fixed Income Portfolio — Credit Suisse Fixed Income Benchmark — Australia Fund Multisector Conservative

Trailing Returns

	YTD	1 month	3 months	6 months	1 year	2 years	3 years	4 years	5 years	Since Inception
Credit Suisse Fixed Income Portfolio	-10.73	-2.69	-5.13	-10.73	-10.92	-3.60	-1.80	0.82	1.49	4.06
Credit Suisse Fixed Income Benchmark	-10.24	-2.33	-4.99	-10.24	-10.51	-3.50	-1.51	0.79	1.38	3.63
Australia Fund Multisector Conservative	-7.12	-2.19	-4.18	-7.12	-6.63	-0.96	-0.44	0.99	1.50	3.14

Credit Suisse performance figures are before fees and taxes

Source: Credit Suisse AG

Source: Morningstar Direct

Return/Risk Analysis

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Annualized Return	4.06	3.63	3.14
Cumulative Return	79.90	69.14	57.79
Std Dev	3.35	3.36	2.89
Sharpe Ratio	0.40	0.27	0.14
Sortino Ratio	0.55	0.38	0.19
Calmar Ratio	0.32	0.31	0.40

	Inv	Bmk1	Bmk2
Best Month	3.05	2.50	2.09
Worst Month	-3.32	-2.74	-4.48
Best Quarter	6.40	4.68	5.40
Worst Quarter	-5.91	-5.52	-4.27
Up Months Percent	71.75	71.19	68.93
Down Months Percent	28.25	28.81	31.07
Average Gain	0.80	0.76	0.68
Average Loss	-0.84	-0.85	-0.67
Gain Std Dev	1.83	2.00	1.49
Loss Std Dev	2.85	2.66	2.63

	Inv	Bmk1	Bmk2
Longest Up Streak (Mo)	10	12	12
Run Up %	8.03	9.92	6.20
Start Date	1/01/2012	1/11/2011	1/09/2013
End Date	31/10/2012	31/10/2012	31/08/2014
Longest Down Streak (Mo)	6	6	6
Run Down %	-10.73	-10.24	-7.12
Start Date	1/01/2022	1/01/2022	1/01/2022
End Date	30/06/2022	30/06/2022	30/06/2022
Max Drawdown (Mo)	10	10	10
Max Drawdown %	-12.53	-11.89	-7.86
Peak Date	1/09/2021	1/09/2021	1/09/2021
Valley Date	30/06/2022	30/06/2022	30/06/2022

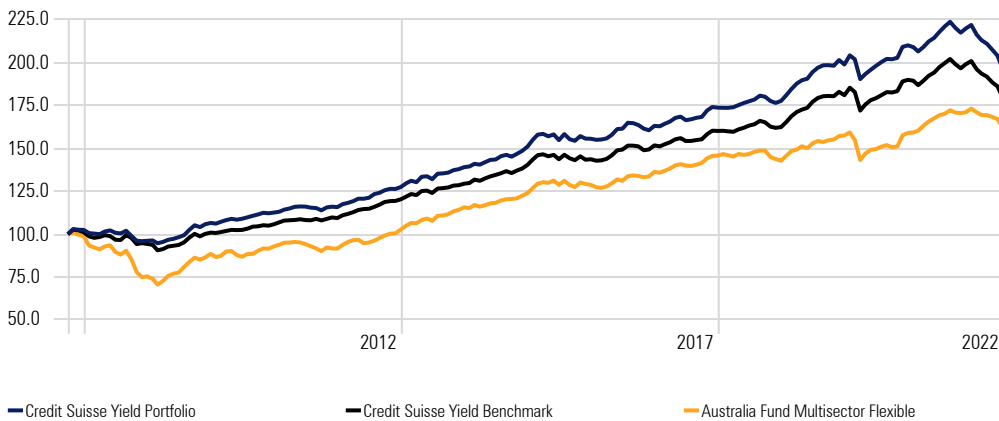
Relative Performance

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Excess Return	0.43	0.00	-0.49
Alpha	0.50	0.00	-0.18
Beta	0.91	1.00	0.66
R2	83.63	100.00	56.93
Tracking Error	1.37	0.00	2.23
Information Ratio (geo)	0.30		-0.21
Treynor Ratio (geo)	1.40	0.86	0.58
Up Capture Ratio	102.34	100.00	77.90
Down Capture Ratio	90.98	100.00	67.37
Up Number Ratio	0.94	1.00	0.88
Down Number Ratio	0.82	1.00	0.78
Up Percent Ratio	0.61	0.00	0.44
Down Percent Ratio	0.49	0.00	0.75

Investment Growth

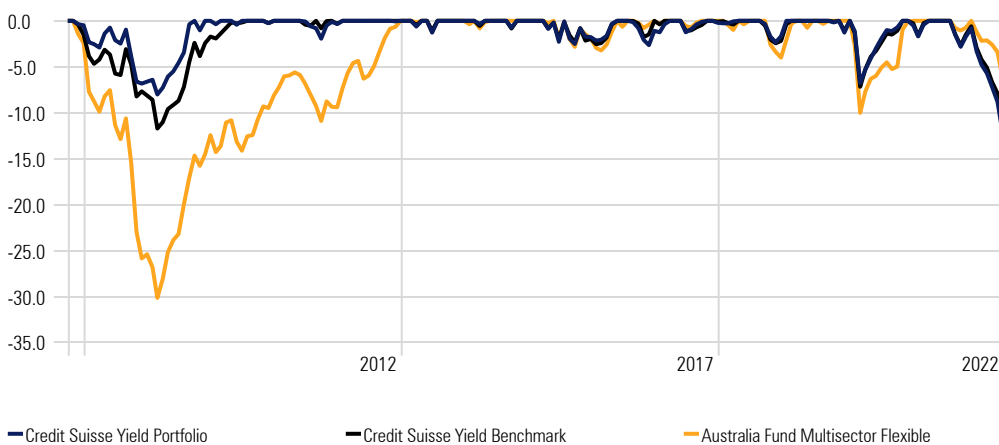
Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Monthly Returns - Credit Suisse Yield Portfolio

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2022	-2.53	-1.51	-0.97	-1.59	-1.73	-3.81							-11.57
2021	-0.51	-1.19	1.28	1.52	0.98	1.60	1.48	1.23	-1.56	-1.30	1.14	0.91	5.65
2020	2.67	-1.14	-5.72	1.57	1.29	1.16	1.09	0.94	-0.11	0.41	3.16	0.42	5.61
2019	1.94	1.88	1.75	1.05	0.46	2.02	1.34	0.71	0.04	-0.17	1.68	-1.28	11.96
2018	-0.06	0.00	0.21	0.70	0.71	0.56	0.58	1.25	-0.35	-1.38	-0.64	0.67	2.26
2017	-0.16	0.89	0.81	1.26	0.48	-1.25	0.33	0.53	0.28	2.25	1.18	-0.21	6.51
2016	-0.39	0.11	0.42	1.35	2.12	0.13	2.14	-0.14	-0.66	-1.30	-0.57	1.60	4.84
2015	2.67	1.92	0.24	-0.88	0.72	-2.12	2.28	-1.90	-0.58	1.76	-0.92	-0.06	3.03
2014	0.31	1.10	-0.35	1.00	0.96	0.15	1.34	0.55	-0.74	1.14	1.16	1.71	8.62
2013	1.71	1.12	-0.63	2.41	0.23	-1.29	2.43	0.14	0.34	1.05	0.42	0.85	9.07
2012	1.51	0.58	0.86	1.22	0.00	0.45	1.76	0.64	1.20	0.63	-0.05	0.90	10.13
2011	0.44	1.06	0.60	0.85	0.18	-0.07	-0.53	-0.21	-1.15	1.48	0.38	-0.22	2.82
2010	-0.37	1.01	0.92	0.67	-0.43	0.49	0.76	0.81	0.70	0.89	-0.26	0.37	5.69
2009	0.22	-1.72	0.81	1.31	0.60	0.98	1.19	3.19	2.53	-1.04	1.63	0.71	10.81
2008	-1.85	-0.22	-0.38	1.57	0.66	-1.38	-0.38	1.56	-2.92	-2.89	-0.23	0.23	-6.17
2007										2.98	-0.36	-0.13	

Drawdown

Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Trailing Returns

	YTD	1 month	3 months	6 months	1 year	2 years	3 years	4 years	5 years	Since Inception
Credit Suisse Yield Portfolio	-11.57	-3.81	-6.98	-11.57	-9.91	-0.47	0.31	2.55	3.36	4.68
Credit Suisse Yield Benchmark	-10.66	-3.59	-6.43	-10.66	-9.05	0.05	0.45	2.39	3.07	4.05
Australia Fund Multisector Flexible	-6.26	-2.97	-4.23	-6.26	-4.12	4.29	2.12	2.61	3.05	3.36

Credit Suisse performance figures are before fees and taxes

Source: Credit Suisse AG

Source: Morningstar Direct

Return/Risk Analysis

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Annualized Return	4.68	4.05	3.36
Cumulative Return	96.33	79.52	62.72
Std Dev	4.43	4.42	6.35
Sharpe Ratio	0.44	0.30	0.12
Sortino Ratio	0.62	0.41	0.15
Calmar Ratio	0.38	0.34	0.11

	Inv	Bmk1	Bmk2
Best Month	3.19	3.09	4.24
Worst Month	-5.72	-5.91	-8.93
Best Quarter	7.06	6.92	11.18
Worst Quarter	-6.98	-6.43	-11.88
Up Months Percent	66.10	68.36	65.54
Down Months Percent	33.90	31.64	34.46
Average Gain	1.09	1.00	1.25
Average Loss	-0.98	-1.10	-1.56
Gain Std Dev	2.42	2.33	3.13
Loss Std Dev	3.56	3.76	6.08

	Inv	Bmk1	Bmk2
Longest Up Streak (Mo)	10	14	12
Run Up %	12.48	12.80	12.26
Start Date	1/12/2018	1/01/2012	1/04/2014
End Date	30/09/2019	28/02/2013	31/03/2015
Longest Down Streak (Mo)	6	6	5
Run Down %	-11.57	-10.66	-5.61
Start Date	1/01/2022	1/01/2022	1/05/2011
End Date	30/06/2022	30/06/2022	30/09/2011
Max Drawdown (Mo)	10	16	16
Max Drawdown %	-12.30	-11.75	-30.22
Peak Date	1/09/2021	1/11/2007	1/11/2007
Valley Date	30/06/2022	28/02/2009	28/02/2009

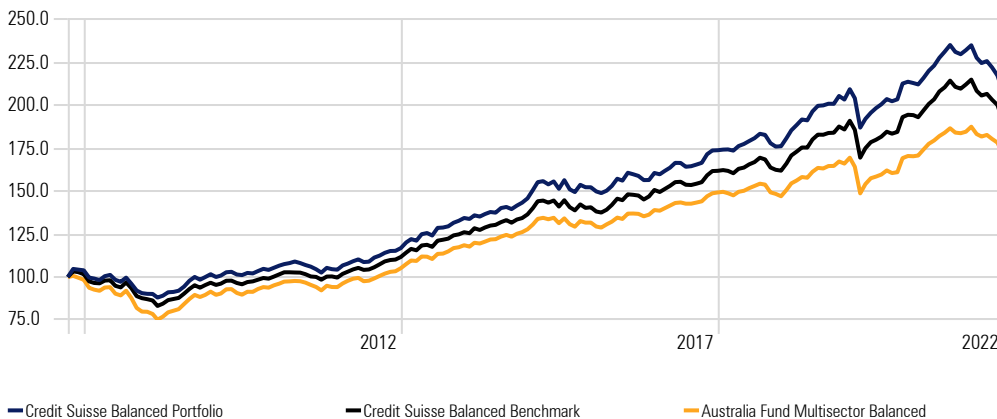
Relative Performance

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Excess Return	0.63	0.00	-0.69
Alpha	0.67	0.00	-0.83
Beta	0.95	1.00	1.20
R2	91.12	100.00	68.94
Tracking Error	1.35	0.00	3.72
Information Ratio (geo)	0.45		-0.18
Treynor Ratio (geo)	1.97	1.27	0.49
Up Capture Ratio	102.80	100.00	105.21
Down Capture Ratio	90.98	100.00	125.82
Up Number Ratio	0.93	1.00	0.87
Down Number Ratio	0.93	1.00	0.80
Up Percent Ratio	0.61	0.00	0.60
Down Percent Ratio	0.52	0.00	0.52

Investment Growth

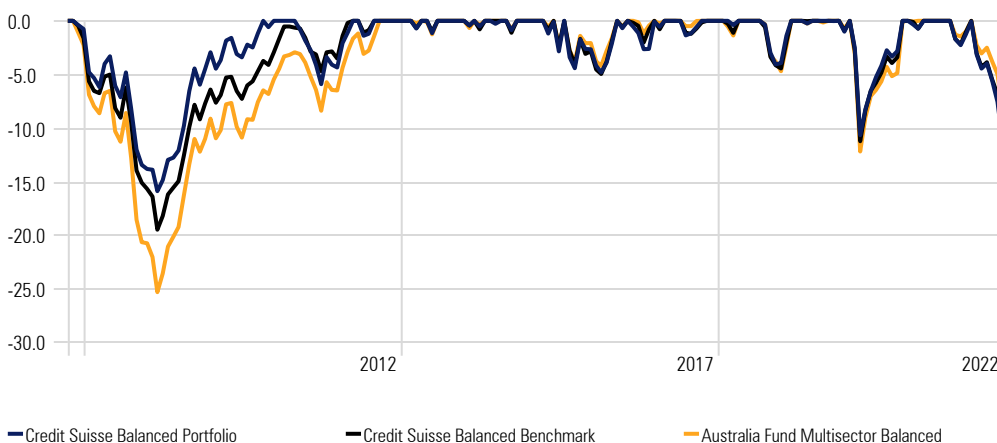
Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Monthly Returns - Credit Suisse Balanced Portfolio

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2022	-3.10	-1.35	0.50	-1.64	-2.12	-4.27							-11.47
2021	-0.36	-0.38	1.79	1.90	1.40	2.04	1.57	1.67	-1.71	-0.57	1.03	1.23	9.94
2020	2.96	-2.52	-8.39	2.72	1.85	1.39	1.13	1.51	-0.62	0.54	4.52	0.50	5.10
2019	2.66	2.54	1.68	1.69	-0.25	2.72	1.66	0.13	0.49	-0.02	2.27	-1.01	15.44
2018	0.21	0.06	-0.39	1.52	0.70	0.95	0.94	1.41	-0.34	-2.65	-1.12	0.13	1.34
2017	-0.48	1.20	1.20	1.71	-0.02	-1.34	0.20	0.59	0.60	3.01	1.29	0.07	8.26
2016	-1.58	-0.65	0.95	1.83	2.75	-0.69	2.92	-0.54	-0.60	-1.53	0.03	2.62	5.48
2015	3.33	3.06	0.36	-1.19	1.11	-2.76	3.33	-3.41	-1.06	2.82	-0.91	-0.03	4.43
2014	-0.43	1.58	-0.53	1.08	0.87	-0.28	1.96	0.45	-0.87	1.47	1.18	1.75	8.50
2013	2.84	1.60	-0.72	3.09	0.56	-1.16	3.58	0.16	0.55	1.62	0.88	1.22	15.04
2012	2.38	0.98	1.30	0.97	-1.40	0.19	2.21	1.04	1.44	0.92	0.07	1.39	12.06
2011	1.19	0.82	0.56	0.83	-0.81	-1.05	-0.90	-1.44	-1.86	2.69	-0.73	-0.27	-1.07
2010	-1.58	0.83	1.90	0.26	-1.54	-0.32	1.23	-0.27	1.35	1.25	-0.59	1.21	3.72
2009	-0.08	-2.33	1.23	2.23	0.23	0.77	2.63	3.60	2.26	-1.59	1.55	1.65	12.66
2008	-4.07	-0.56	-0.90	2.31	0.74	-2.84	-1.15	2.50	-3.55	-4.18	-1.63	-0.44	-13.18
2007										4.72	-0.39	-0.38	

Drawdown

Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Trailing Returns

	YTD	1 month	3 months	6 months	1 year	2 years	3 years	4 years	5 years	Since Inception
Credit Suisse Balanced Portfolio	-11.47	-4.27	-7.84	-11.47	-8.63	2.41	1.93	3.81	4.85	5.10
Credit Suisse Balanced Benchmark	-11.23	-4.66	-7.65	-11.23	-8.27	2.99	1.96	3.62	4.42	4.48
Australia Fund Multisector Balanced	-8.65	-3.86	-6.30	-8.65	-5.81	4.11	2.15	3.17	3.79	3.78

Credit Suisse performance figures are before fees and taxes

Source: Credit Suisse AG

Source: Morningstar Direct

Return/Risk Analysis

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Annualized Return	5.10	4.48	3.78
Cumulative Return	108.21	90.99	72.90
Std Dev	6.25	6.16	6.45
Sharpe Ratio	0.39	0.30	0.18
Sortino Ratio	0.55	0.40	0.24
Calmar Ratio	0.32	0.23	0.15
	Inv	Bmk1	Bmk2
Best Month	4.72	4.70	5.08
Worst Month	-8.39	-8.73	-9.38
Best Quarter	8.73	8.40	10.20
Worst Quarter	-8.05	-8.83	-10.38
Up Months Percent	62.15	62.71	62.71
Down Months Percent	37.85	37.29	37.29
Average Gain	1.51	1.43	1.39
Average Loss	-1.36	-1.39	-1.48
Gain Std Dev	3.44	3.14	3.21
Loss Std Dev	4.74	5.05	5.74
	Inv	Bmk1	Bmk2
Longest Up Streak (Mo)	9	9	9
Run Up %	12.28	11.74	12.47
Start Date	1/06/2012	1/06/2012	1/06/2012
End Date	28/02/2013	28/02/2013	28/02/2013
Longest Down Streak (Mo)	6	6	6
Run Down %	-11.67	-4.20	-18.33
Start Date	1/09/2008	1/04/2011	1/09/2008
End Date	28/02/2009	30/09/2011	28/02/2009
Max Drawdown (Mo)	16	16	16
Max Drawdown %	-15.93	-19.53	-25.37
Peak Date	1/11/2007	1/11/2007	1/11/2007
Valley Date	28/02/2009	28/02/2009	28/02/2009

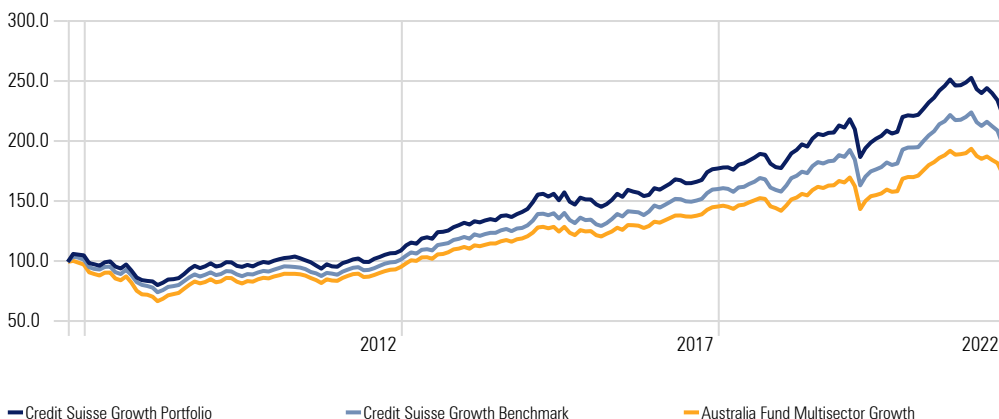
Relative Performance

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Excess Return	0.61	0.00	-0.70
Alpha	0.61	0.00	-0.69
Beta	0.99	1.00	1.02
R2	95.27	100.00	93.52
Tracking Error	1.38	0.00	1.67
Information Ratio (geo)	0.43		-0.40
Treynor Ratio (geo)	2.32	1.69	0.99
Up Capture Ratio	103.27	100.00	96.33
Down Capture Ratio	96.21	100.00	104.53
Up Number Ratio	0.95	1.00	0.97
Down Number Ratio	0.92	1.00	0.95
Up Percent Ratio	0.53	0.00	0.42
Down Percent Ratio	0.52	0.00	0.53

Investment Growth

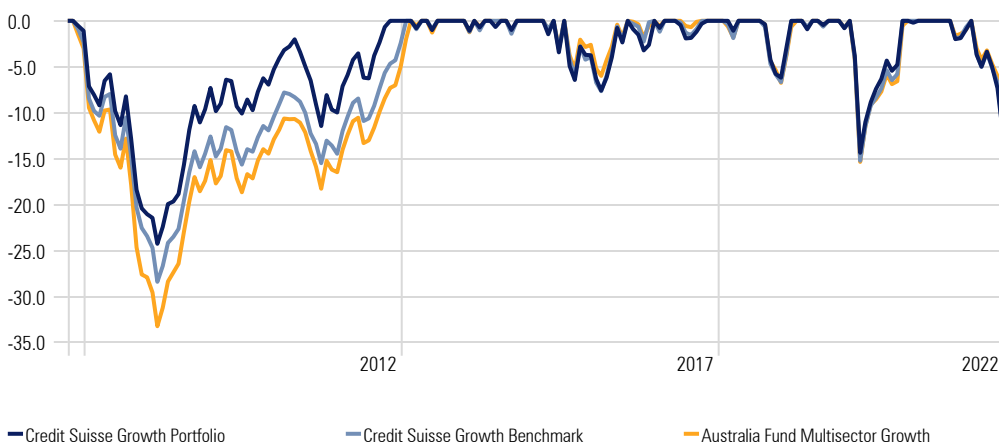
Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Monthly Returns - Credit Suisse Growth Portfolio

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2022	-3.70	-1.36	1.73	-1.72	-2.44	-5.18							-12.14
2021	-0.21	0.41	2.27	2.29	1.75	2.44	1.62	2.17	-2.00	0.11	0.93	1.52	14.05
2020	3.27	-3.82	-10.99	3.93	2.44	1.58	1.19	2.13	-1.17	0.70	5.95	0.61	4.80
2019	3.47	3.26	1.56	2.37	-0.92	3.36	1.94	-0.46	0.90	0.13	2.83	-0.81	18.94
2018	0.47	0.08	-1.09	2.33	0.61	1.32	1.33	1.62	-0.38	-3.90	-1.60	-0.43	0.21
2017	-0.78	1.51	1.59	2.19	-0.46	-1.47	0.06	0.68	0.89	3.84	1.42	0.35	10.16
2016	-2.68	-1.37	1.53	2.35	3.35	-1.60	3.77	-0.92	-0.60	-1.74	0.62	3.60	6.19
2015	3.95	4.18	0.41	-1.47	1.51	-3.44	4.34	-4.93	-1.60	3.89	-0.93	-0.04	5.48
2014	-1.09	2.08	-0.72	1.21	0.83	-0.67	2.62	0.38	-1.00	1.76	1.28	1.77	8.69
2013	4.00	2.02	-0.81	3.72	0.88	-1.01	4.60	0.25	0.82	2.23	1.28	1.54	21.16
2012	3.18	1.32	1.76	0.74	-2.75	-0.08	2.64	1.50	1.72	1.19	0.21	1.89	14.02
2011	1.27	0.93	0.42	0.80	-1.41	-1.62	-1.62	-2.80	-2.59	3.81	-1.73	-0.34	-4.96
2010	-2.73	0.91	2.87	-0.16	-2.95	-0.87	1.70	-1.27	2.22	1.60	-0.74	1.79	2.18
2009	-0.51	-3.60	2.43	3.22	0.35	1.01	3.92	4.53	2.96	-1.98	1.61	2.58	17.45
2008	-6.13	-0.99	-1.25	2.95	0.76	-4.26	-1.70	3.54	-5.06	-6.37	-2.48	-0.80	-20.22
2007										6.63	-0.55	-0.54	

Drawdown

Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Trailing Returns

	YTD	1 month	3 months	6 months	1 year	2 years	3 years	4 years	5 years	Since Inception
Credit Suisse Growth Portfolio	-12.14	-5.18	-9.08	-12.14	-8.29	4.81	3.17	4.80	6.10	5.57
Credit Suisse Growth Benchmark	-11.93	-5.59	-8.76	-11.93	-7.89	5.68	3.23	4.64	5.61	4.73
Australia Fund Multisector Growth	-10.71	-5.00	-7.73	-10.71	-7.01	5.78	2.89	3.85	4.78	3.84

Credit Suisse performance figures are before fees and taxes

Source: Credit Suisse AG

Source: Morningstar Direct

Return/Risk Analysis

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Annualized Return	5.57	4.73	3.84
Cumulative Return	122.55	97.75	74.44
Std Dev	8.50	8.35	8.44
Sharpe Ratio	0.36	0.27	0.17
Sortino Ratio	0.50	0.36	0.22
Calmar Ratio	0.23	0.17	0.12

	Inv	Bmk1	Bmk2
Best Month	6.63	6.34	6.50
Worst Month	-10.99	-11.56	-11.64
Best Quarter	11.84	10.96	12.86
Worst Quarter	-11.60	-12.66	-13.26
Up Months Percent	61.58	61.58	61.58
Down Months Percent	38.42	38.42	38.42
Average Gain	1.98	1.89	1.79
Average Loss	-1.95	-1.98	-2.01
Gain Std Dev	4.55	4.15	4.12
Loss Std Dev	6.39	6.64	7.22

	Inv	Bmk1	Bmk2
Longest Up Streak (Mo)	8	11	9
Run Up %	8.00	23.03	15.99
Start Date	1/07/2017	1/10/2020	1/06/2012
End Date	28/02/2018	31/08/2021	28/02/2013
Longest Down Streak (Mo)	6	7	6
Run Down %	-17.52	-8.36	-23.48
Start Date	1/09/2008	1/03/2011	1/09/2008
End Date	28/02/2009	30/09/2011	28/02/2009
Max Drawdown (Mo)	16	16	16
Max Drawdown %	-24.32	-28.47	-33.31
Peak Date	1/11/2007	1/11/2007	1/11/2007
Valley Date	28/02/2009	28/02/2009	28/02/2009

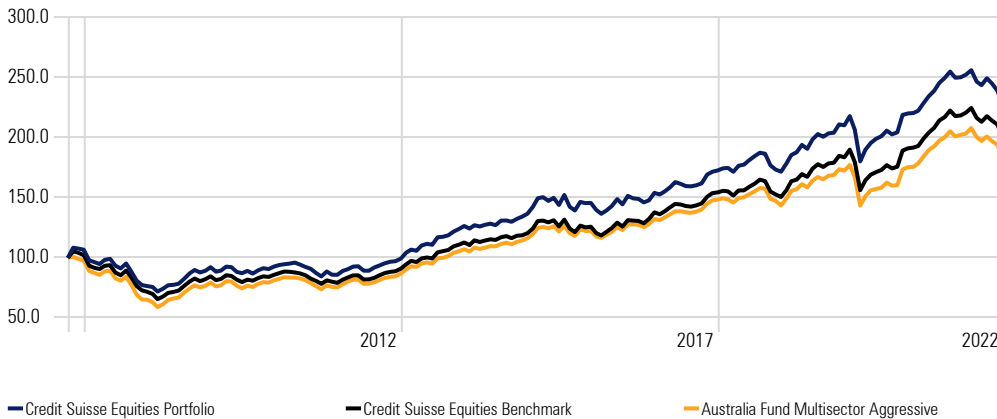
Relative Performance

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Excess Return	0.84	0.00	-0.89
Alpha	0.83	0.00	-0.83
Beta	0.99	1.00	0.99
R2	96.01	100.00	96.19
Tracking Error	1.72	0.00	1.67
Information Ratio (geo)	0.47		-0.51
Treynor Ratio (geo)	2.77	1.93	1.08
Up Capture Ratio	103.73	100.00	94.82
Down Capture Ratio	96.88	100.00	101.50
Up Number Ratio	0.96	1.00	0.98
Down Number Ratio	0.94	1.00	0.97
Up Percent Ratio	0.56	0.00	0.39
Down Percent Ratio	0.53	0.00	0.59

Investment Growth

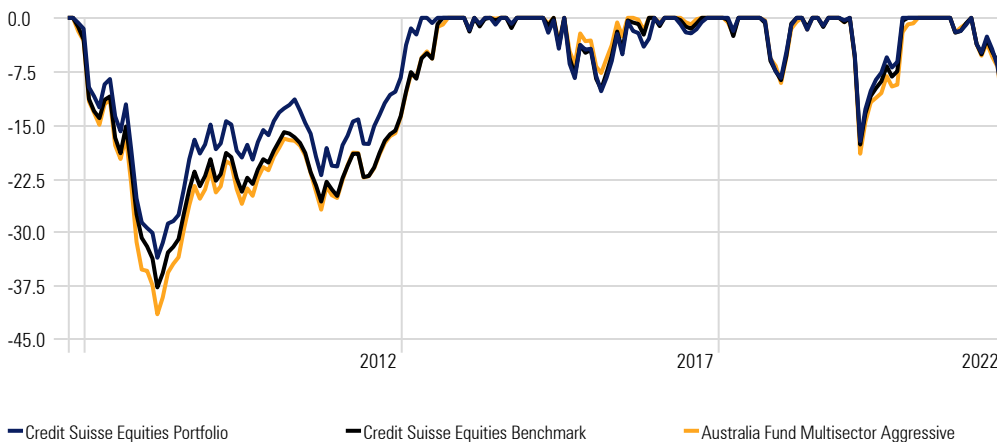
Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Monthly Returns - Credit Suisse Equities Portfolio

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
2022	-3.70	-1.21	2.36	-1.80	-2.45	-5.17							-11.54
2021	0.16	0.85	2.87	2.50	1.92	2.77	1.68	2.10	-2.00	0.16	0.84	1.49	16.36
2020	3.63	-5.26	-12.70	5.40	2.96	1.74	1.09	2.33	-1.52	0.85	7.07	0.56	4.69
2019	3.99	3.94	1.24	3.26	-1.67	4.09	2.24	-1.10	1.39	0.28	3.38	-0.34	22.50
2018	1.02	0.18	-1.85	2.95	0.53	2.06	1.84	1.59	-0.47	-5.20	-1.98	-1.00	-0.61
2017	-0.87	1.64	2.20	2.78	-0.92	-1.14	-0.14	0.58	1.01	4.45	1.41	0.64	12.14
2016	-3.99	-2.33	2.12	2.56	4.03	-2.93	4.84	-1.33	-0.29	-1.95	1.16	4.20	5.72
2015	4.15	5.01	0.64	-2.09	1.75	-3.96	5.78	-6.44	-2.15	5.08	-0.68	0.13	6.56
2014	-1.71	2.26	-0.83	1.09	0.75	-0.95	2.95	0.10	-0.84	1.88	1.39	1.85	8.10
2013	5.00	2.41	-0.87	4.13	1.27	-0.73	5.64	0.36	1.01	2.65	1.72	2.06	27.34
2012	3.78	1.61	2.38	0.35	-3.98	-0.05	3.03	1.87	1.92	1.32	0.48	2.22	15.74
2011	1.42	0.65	0.56	0.89	-1.79	-1.99	-1.75	-3.87	-3.20	4.88	-3.03	-0.13	-7.43
2010	-4.06	0.99	3.79	-0.54	-4.33	-1.17	2.22	-2.52	3.07	2.04	-0.85	2.36	0.57
2009	-0.97	-4.99	3.15	3.96	0.48	1.20	5.10	5.43	3.41	-2.34	1.58	3.38	20.57
2008	-8.35	-1.37	-1.77	3.70	0.82	-5.73	-2.44	4.51	-7.14	-8.47	-4.53	-1.09	-28.38
2007										8.50	-0.70	-0.83	

Drawdown

Time Period: Since Common Inception (1/10/2007) to 30/06/2022


Trailing Returns

	YTD	1 month	3 months	6 months	1 year	2 years	3 years	4 years	5 years	Since Inception
Credit Suisse Equities Portfolio	-11.54	-5.17	-9.16	-11.54	-7.74	6.70	4.51	5.75	7.25	5.71
Credit Suisse Equities Benchmark	-11.64	-5.86	-8.87	-11.64	-7.36	7.67	4.47	5.71	6.77	4.77
Australia Fund Multisector Aggressive	-12.55	-6.12	-9.37	-12.55	-7.69	7.77	3.65	4.56	5.81	4.17

Credit Suisse performance figures are before fees and taxes

Source: Credit Suisse AG

Source: Morningstar Direct

Return/Risk Analysis

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Annualized Return	5.71	4.77	4.17
Cumulative Return	5.71	4.77	4.17
Std Dev	10.64	10.39	10.71
Sharpe Ratio	0.32	0.24	0.18
Sortino Ratio	0.44	0.32	0.23
Calmar Ratio	0.17	0.13	0.10
	Inv	Bmk1	Bmk2
Best Month	8.50	7.63	8.12
Worst Month	-12.70	-12.97	-14.16
Best Quarter	14.59	13.74	15.06
Worst Quarter	-14.28	-14.92	-16.83
Up Months Percent	62.15	61.02	61.58
Down Months Percent	37.85	38.98	38.42
Average Gain	2.36	2.30	2.23
Average Loss	-2.57	-2.53	-2.62
Gain Std Dev	5.71	5.10	5.09
Loss Std Dev	8.07	8.14	9.21
	Inv	Bmk1	Bmk2
Longest Up Streak (Mo)	11	11	11
Run Up %	25.76	27.65	28.61
Start Date	1/10/2020	1/10/2020	1/10/2020
End Date	31/08/2021	31/08/2021	31/08/2021
Longest Down Streak (Mo)	6	7	7
Run Down %	-24.48	-11.59	-11.99
Start Date	1/09/2008	1/03/2011	1/03/2011
End Date	28/02/2009	30/09/2011	30/09/2011
Max Drawdown (Mo)	16	16	16
Max Drawdown %	-33.64	-37.80	-41.57
Peak Date	1/11/2007	1/11/2007	1/11/2007
Valley Date	28/02/2009	28/02/2009	28/02/2009

Relative Performance

Time Period: Since Common Inception (1/10/2007) to 30/06/2022

	Inv	Bmk1	Bmk2
Excess Return	0.94	0.00	-0.59
Alpha	0.92	0.00	-0.57
Beta	1.00	1.00	1.01
R2	95.98	100.00	96.46
Tracking Error	2.15	0.00	2.04
Information Ratio (geo)	0.42		-0.28
Treynor Ratio (geo)	2.88	1.97	1.37
Up Capture Ratio	103.72	100.00	97.88
Down Capture Ratio	97.68	100.00	101.80
Up Number Ratio	0.99	1.00	0.99
Down Number Ratio	0.96	1.00	0.97
Up Percent Ratio	0.54	0.00	0.45
Down Percent Ratio	0.61	0.00	0.52

Summary

We believe that it is appropriate for APNIC to consider its risk profile at this time.

This consideration should be based on APNIC's investment objectives, tolerance and ability to withstand risk.

We request that the Executive Council consider the risk tolerance questions within this presentation.

Once we have answers to those questions, we will make a formal recommendation as to the appropriate recommended risk profile for the APNIC portfolio (along with any potentially appropriate accompanying Socially Responsible screens) for the Executive Council to consider and approve.

As part of this process, we will also update the Investment Policy Statement and we will provide a marked up version of this document with any proposed changes for adoption by the Executive Council as required.

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Agenda Item 10

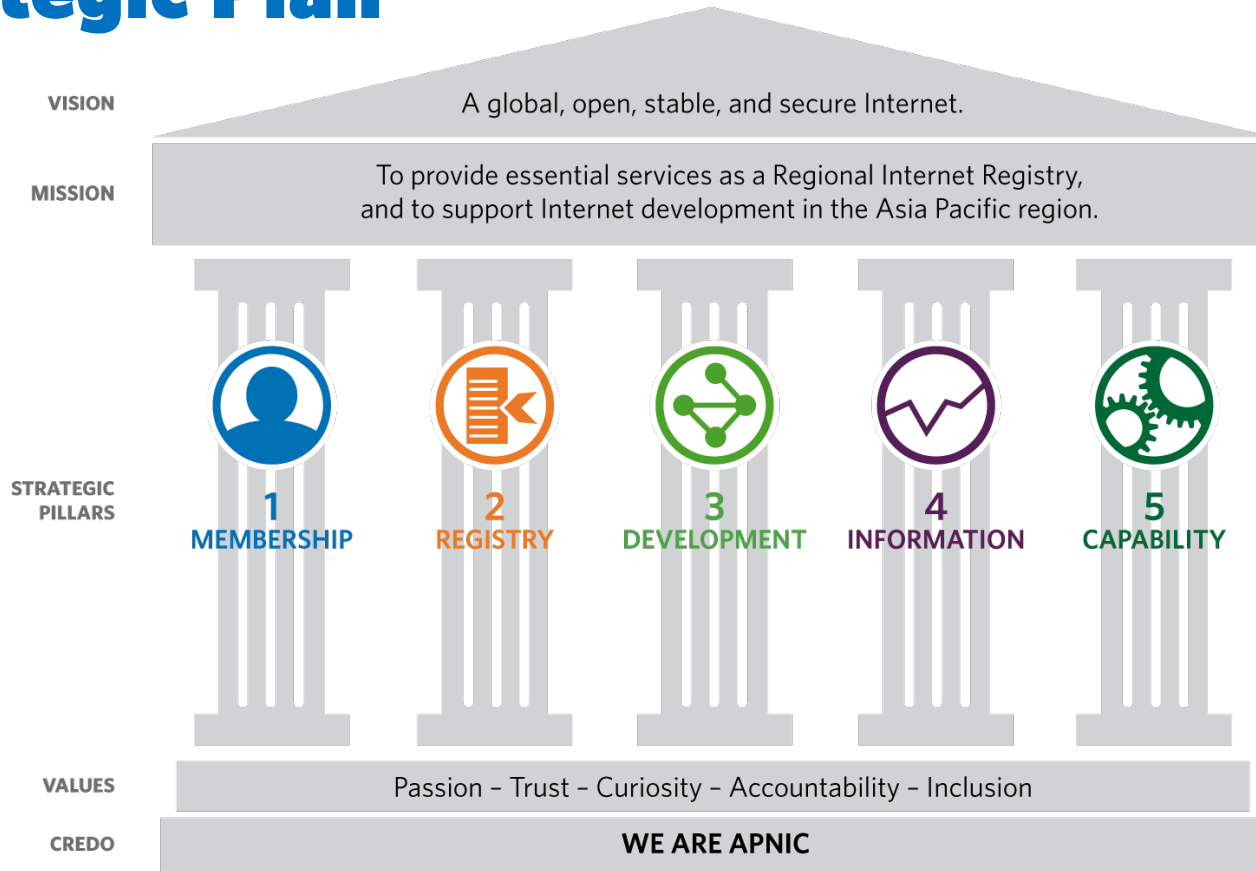
Secretariat report

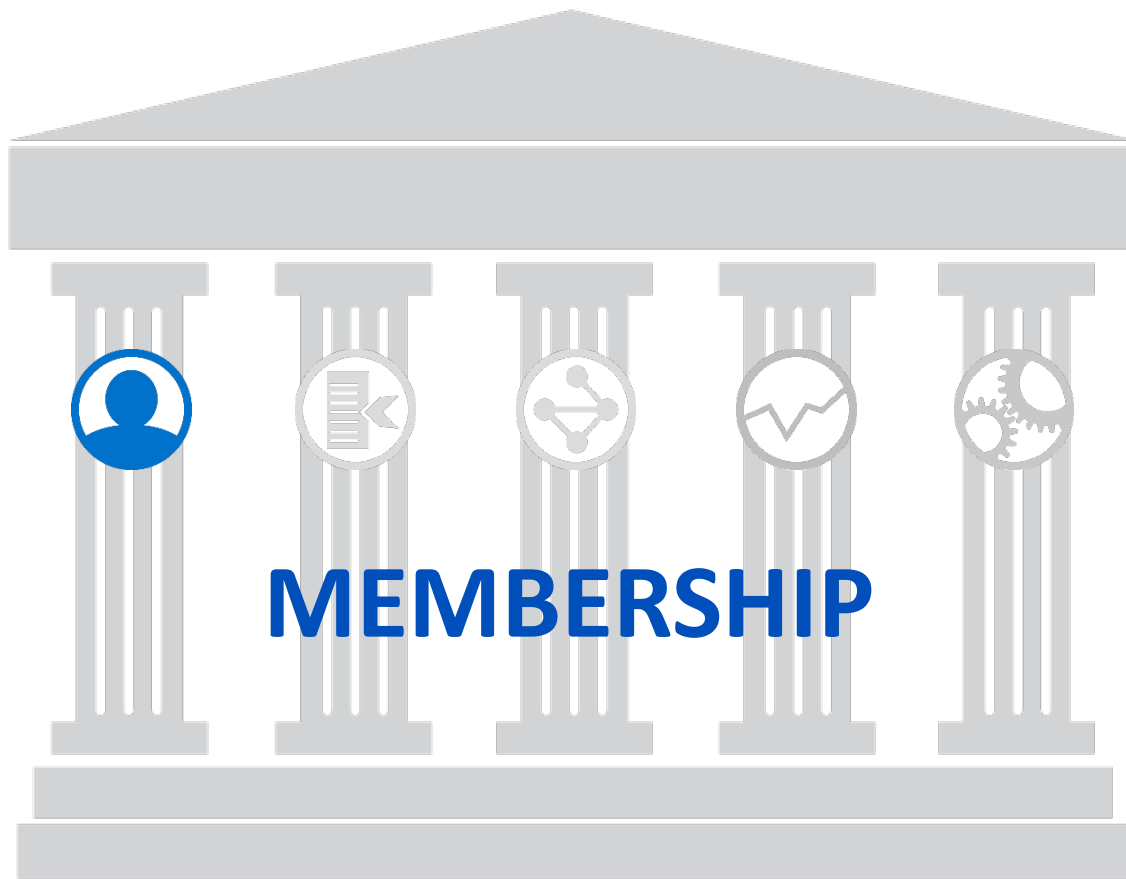
APNIC Secretariat Report

EC meeting

11 September 2022

Strategic Plan



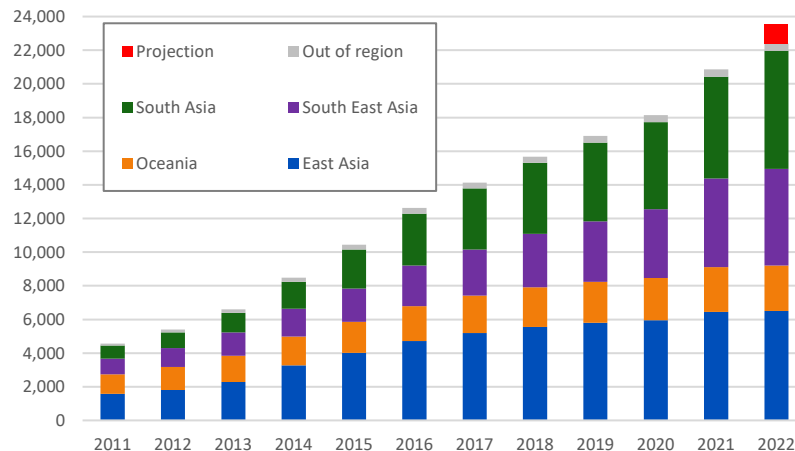
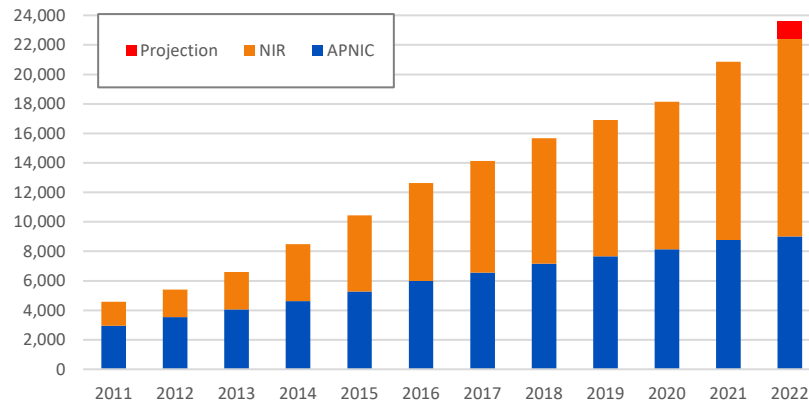


MEMBERSHIP

Member Services



- APNIC Members 9,001; NIR sub accounts 13,400
- Service satisfaction 93% 'excellent' and 'above average' (451/475)
- Member Services 48-hour SLA 100% met
- 1,726 feedback items received
406 required action and resolved
- 159 Member Services engagements across 20 economies on RPKI, transfers, TA, and historical resource transition
- 26 fraud attempts detected and prevented
- APNIC Survey: 1,622 responses; 61% new survey participants



Historical Resource Transition



Activity	Holders	%	IPv4
Attempting to contact holders	2,944	84%	5,600,256
Uncontactable holders	159	4.5%	315,648
Prefixes being claimed by holders	293	8%	986,112
Prefixes no longer needed	47	1.3%	14,336
Prefixes retained by holders	78	2.2%	425,472
Totals	3,521	100%	7,341,824

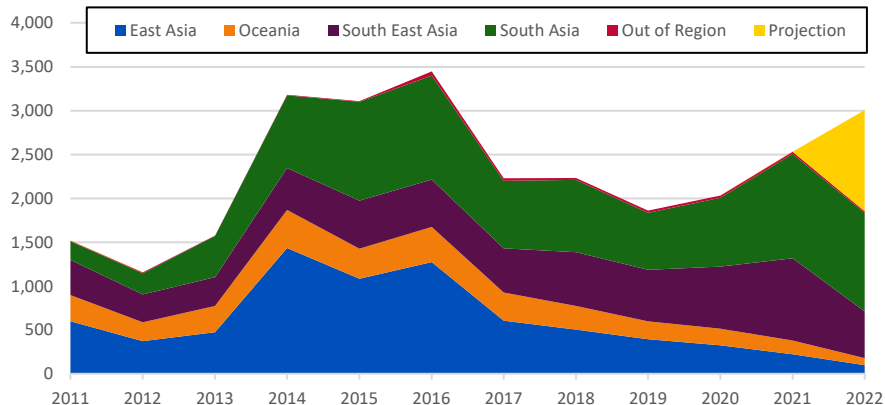
Membership Products



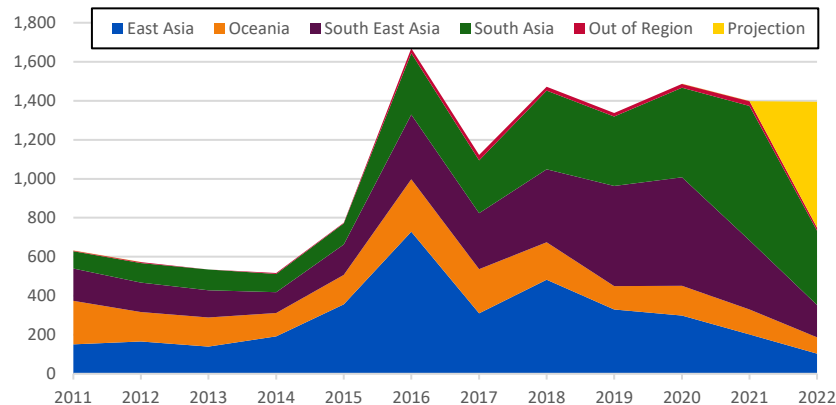
- Completed APNIC Login migration of 60K+ users to Okta
- Eduroam API using Okta SSO developed for Academy
- Reduced proxy voting time in EC election from 90 to 20 sec
 - Record 1,270 Members participated in EC election in March 2022
- Automated process for historical resource holders converting to Associate Membership
- Automated LDC graduation process
- MyAPNIC
 - Availability 99.99%
 - User satisfaction 81%



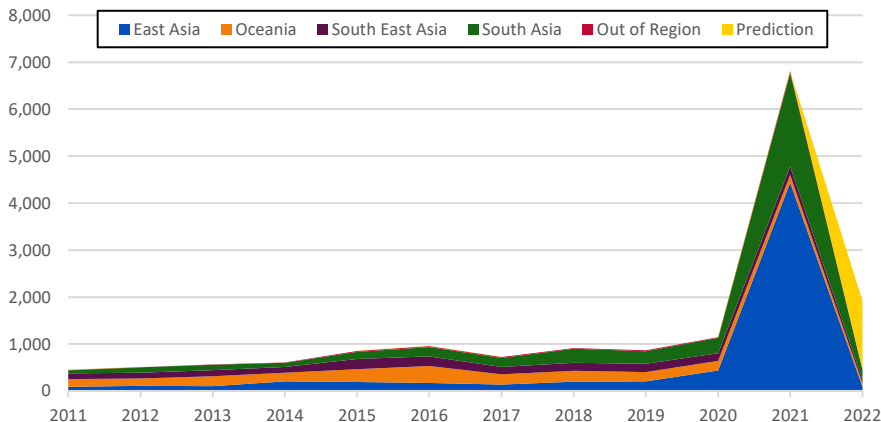
Resource Delegations



IPv4

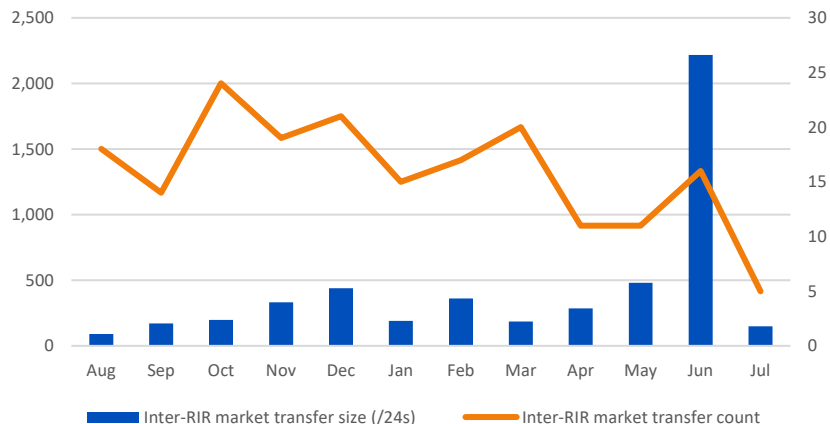
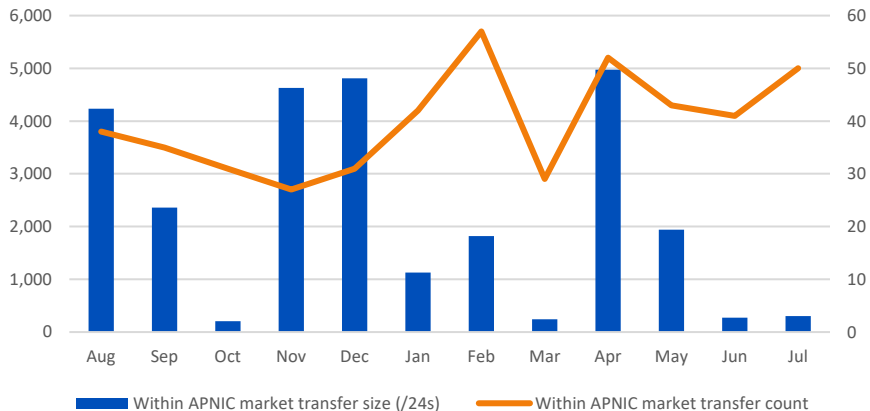


IPv6

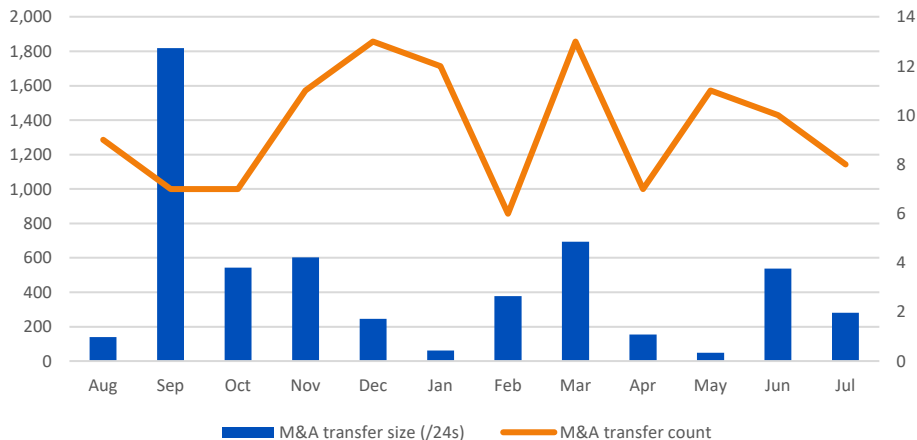


ASNs

APNIC Transfers



Market



Inter-RIR

M&A

Registry Products



- NIR API (beta) deployed to production
- APNIC RDAP updated to comply with RIR RDAP profile
- Availability of whois, RDAP, RPKI, RDNS, IRR: 99.99%
- Route management pre-validation in final testing
- APNIC Registry API prototype deployed for public testing; production API development scheduled for 2023
- Identified 'highly critical' services and completed gap analysis for Five-9s readiness

Policy Development



Proposal	Conference	Status
prop-141: Change maximum delegation size of IPv4 from 512 (/23) to 768 (/23+/24) addresses	APNIC 53	Presented for discussion only
prop-142: Unify Transfers Policies Text	APNIC 53	Reached consensus, adopted, implemented.
prop-143: ASN to Customer	APNIC 53	Reached consensus, adopted, implemented.
prop-144: Experimental Proposal Allocation	APNIC 53	Reached consensus, adopted, implemented.
prop-145: Single Source for Definitions	APNIC 54	Scheduled
prop-146: Aligning the Contrast	APNIC 54	Scheduled
prop-147: Historical Resources Management	APNIC 54	Scheduled
prop-148: Leasing of Resources is not Acceptable	APNIC 54	Scheduled

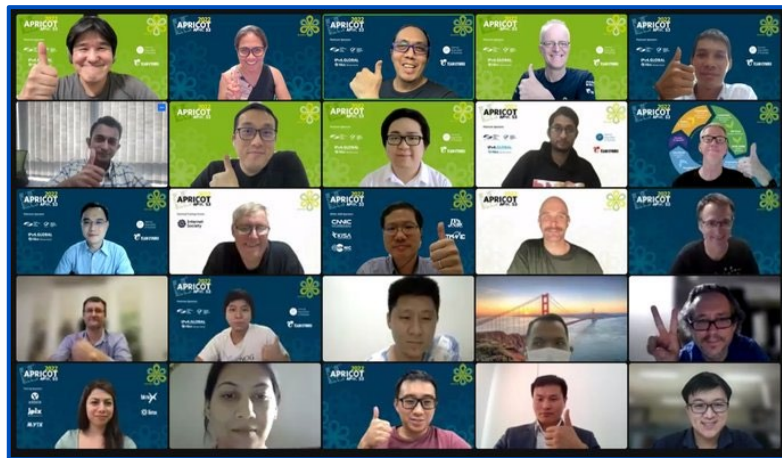




APNIC Conferences



- APNIC 53 / APRICOT 2022
 - 21 Feb – 3 March (online)
 - 886 attendees from 64 economies
 - Tutorials: 519
 - Conference: 502
 - 3,854 YouTube views
 - NPS: 60
- APNIC 54
 - 8-15 September (hybrid)
 - Co-located with APriGF 2022, APSIG 2022, SGNOG 9
 - Revised hybrid program structure



APNIC 54
SINGAPORE
8 - 15 September 2022

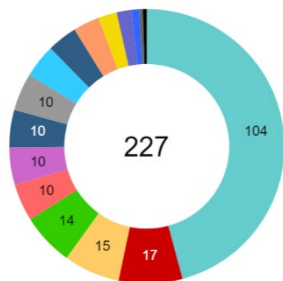


APriGF 2022

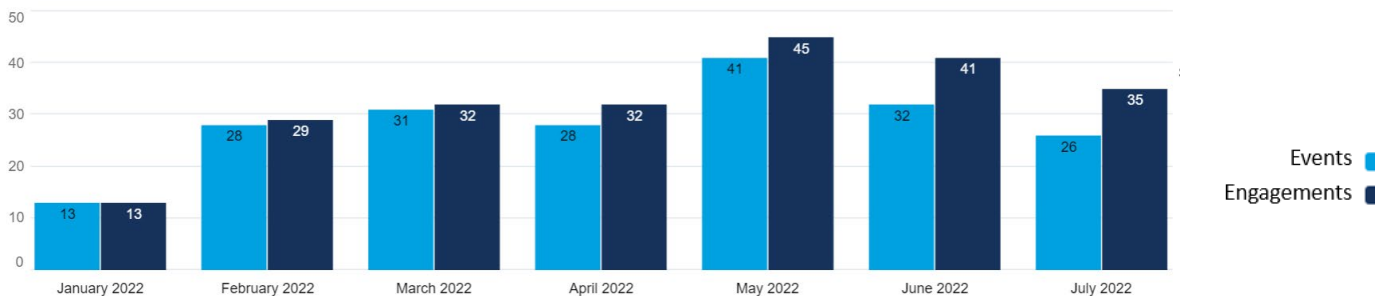
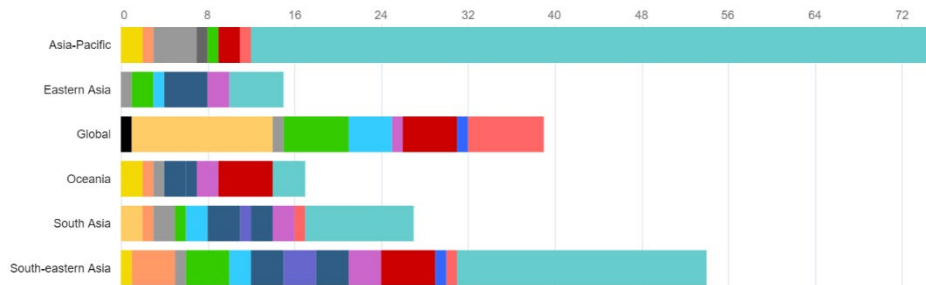
APSIG 2022

SGNOG 9

Community Engagement



- APNIC
- CERT Engagement
- Coordination
- Development
- Foundation Engagement
- Foundation Projects
- Government
- Internet Governance
- Member Outreach
- Membership Development
- NIR Engagement
- NOG
- Other
- Product Engagement
- Security
- Technical
- Technical Assistance
- Training



Technical Community Support



- Supported 12 community events
 - 8 NOGs: sponsorship, speakers, and training (JANOG x2, AusNOG, PhNOGx2, bdNOG, SANOG, IDNOG)
 - Webcast and technical support for 2 events (MMIX, PhNOG)
- Supported 12 security events
 - Including 2 quarterly threat sharing community (Honeynet) events
 - Provided security training at 4 events

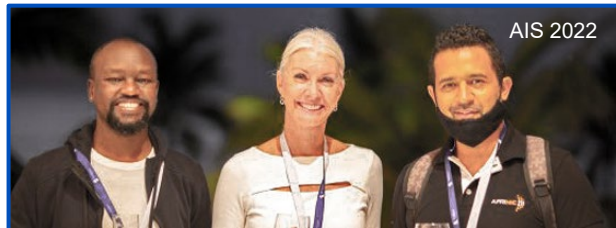


Internet Cooperation



Internet organization cooperation

- Chairing NRO EC and Coordination Groups
- Participated in OECD ITAC, ITCG (Internet Tech Community Group)
- Participated in RIR, ICANN and IETF meetings
- ICANN Root Service Governance WG; Root Zone Evolution WG; SSAC
- Support for AFRINIC



Internet governance

- 2022 IGF
 - 4 MAG and 4 IGFSAs meetings
 - Participating in the new IGF Policy Network on Internet Fragmentation
- 2022 APrIGF
 - Hosting with APNIC 54
 - Participated in MSG, Program and Fellowship Committees, Event committee and Stakeholder Engagement Committee
- Other
 - NetThing (AU), YIGF Viet Nam, YIGF Myanmar, 3rd ICANN/TWNIC Engagement Forum; VNNIC Internet Conference 2022

Government Engagement

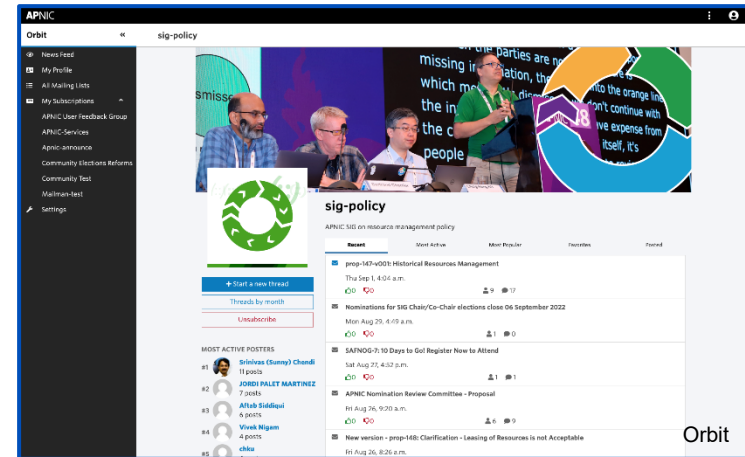
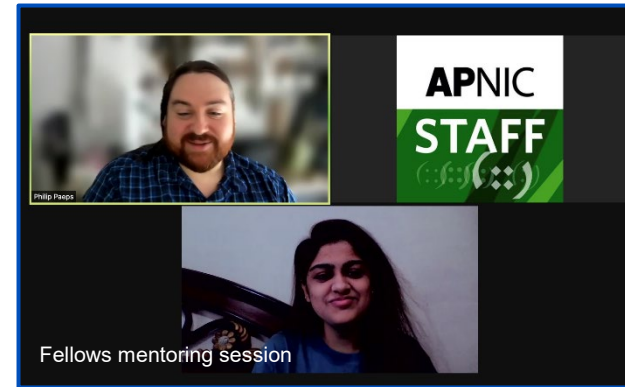


- ITU – International Telecommunications Union
 - Participation at ITU WTSA-20 and WTDC-21;
 - Collaboration on Samoa IXP
- APT – Asia-Pacific Telecommunity
 - Prep meetings for WTDC-21, PP-22;
 - Training with APT in MN and MM
- LEA training for Cyber Safety Pasifika + webinar on cyber threat landscape for Pacific LEAs
- Presented at two INTERPOL events

Community Participation



- Encouraging newcomers
 - 406 conference newcomers
 - 30 Fellows selected from 371 applicants
 - 50:50 gender balance, 37% youth
 - 14 Returning Fellows
 - 91.4% attendance at 12 webinars
 - 11 mentors held sessions with 16 fellows
- Elected leaders meetings with EC
 - in March and June
- Community Platform – ‘Orbit’
 - Built on Mailman 3 ‘Hyperkitty’
 - MVP launched at APNIC 54



APNIC Academy



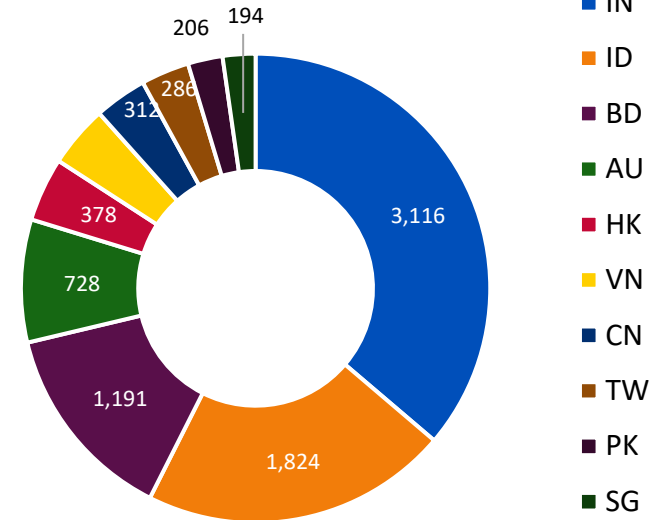
- Instructor-led training with 5 NOGs and 4 NIRs
- Updates to network security courses; added 3 new validators to RPKI labs; rebuilt DNS/DNSSEC labs
- Self-paced learning:
 - New OSPF course + Five new labs
 - Soon: Introduction to Cybersecurity and BGP
 - Japanese subtitles for IPv6 and Routing Fundamentals
- TA provided to 10 Members on RPKI, DNSSEC, IXPs, VRP, and ROA deployment
- Eduroam now available to eligible Academy users
- 30 Community Trainers (volunteer); 4 Retained Community Trainers (RCTs)

	Instructor-led	Self-paced
Courses	90	1,315 completions; 2,147 hours contact
Students	2,360	4,360 new (21,932 in total)
Locations		48 economies
Virtual Labs		4,516 labs 4,452 hours
Webinars	12 webinars 665 attendees	





- 10 online RPKI tutorials, 5 with CTs
- Work with Members in Fiji to clean up invalid routes
- RPKI Deployathon held in Sydney before AusNOG 2022
- One new RPKI deployment case study published
- 20 RPKI-tagged blog posts



Networks with ROAs – Top 10 CCs

IPv6



- 19 online IPv6 tutorials
- 38.12% IPv6 capability for Asia Pacific
- 69.51% Members hold IPv6 resources
- 2 new deployment stories; 44 now online
- 34 IPv6- tagged blog posts
- IPv6 deployment podcast with Reliance Jio

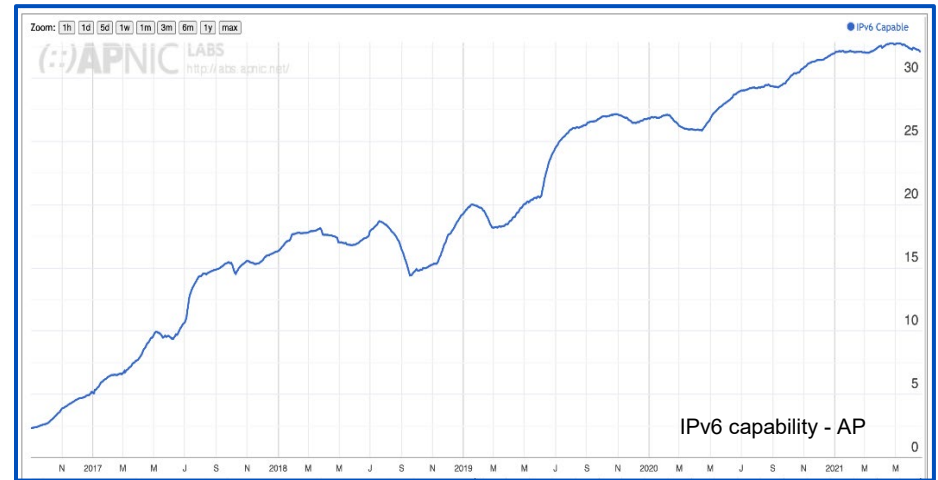
Testing, awareness key to realizing IPv6 single-stack at NTT DOCOMO

By Robbie Mitchell on 25 Apr 2022



SLTMobitel Mobile targets 100% IPv6 mobile user capability by 2024

By Robbie Mitchell on 9 Jun 2022



Internet Infrastructure Support

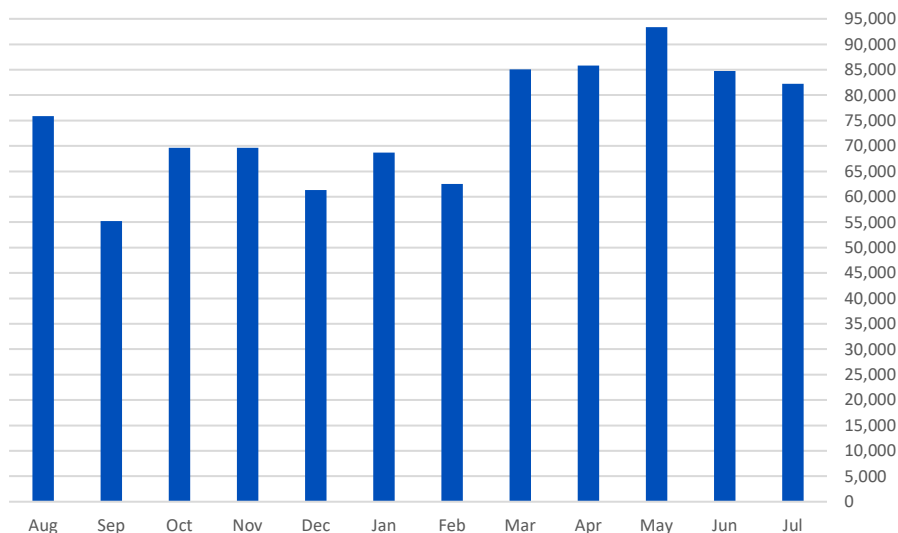


- Root servers
 - M-root deployed in Guam, Hanoi and Kuala Lumpur
 - 11 in progress (Kaohsiung, Manila, Dhaka, Bangkok, Jakarta, Ulaanbaatar, Kathmandu, Mumbai, Lahore, Kolkata, and Singapore)
 - Equipment delays continue to slow deployment
 - M-root Deployment Manager to be employed at JPRS
- IXPs
 - MVIX: waiting on equipment
- Community Honeynet and Security Threat Sharing Platform
 - Two new Community Honeynet partners in Bhutan and Lao PDR (17 total)
 - Quarterly threat sharing meetings discussing latest observations
 - Platform upgraded to support more sensors and data processing

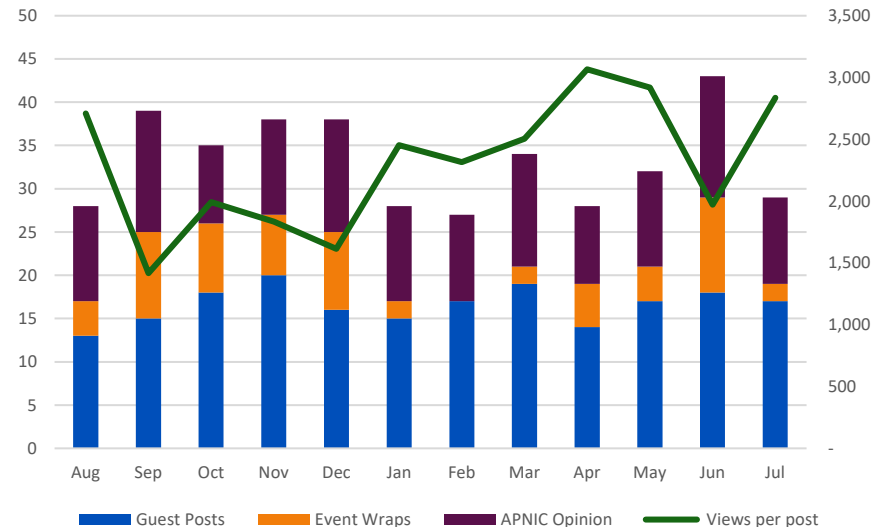




Views



Posts



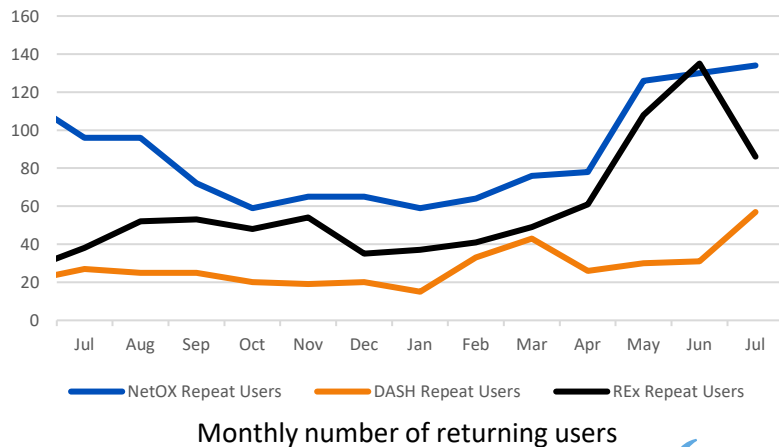
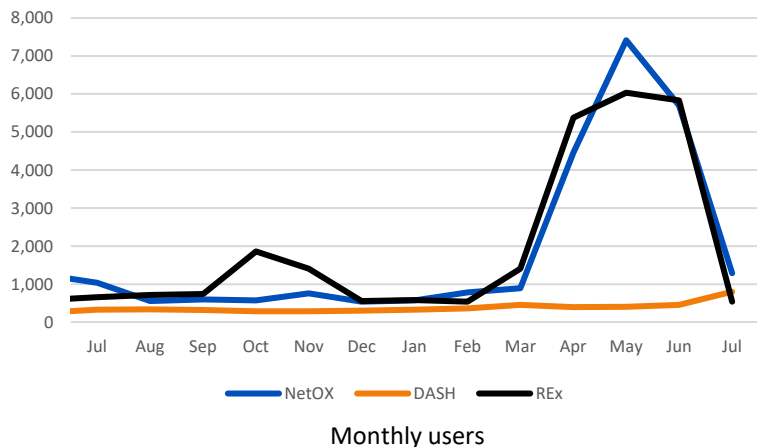
- 80,351 views/month (↑16.9% on 2021)
- 14 podcasts with 4,995 ‘impactful plays’



Information Products



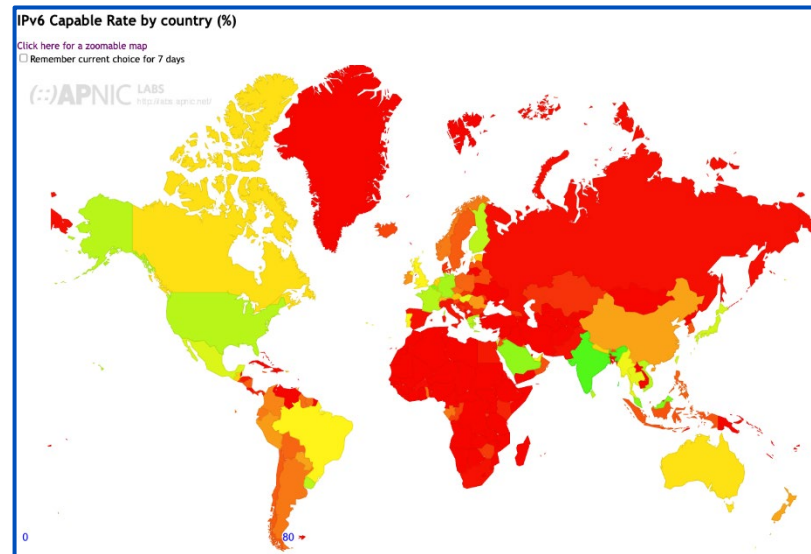
- Resource Explorer (REx)
 - Increase in new users with paid search trial
 - User interface improvements deployed
 - NPS 42, Usability 4.2
- DASH
 - Suspicious traffic alerts and routing information pages deployed
 - Work began on APNIC notifications platform
 - NPS 39, Usability 4.1
- NetOX
 - Comparison feature deployed
 - Improvements to systems monitoring and service stability deployed
 - NPS 48, Usability 4.4



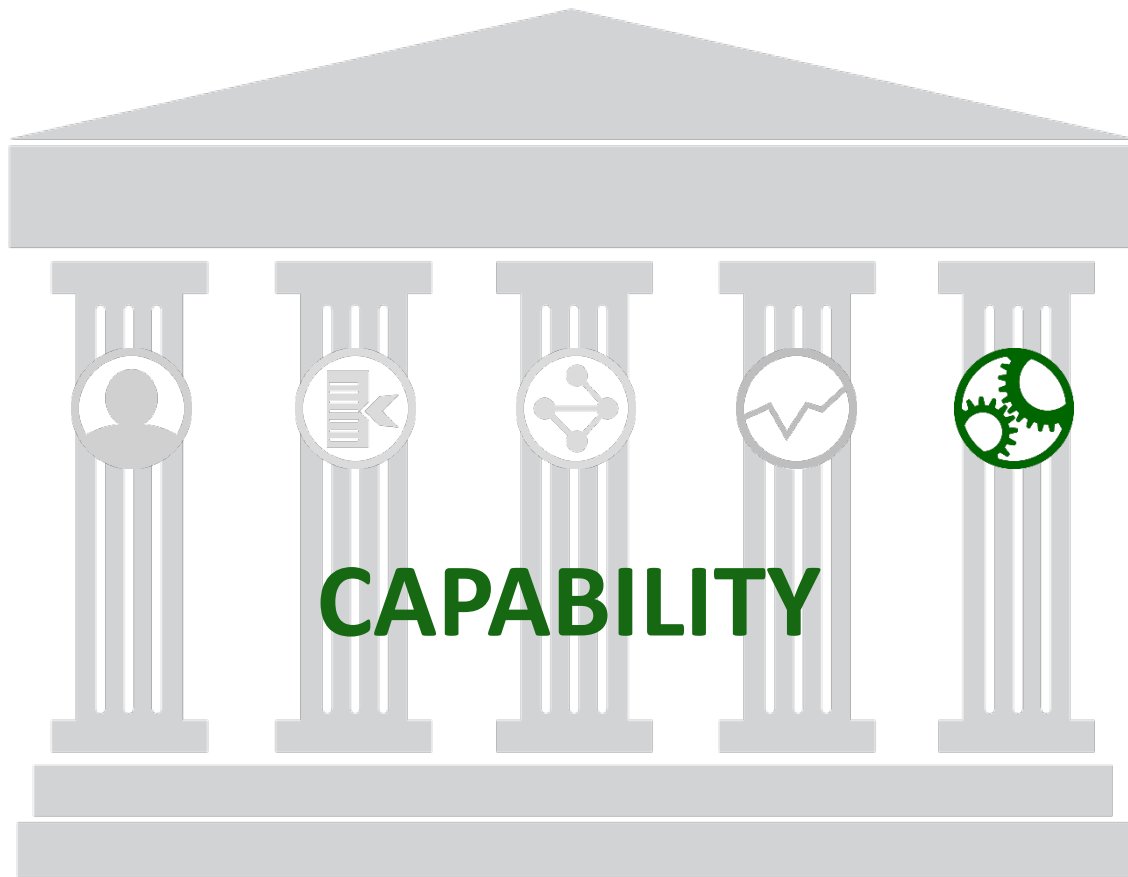
Research and Analysis



- 24 presentations at RIRs, NOGs, IETFs
- 18 blog posts and 6 podcasts
- Research
 - IPv6 capability
 - Address pools analysis
 - BGP growth and anomaly detection
 - DNS: DOH, large responses
 - QUIC measurements
 - ECN and RSA 2048-bit in DNSSEC
- Cooperation
 - Routing data for MANRS
 - DNSSEC measurements with ICANN
 - Cloudflare collaboration



<http://stats.labs.apnic.net/ipv6>



Internal Technical Infrastructure



Architecture and technical coordination	<ul style="list-style-type: none">• CentOS 7 will be replaced with Redhat Enterprise Linux 7• Developed requirements for repository health metrics
Network and infrastructure	<ul style="list-style-type: none">• Progress on SG shared POP for critical services and M-root anycast
Systems and platforms	<ul style="list-style-type: none">• Migrated community mailing lists to Mailman 3 with Okta SSO• New HSM configured for RPKI failover• RPKI RRDP deployed to Cloudflare and GCP• Deployed RDNS anycast in Mumbai, Tokyo, Melbourne, Miami
Internal security	<ul style="list-style-type: none">• HackerOne support for VRP and continuous penetration• ISO 27001 certification audit in August• Published DNS CAA for APNIC domains
Enterprise applications and IT support	<ul style="list-style-type: none">• Confluence migrated to Atlassian Cloud• Sage People with Okta rolled out• Migration of legacy applications roadmap to Okta• RT upgrade
Security infrastructure	<ul style="list-style-type: none">• External monitoring of email SPF and DMARC through MXToolbox• APNIC DANE TLSA record now using a public certificate• Zero-trust network and server access project team created
Service availability	<ul style="list-style-type: none">• 99.99% critical services; 99.99% non-critical services

Quality and Capability



- Data management and governance framework
- Automation of charts for reports and presentations
- Biannual People Pulse survey conducted in April; 83% staff engagement (global benchmark 76%);
- Career pathway and succession framework in development
- 20 roles filled
 - Open roles filled within an average 52 days
 - Extended delays to fill some technical roles
- New Whistleblower Policy (legal requirement)
- Workspace planning
 - Upgrade of Cordelia St and design of new office site




A New Home for APNIC



- Site purchased by APIDT
- Design work underway
- Expected completion 2025



Success Indicator Status

Targets			
	Completed	In progress	At risk
Membership	1	17	2
Registry	1	15	0
Development	8	33	10
Information	4	8	0
Capability	5	33	0
Total	14%	77%	9%

THANKS!



APNIC Secretariat Report

1 January – 31 July 2022

CONFIDENTIAL DRAFT 1.0

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Executive Summary

Introduction

This report is provided to the APNIC Executive Council (EC) for the quarterly meeting on 11 September 2022. It provides a summary of activities from 1 January to 31 July 2022.

The structure of this report reflects the APNIC Strategic Plan 2020-2023 and the 2021 Operational Plan, with activities reported according to Strategic Pillar and Workstream, and against their Success Indicators.

Feedback on this report is very welcome.

Highlights

The following is a summary of significant highlights for the year to date, also grouped according to Strategic Pillar.

Membership

- APNIC SLA met 100%, and Service Satisfaction ratings exceeded 95% (1A.1).
- APNIC welcomed 19 IDNIC staff for three days of operations meetings (1A.1).
- 233 new Members (net) brought total APNIC membership to 9,001 (1A.3).
- The APNIC Survey 2022 was completed, to be reported at APNIC 54 (1A.4).
- Achieved 81% satisfaction for MyAPNIC (1B.1).
- Completed the APNIC Login SSO migration of more than 60,000 users from Keycloak to Okta (1B.1).

Registry

- The percentage of Members holding IPv6 addresses reached 69.51% (2A.1).
- The IRT validation rate was 80.9% (2A.2).
- An NIR services API was deployed (2B.2)
- A prototype APNIC Registry API was deployed for public testing (2B.4).
- prop-142, -143 and -144 reached consensus at APNIC 53 and were endorsed by the EC for adoption (2C.1).

Development

- APRICOT 2022 / APNIC 53 attracted 886 participants and achieved an NPS of 60 (3A.1).
- APNIC 54 will be co-located in Singapore with APRIGF 2022, APSIG 2022 and SGN0G 9 (3A.1).
- APNIC participated in 199 events and recorded 227 community engagements and 555 touchpoints. Of these, APNIC staff attended 70 (35%) physically (3C.6).
- 30 Fellows (15 male, 15 female) selected from 371 applicants for the 2022 Fellowship Program. (3D.3).
- APNIC Academy added one new course and five new labs to its online catalogue (3E.1).
- 90 instructor-led training courses were delivered to 2,289 attendees, and 12 webinars to 6,651 attendees (3E.2).
- The Retained Community Trainer program was introduced, with four CTs recruited (3D.4).
- IPv6 capability in the Asia Pacific reached 38.12% (3E.6).

- M-root servers were deployed in Kuala Lumpur, Hanoi and Guam (3F.3).

Information

- The Blog averaged 80,351 views per month, 16.9% above 2021's monthly average of 68,721 (4A.1).
- Fourteen episodes of the 'PING' Podcast were published, averaging 354 'impactful plays' per episode (4A.1).
- Promotion via paid search significantly increased REx and NetOX users (4A.2).
- Eighteen APNIC Labs research articles were published, and 24 research presentations delivered (4B.3).

Capability

- Deployment of a POP in Singapore for APNIC and M-root services (5A.2).
- Deployed new RDNS anycast nodes in Mumbai, Tokyo, Melbourne, and Miami (5A.3).
- The staff engagement level of 83% (April) exceeded the global benchmark of 76% (5C.1).
- Preparations are being made for the future move to new APNIC premises (5C.5)
- A Whistleblower Policy was finalized, and an external provider engaged (5D.2).

Budget Performance

The following table summarizes budget performance to date, for PY (staff time) allocation, and operational and capital expenditure, across all workstreams.

Pillar	Workstream	PY			Expense			Capital		
		Budget	Actual	Variance	Budget	Actual	Variance	Budget	Actual	Variance
Membership	Member Services	14.67	13.54	8%	1,637,932	1,418,121	-13%	-	-	0%
	Membership Products	9.40	8.24	-12%	1,014,365	909,672	-10%	-	-	0%
	Membership Reporting	0.87	1.18	36%	379,576	368,673	-3%	-	-	0%
Registry	Registration Services	5.11	5.15	1%	416,133	418,241	1%	-	-	0%
	Registry Products	9.30	7.86	-16%	1,468,686	1,338,108	-9%	230,000	-	-100%
	Policy Development	0.75	0.74	-2%	228,836	271,885	19%	-	-	0%
Development	APNIC Conferences	4.15	4.33	4%	547,307	433,476	-21%	43,000	9,450	-78%
	Foundation Support	1.31	1.96	50%	118,512	0	-100%	-	-	0%
	Community Engagement	4.71	5.07	8%	944,835	969,856	3%	-	-	0%
	Community Participation	1.95	2.50	28%	249,036	200,665	-19%	-	-	0%
	APNIC Academy	19.58	12.14	-38%	2,912,631	1,881,570	-35%	25,000	-	-100%
	Internet Infrastructure Support	2.90	1.12	-61%	1,422,607	301,212	-79%	60,000	-	-100%
Information	Information Products	8.87	7.76	-12%	785,932	757,121	-4%	-	-	0%
	Research and Analysis	0.87	1.13	30%	612,602	476,854	-22%	123,000	52,700	-57%
Capability	Internal Technical Infrastructure	16.81	14.25	-15%	2,260,145	1,768,911	-22%	509,700	197,144	-61%
	Finance and Business Services	12.09	12.42	3%	1,603,812	1,741,596	9%	40,000	5,179	-87%
	Employee Experience	7.19	6.44	-11%	1,634,439	1,475,364	-10%	387,500	24,658	-94%
	Governance	1.68	2.01	20%	435,671	498,441	14%	-	-	0%
		122.21	107.84	-12%	18,673,056	15,229,767	-18%	1,418,200	289,131	-80%

Notes: ■ <= 25% variance ■ > 25% <= 50% variance ■ > 50% variance

Table 1: Budget performance summary

Tracking Success Indicators

The status of Success Indicators in the document's following pages is denoted by a coloured circle for at-a-glance reference on progress.

- Completed
- In progress
- At risk

1 Membership



1A Member Services

Operations

1A.1 Member service delivery

Objective: Deliver excellence in service to APNIC Members.

Service requests SLA

- The SLA to respond to Member queries within 48 hours (two working days) has been 100% met.

Service satisfaction ratings

- 95% of service satisfaction ratings (451/475 requests) were either 'Excellent' or 'Above Average'.
- Follow up of all 'Poor' ratings revealed 6 poor feedback ratings were submitted in error when completing the feedback form (the form was improved in January to reduce the chances of error).
- Other 'poor' ratings included 5 requests that were out of scope for the APNIC Helpdesk, and 4 requests by Members with additional questions (all resolved).

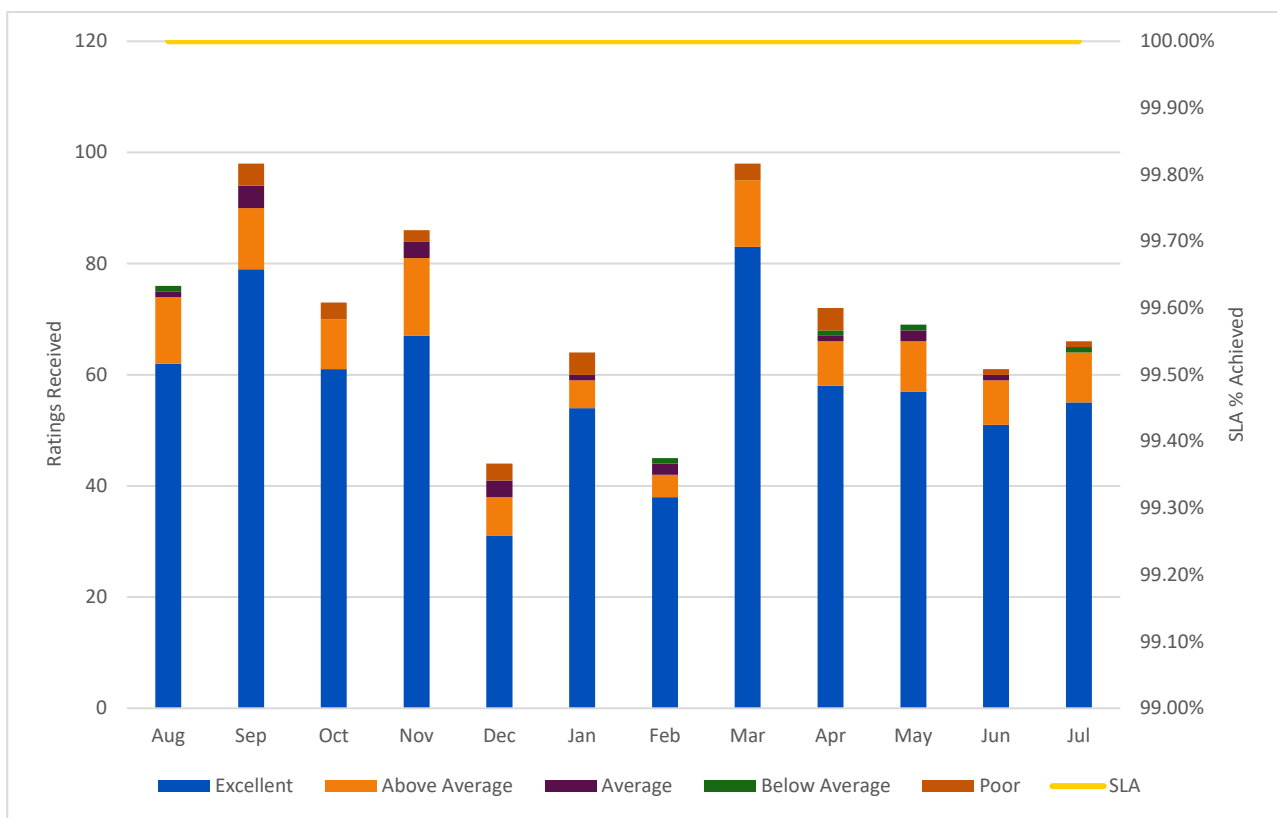


Figure 1: Service SLA and satisfaction

Member Outreach

- There were 159 Member Services engagements across 20 economies, covering RPKI, resource transfers, technical assistance, awareness of upcoming events, and the historical resources transition project. High interest from Bangladesh (consistent with the economy’s growth profile) and BDNOG interactions account for its elevated touchpoint count.
- APNIC welcomed 19 members of IDNIC staff for three days of meetings in Brisbane in June-July. The meetings covered registry operation, hostmaster/member services, community development, conferences, security and product management among other topics.

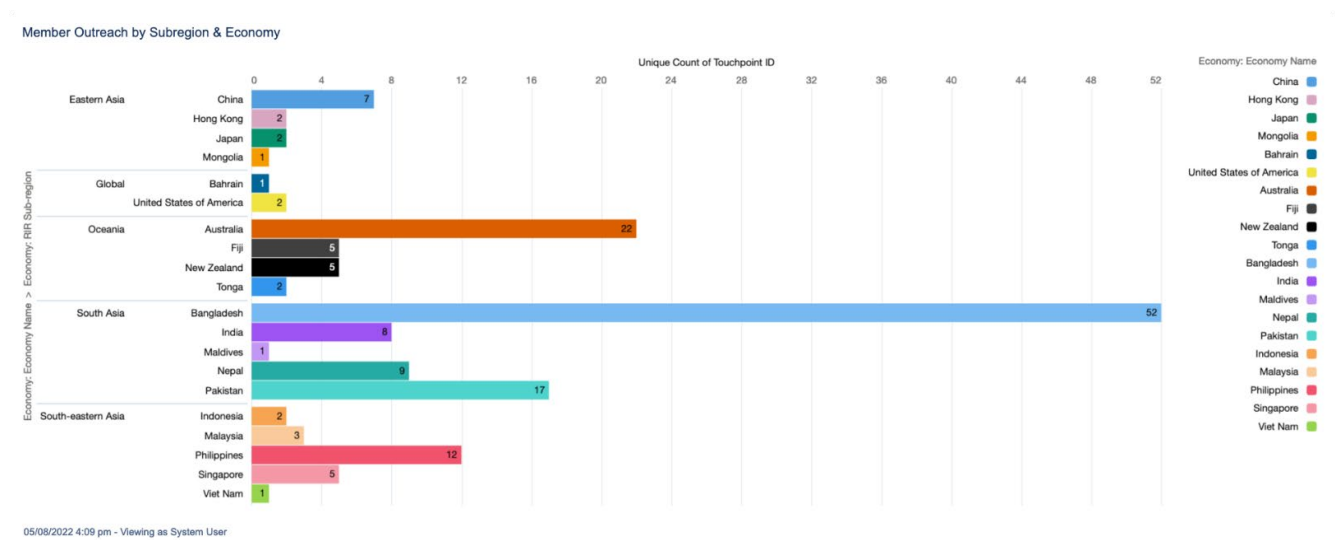


Figure 2: Member outreach touchpoints per economy

Fraud Handling

- Fraud cases remained low, with most involving attempts to open APNIC accounts with fabricated documents.

Type	Jan	Feb	Mar	Apr	May	Jun	July
Identity theft	-	-	-	-	-	-	-
Fabricated documents	2	5	8	5	2	-	2
Fabricated needs	1	1	-	-	-	-	-
Total fraud cases	3	6	8	5	2	-	2

Table 2: Fraud cases

Success Indicators – 1A.1.		Results	Status
1	Increase Member outreach touchpoints by at least 20% from 148 in 2021.	159 touchpoints	●
2	Maintain Helpdesk SLA of two business day response to enquiries.	100%	●
3	Maintain Member Service satisfaction of at least 93% “excellent and above average”.	95%	●
4	Proactive Member service engagement in at least 47 economies.	20 economies	●
5	Conduct quarterly meetings with all NIRs.	Q1 and Q2 completed	●

1A.2 Member experience

Objective: Members and the community enjoy a positive user experience and can easily provide feedback across all APNIC products and services.

Feedback Summary

- Members and the community provided 1,726 feedback items, with 406 requiring action (investigating, monitoring, or fixing the issue). All have been resolved.
- Feedback topics included conference and training content and product and service improvements.

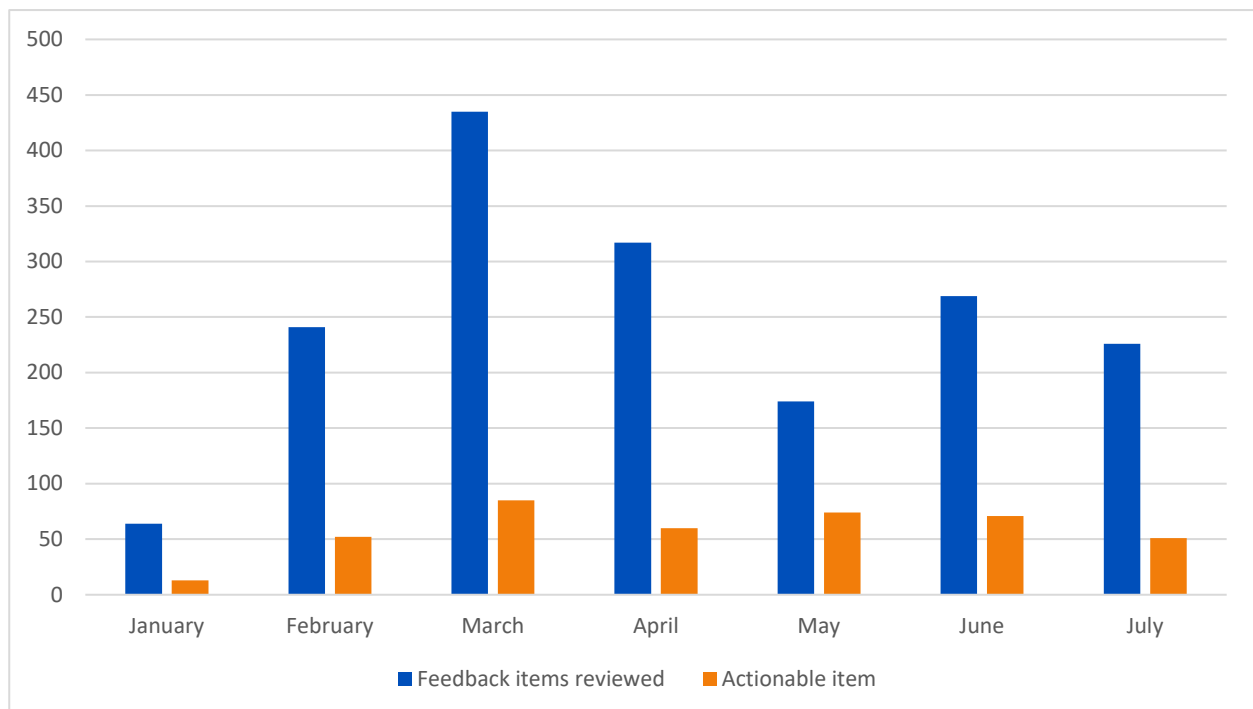


Figure 3: Feedback Received/Actionable

User Feedback

- Community members are encouraged to join the voluntary User Feedback Group to provide views on product developments. This group is currently 520 people.
- There have been 130 feedback engagements (user experience tests, surveys, and one-on-one interviews) with Members.

Website Usability

- A baseline System Usability Scale (SUS) score of 67/100 for the website was recorded in February. Improvements have been made to page design, content, and navigation (including mobile) and testing is scheduled to determine the updated score.

	Success Indicators – 1A.2.		Status
1	100% of improvement suggestions are assessed and followed up.	406/406 resolved	●
2	Increase engagement with User Feedback Group at least 20% from 298 in 2021.	130 activities	●
3	Achieve online System Usability Scale (SUS) score of 68/100.	67/100	●

1A.3 Membership development

Objective: Ensure organizations that may need APNIC products and services can discover and access them easily.

- New Member outreach was conducted at the ITCN Expo in Pakistan, PCTA in the Philippines, CommunicAsia in Singapore, bdNOG 14 in Bangladesh, and SANOG 38 in Nepal.
- A total of 425 new Members joined APNIC, including four from Service Partners and seven from Member referrals. The net new Members added (including closures and reactivations) was 233.

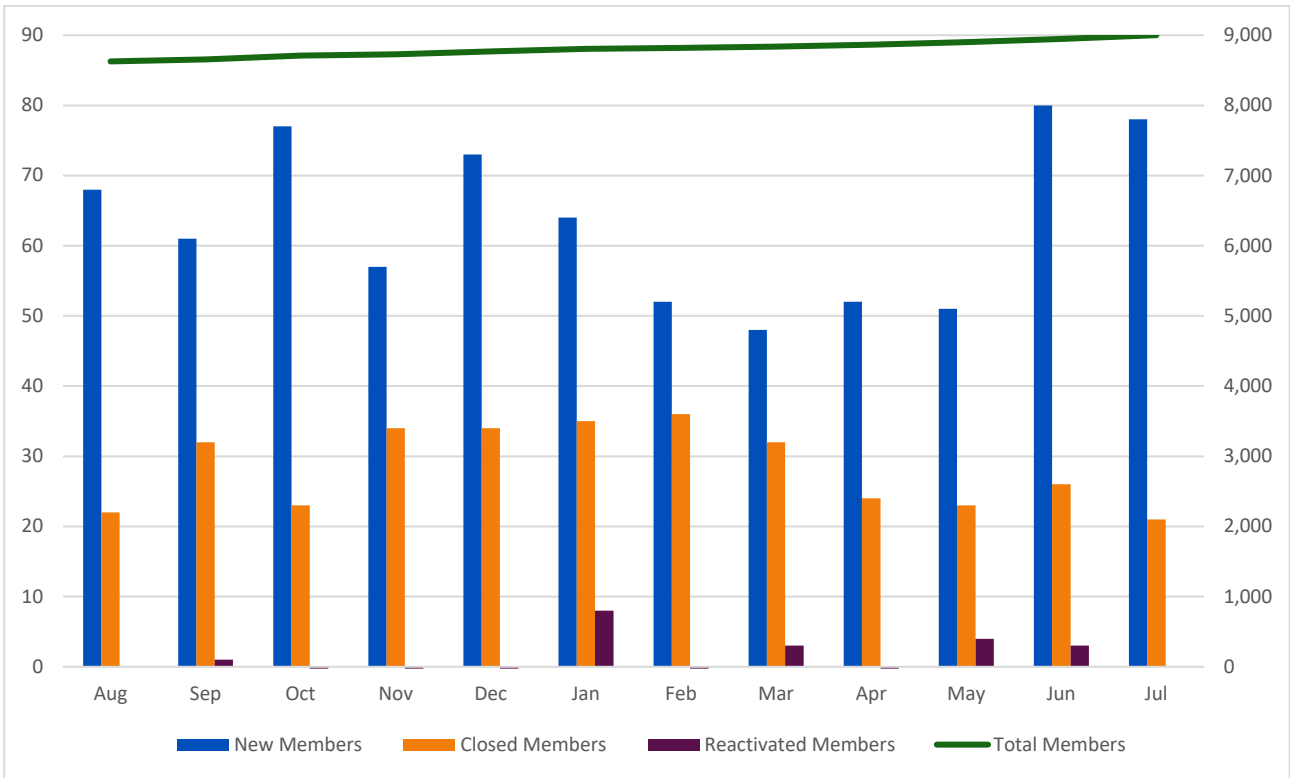


Figure 4: Membership transactions

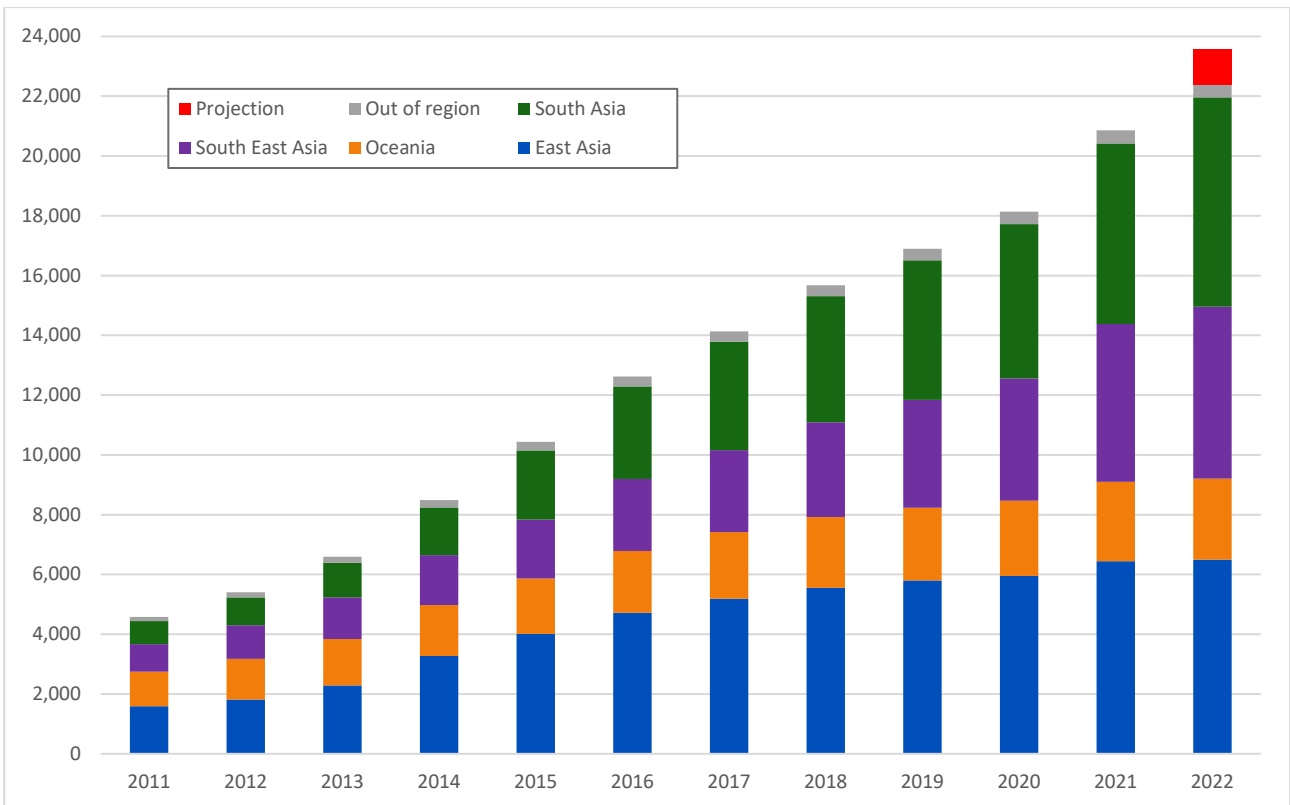


Figure 5: Total membership (APNIC + NIR, by subregion)

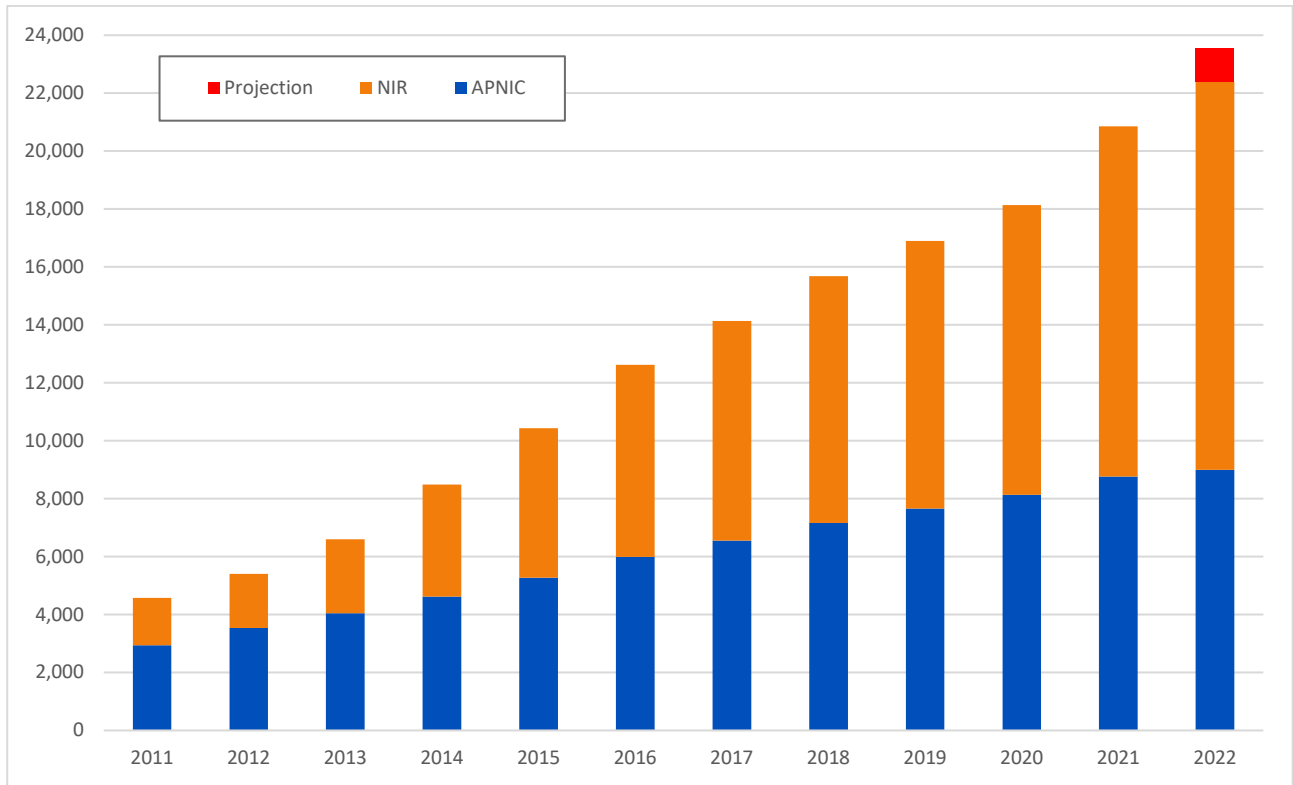


Figure 6: Total membership (APNIC + NIR)

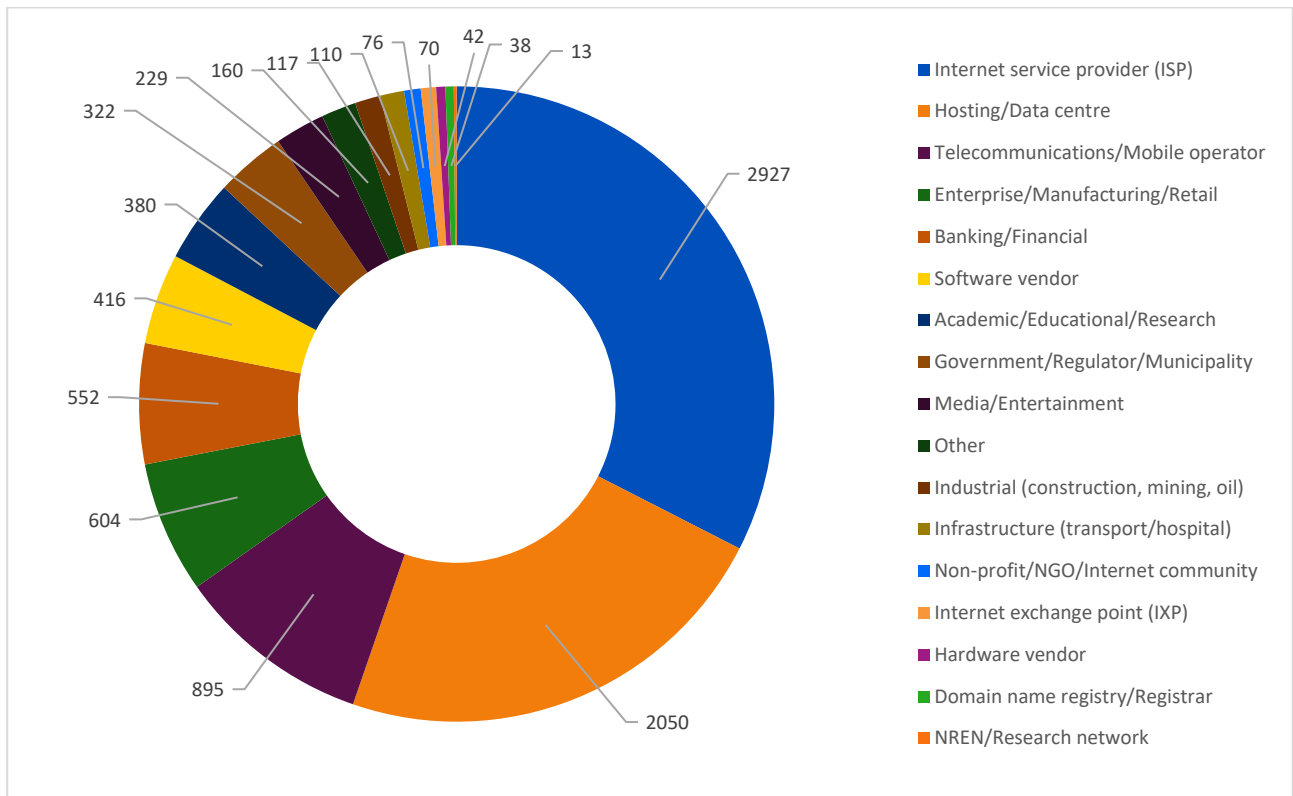


Figure 7: APNIC membership by industry type

Success Indicators – 1A.3.		Results	Status
1	At least eight membership development activities in target economies.	5/8	●
2	Achieve at least 492 new Members (net) in 2022.	233 (net)	●

1A.4 APNIC Survey

Objective: Update understanding of Member and community needs, and how APNIC can best serve them.

- Survey interviews were completed in April. Thirty-seven interviews were conducted (24 Members, 6 stakeholders, 7 NIRs) across 26 economies. The draft interview report was provided to the APNIC EC.
- The survey questionnaire was developed and released in June (closing in July). A total of 1,622 Members and community stakeholders completed the survey, with 61% being new survey participants. The results report will be presented at APNIC 54.

Success Indicators – 1A.4.		Results	Status
1	Increase total survey response by at least 10% from 1,624 in 2020.	1,622 responses	●
2	Achieve at least 10% of responses by new survey participants.	61%	●

Investments

1A.5 Historical resources transition

Objective: Prepare for transition to new fee structure for Historical Resources from 1 Jan 2023.

- Reviewed and classified 7,341,824 historical IPv4 addresses, originally registered to up to 3,636 different holders, not currently managed under an APNIC account. The total number of holders reduces if multiple claims are made by the same holder.
- Contact is progressing with historical address holders to advise of the new fee structure and help them to establish APNIC membership or return the resources.

	April	July	Percentage	Addresses
Attempting to contact holders	3,368	2,944	84%	5,600,256
Uncontactable holders	-	159	4.5%	315,648
Prefixes being claimed by holders	234	293	8%	986,112
Prefixes no longer needed	16	47	1.3%	14,336
Prefixes retained by holders	18	78	2.2%	425,472
Total number of holders	3,636	3,521	100%	7,341,824

Table 3: Cases of historical resource holders

	Success Indicators – 1A.5.	Results	Status
1	Attempt contact with all historical resource holders.	577/3,521	●
2	All 7,341,824 historical IPs are either registered to a current APNIC account or deregistered.	In progress	●
3	All remaining unused resources are claimed, transferred, or returned to APNIC.	In progress	●

1B Membership Products

Operations

1B.1 Membership product management

Objective: Provide products and services that make it easier for APNIC Members to manage their accounts.

- Achieved 81% product satisfaction for MyAPNIC.

	Success Indicators – 1B.1.	Results	Status
1	Maintain MyAPNIC availability of at least 99.99%.	99.99%	●
2	Achieve Membership Products satisfaction of at least 80%.	81%	●

Investments

1B.2 Membership product development

Objective: Develop and improve products and services that make it easier for APNIC Members to manage their accounts.

- The migration of more than 60,000 APNIC Login SSO users from Keycloak to Okta was completed. Work on security and usability improvements continues.
- An edu roam API using the Okta SSO was developed and provided to the Academy team.
- Supported the EC election platform at APNIC 54 for a record 1,270 participating Members, and reduced proxy voting time from 90 seconds to 20 seconds (78% improvement).
- Usability of Help Centre articles was improved by adding visual indicators to distinguish between article types.
- Several internal processes in the Least Developed Country (LDC) graduation process were automated to eliminate human error.
- Implemented changes to ARMS and billing processes to allow historical resource holders to convert to Associate Members.

	Success Indicators – 1B.1.	Results	Status
1	Achieve all 2022 goals, according to the Membership Products Roadmap .	4 completed 3 in progress 3 in backlog	●

1C Membership Reporting

Operations

1C.1 Planning and reporting

Objective: Ensure that APNIC remains fully accountable to its Members by providing timely, complete and accurate information about all activities.

- The 2022 Activity Plan and Budget and the 2021 Annual Report were presented at the APNIC AGM on 3 March and published online.
- All EC Minutes have been published in line with the KPI.
- A public webpage tracking progress against 2022 activities was published and updated.

	Success Indicators – 1C.1.	Results	Status
1	Publish required reports on the day of the APNIC Member Meetings.	Achieved (APNIC 53)	●
2	Publish EC Minutes within two months of each EC meeting.	Achieved	●

2 Registry



2A Registration Services

Operations

2A.1 IPv4, IPv6 and ASN delegation and registration services

Objective: Provide IPv4, IPv6 and ASN delegation and registration services to APNIC Members.

Resource pools

- The following table shows the status of all APNIC number resource pools.

	Total at 1 Jan 2022	From IANA	Transfers in	Transfers out	Total at 31 Jul 2022	Total delegated	Total reserved	Total available
IPv4 /24s	3,483,932	0	1,771	2,102	3,483,601	3,466,241	6,581	10,651
IPv6 /32s	1,067,008	0	0	0	1,067,008	98,654	113,843	854,511
ASNs	29,336	0	2	2	29,336	26,844	0	2,492

Table 4: Resource pool status

IPv4 pool status

- The following chart shows the consumption trend of APNIC’s IPv4 pool in the past 12 months.

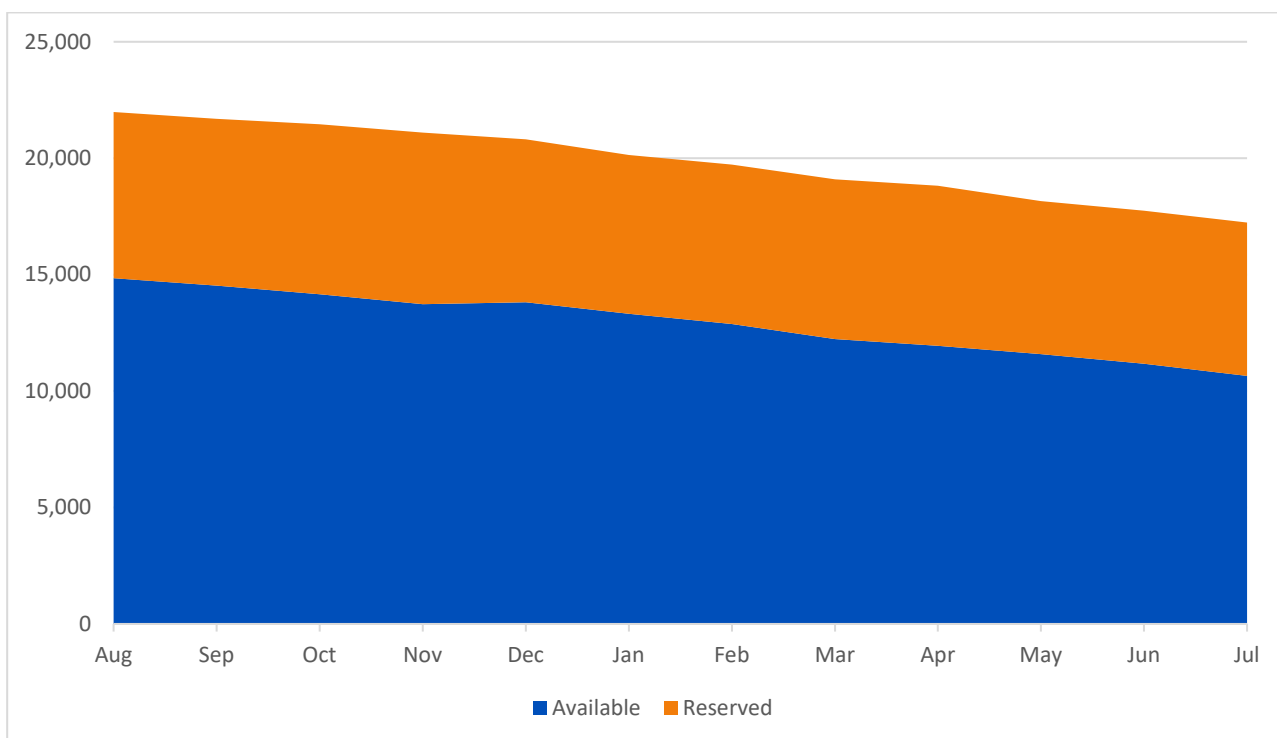


Figure 8: IPv4 pool status (/24s)

IPv4, IPv6 and ASN delegations

- The following graphs show the number of delegations for each resource type by sub-region.
- In Figure 9, the peak in March 2022 was due to large number of IPv4 delegations made by the NIR in India.

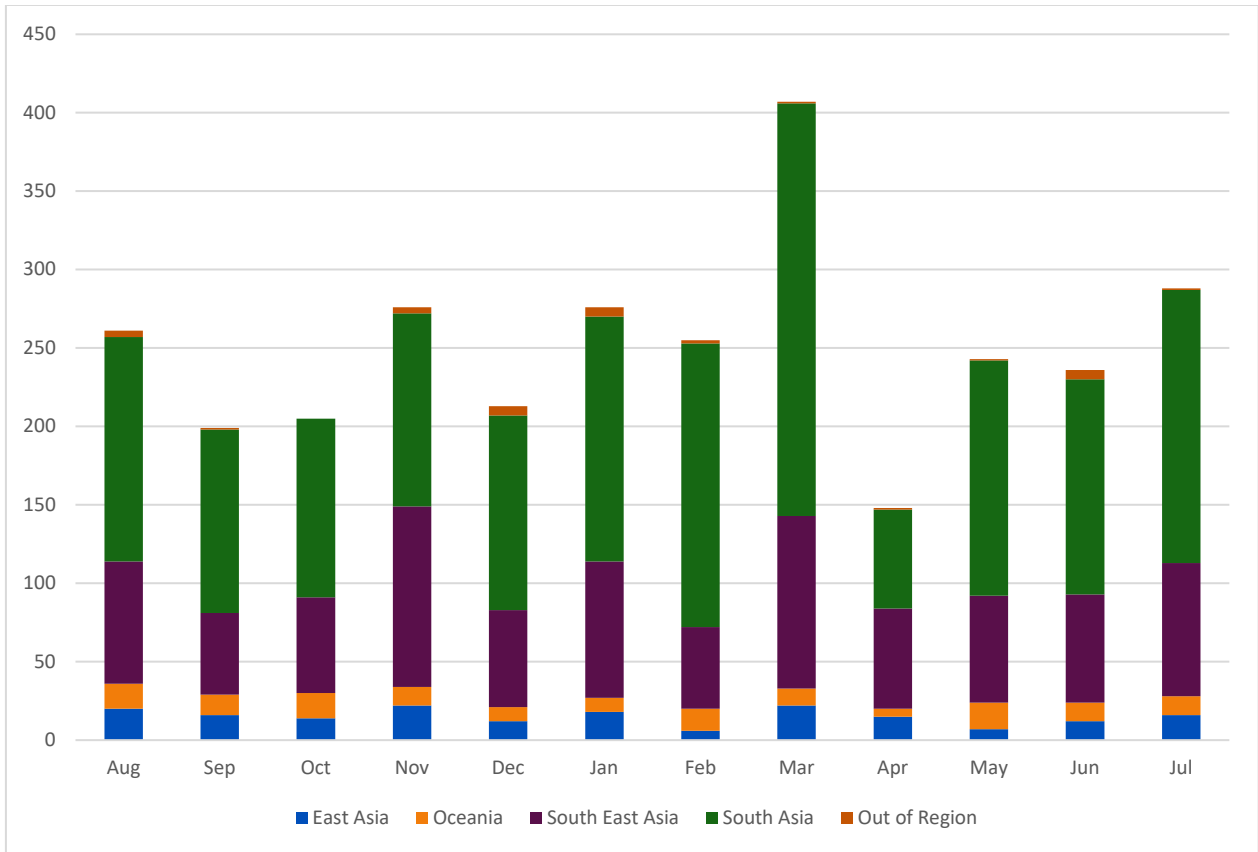


Figure 9: IPv4 delegations by sub-region

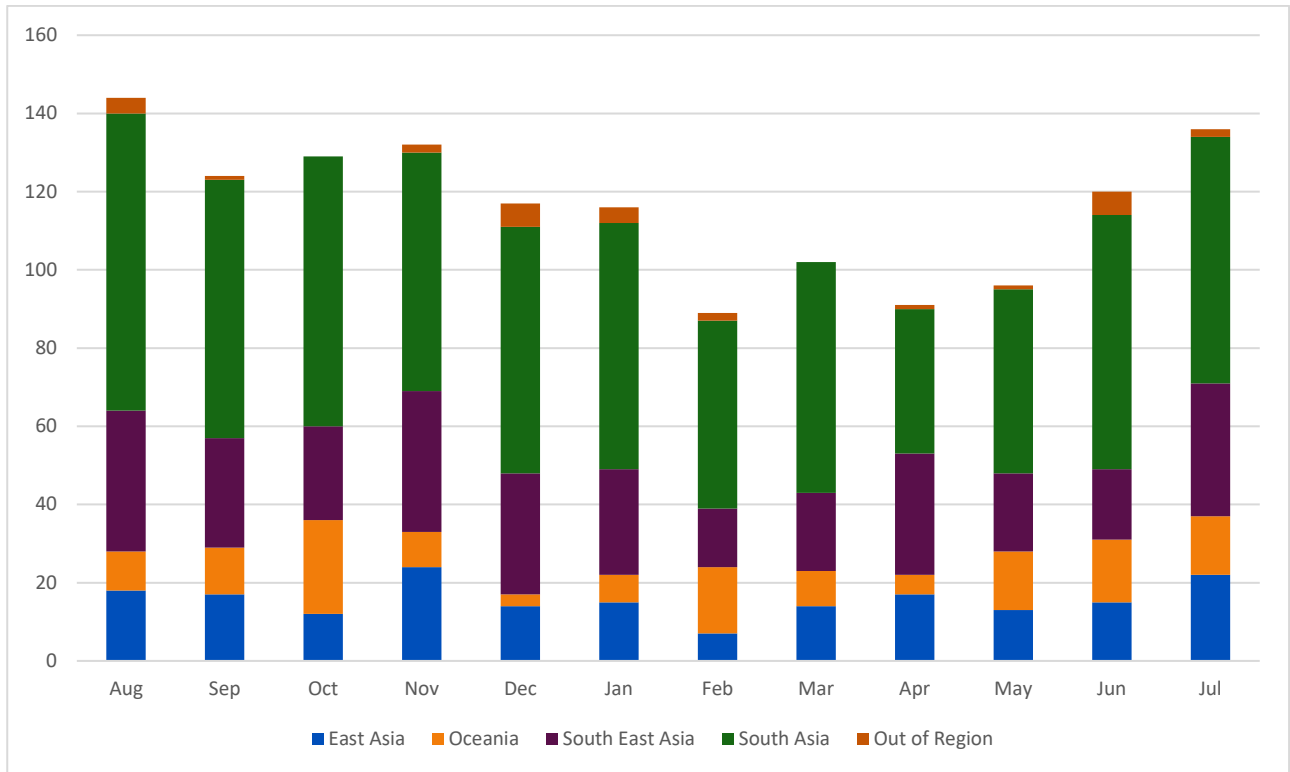


Figure 10: IPv6 delegations by sub-region

- In Figure 11, the peak in ASN delegations in October 2021 was due to an allocation to a large network in India. APNIC received an additional 4,096 ASNs from IANA to meet that request.

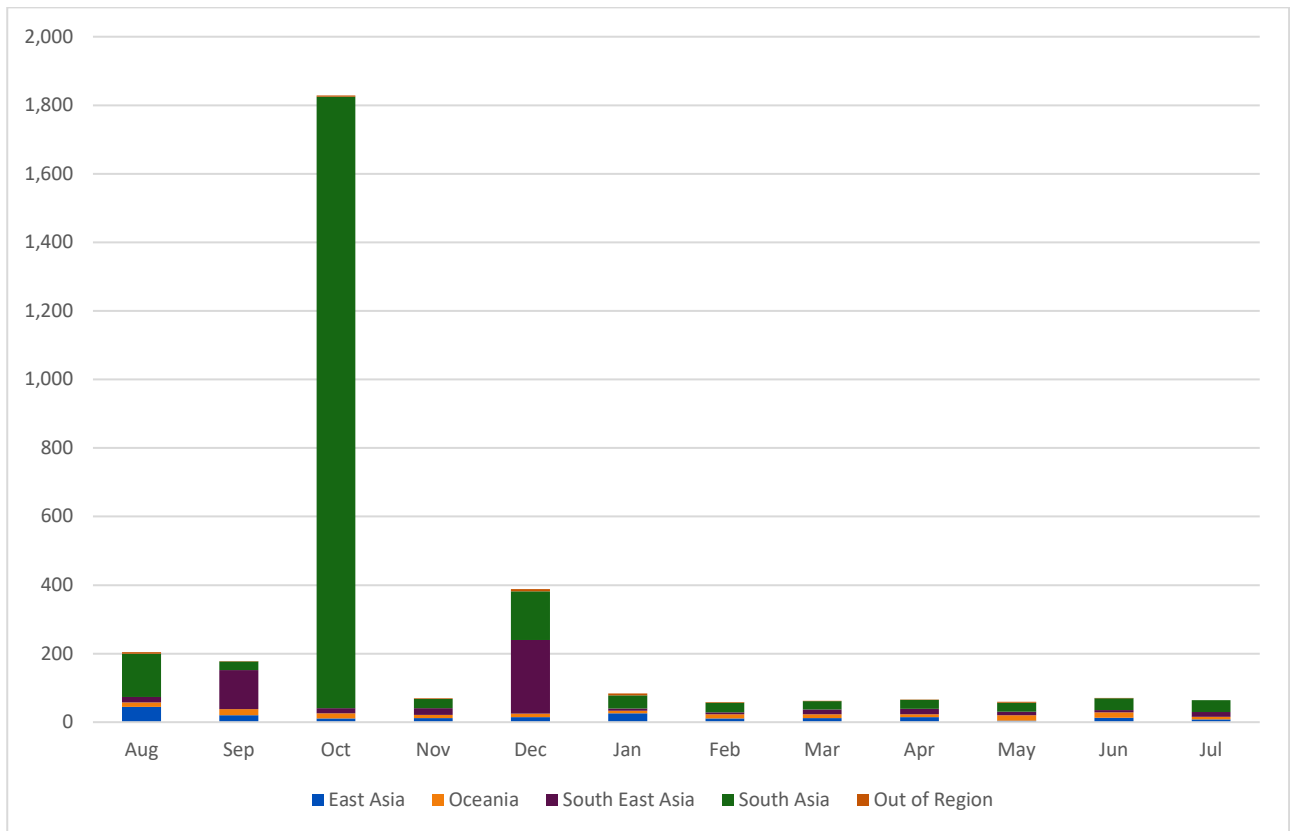


Figure 11: ASN delegations by sub-region (including NIRs)

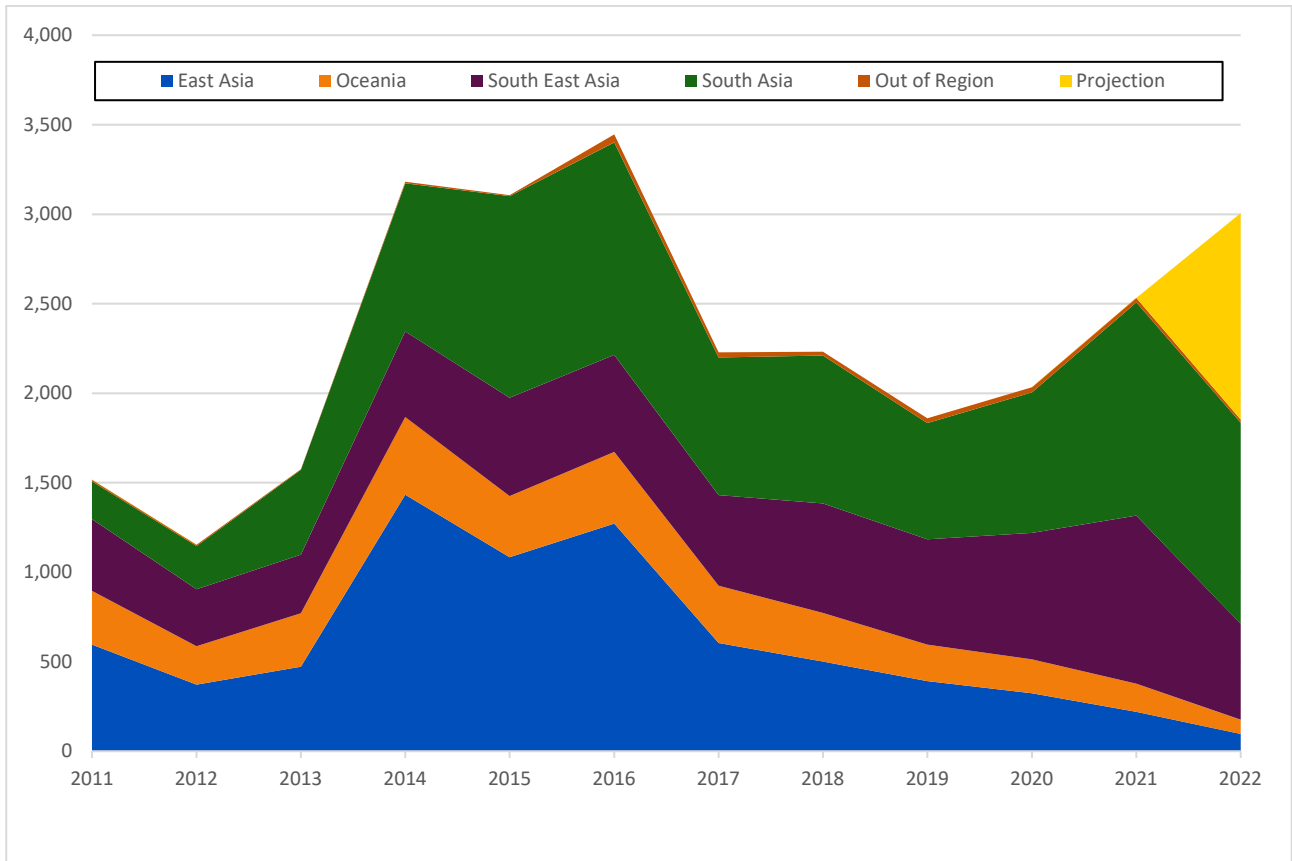


Figure 12: Annual IPv4 delegations

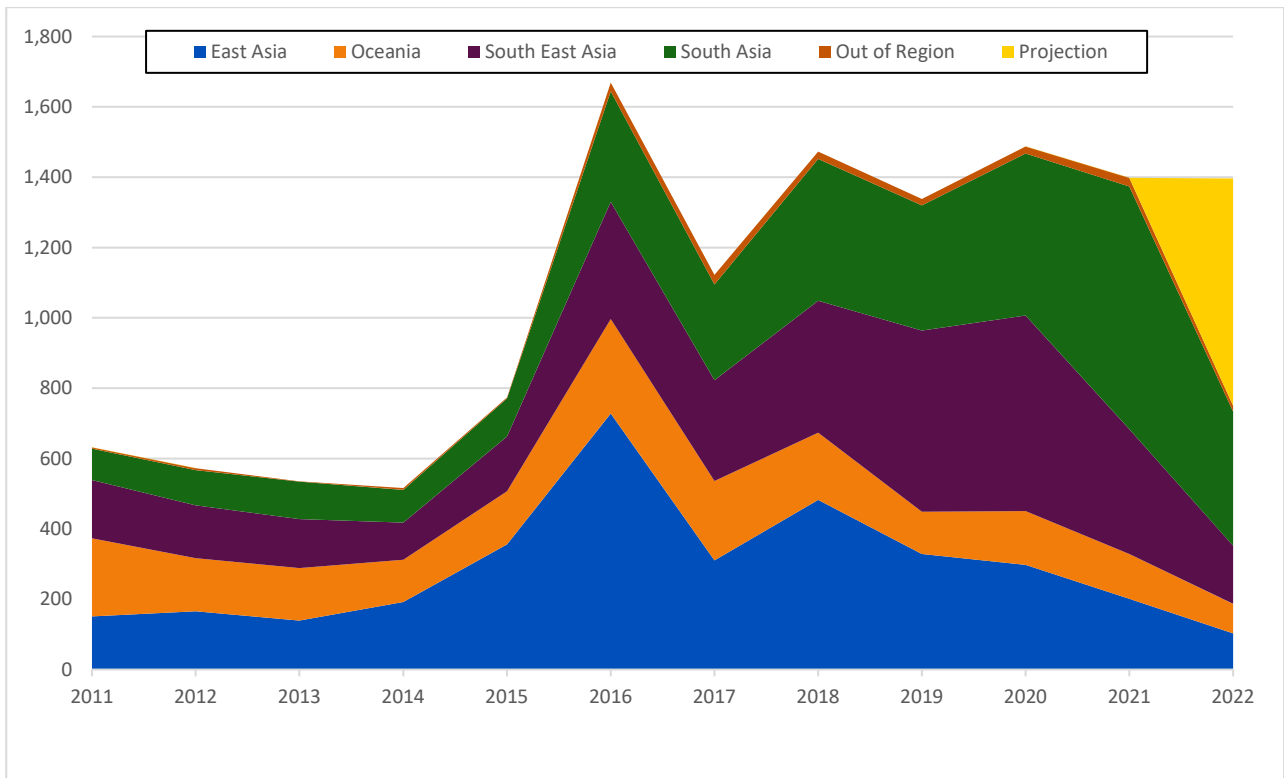


Figure 13: Annual IPv6 delegations

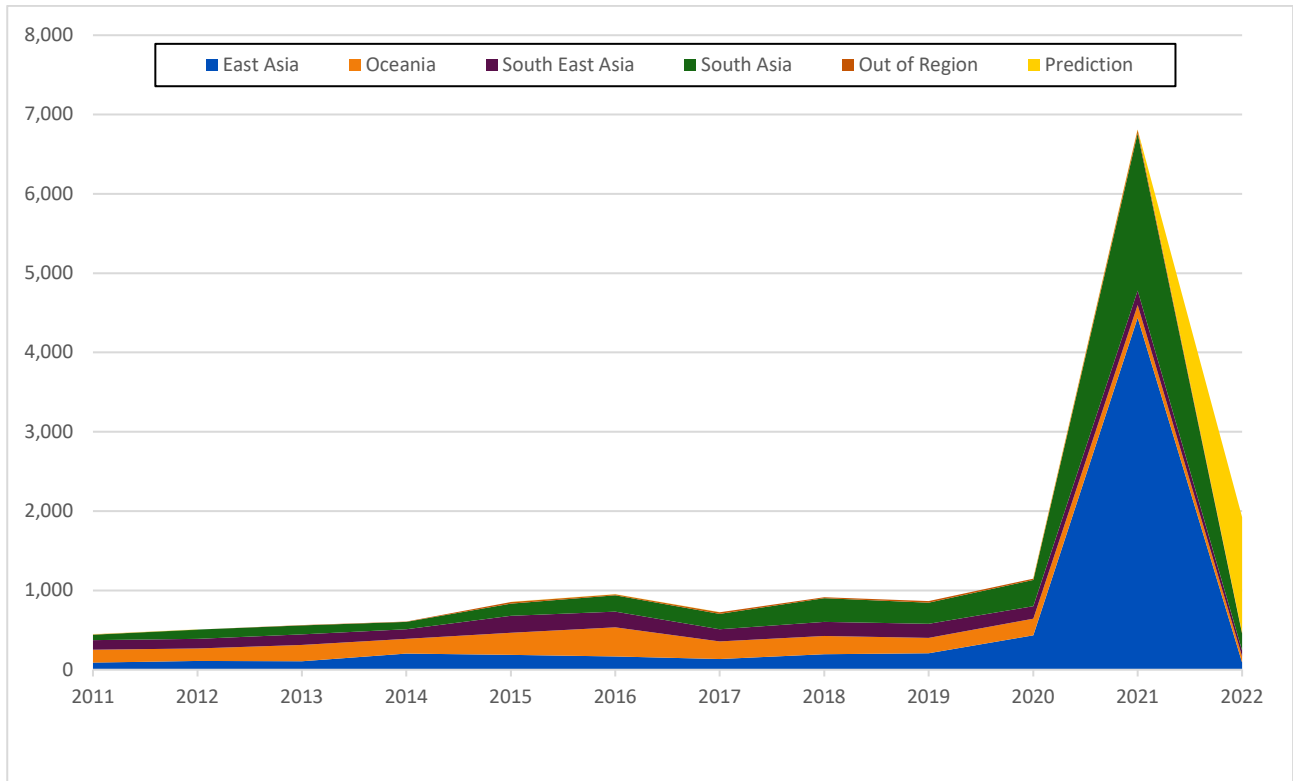


Figure 14: Annual ASN delegations

Member resource holdings

- The percentage of Members holding IPv6 reached 69.51% on 31 July 2022, up from 68.43% on 31 December 2021. The proportion of APNIC Members holding specific resource types is illustrated below.

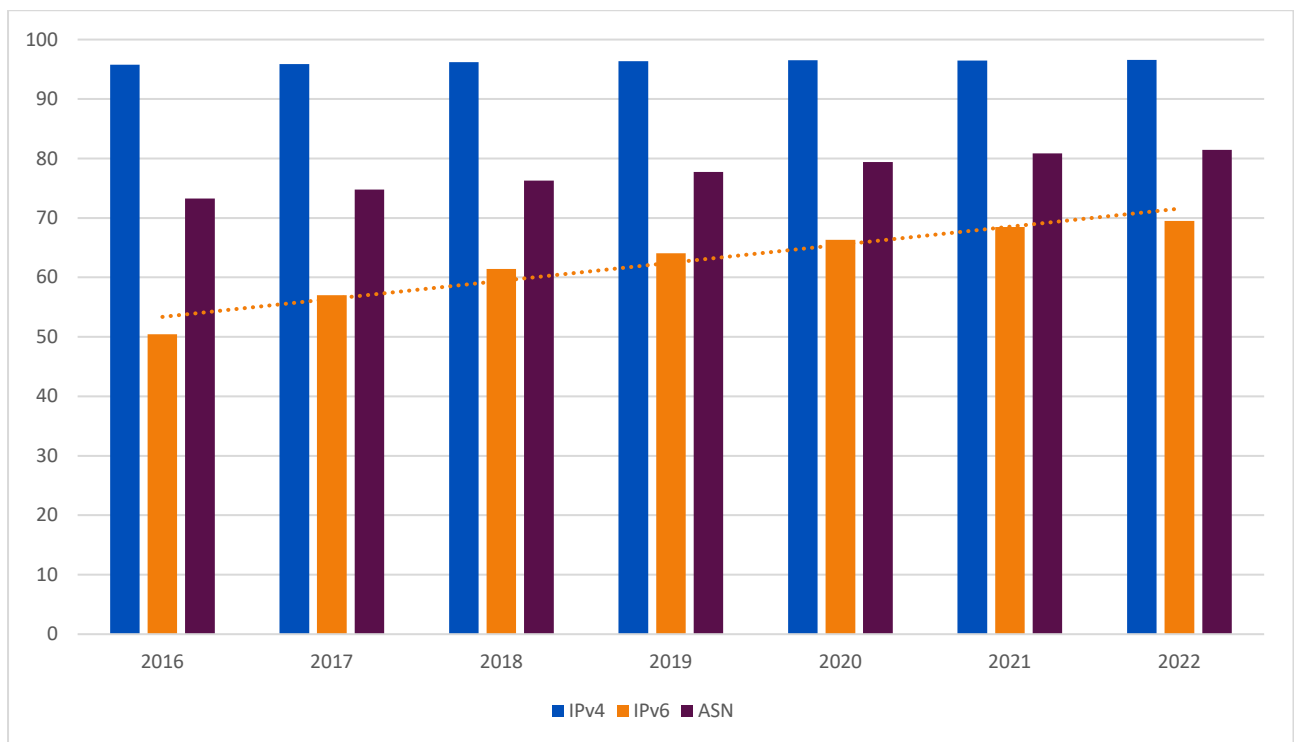


Figure 15: Member resource type holdings

IPv4 transfers: Mergers/acquisitions and historical

- The peak in September 2021 was caused by a large transfer that occurred within TWNIC.

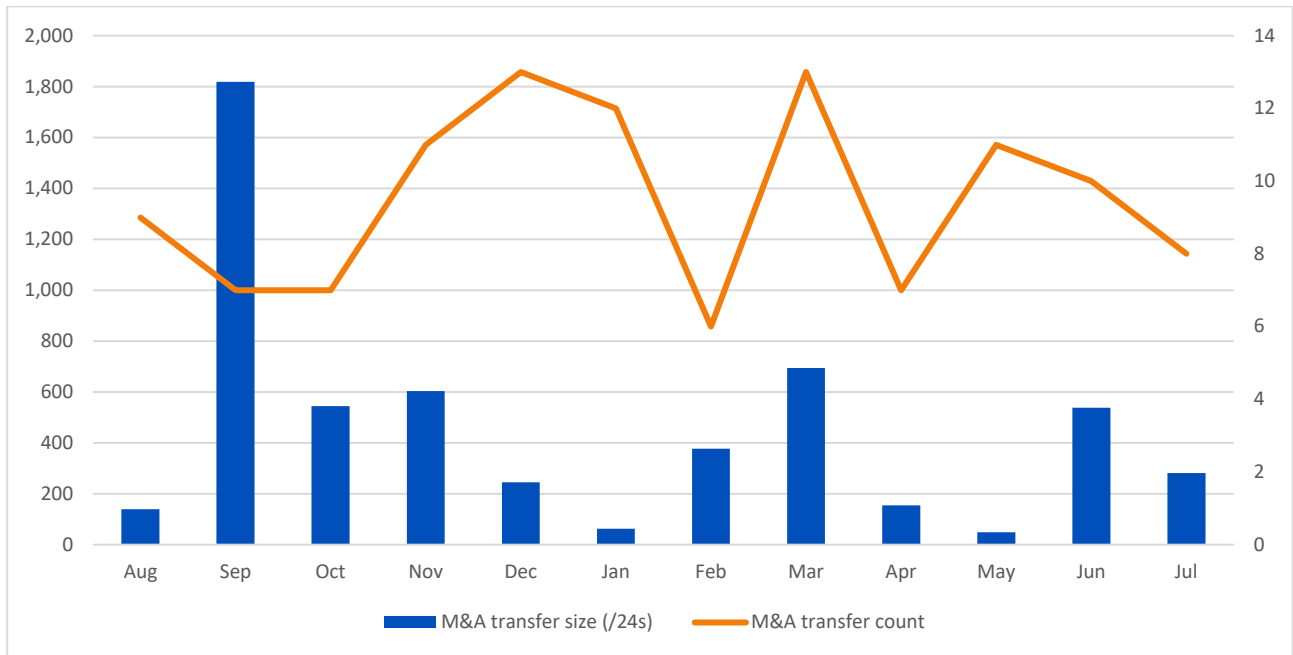


Figure 16: M&A and historical transfers

IPv4 market transfers

- Tencent (China) made a large transfer between their accounts in April 2022.
- Large IPv4 transfers between Triple T (Thailand) accounts in August, from APIDT in November, and between Tencent accounts in December, drove elevated transfer volumes in 2021.

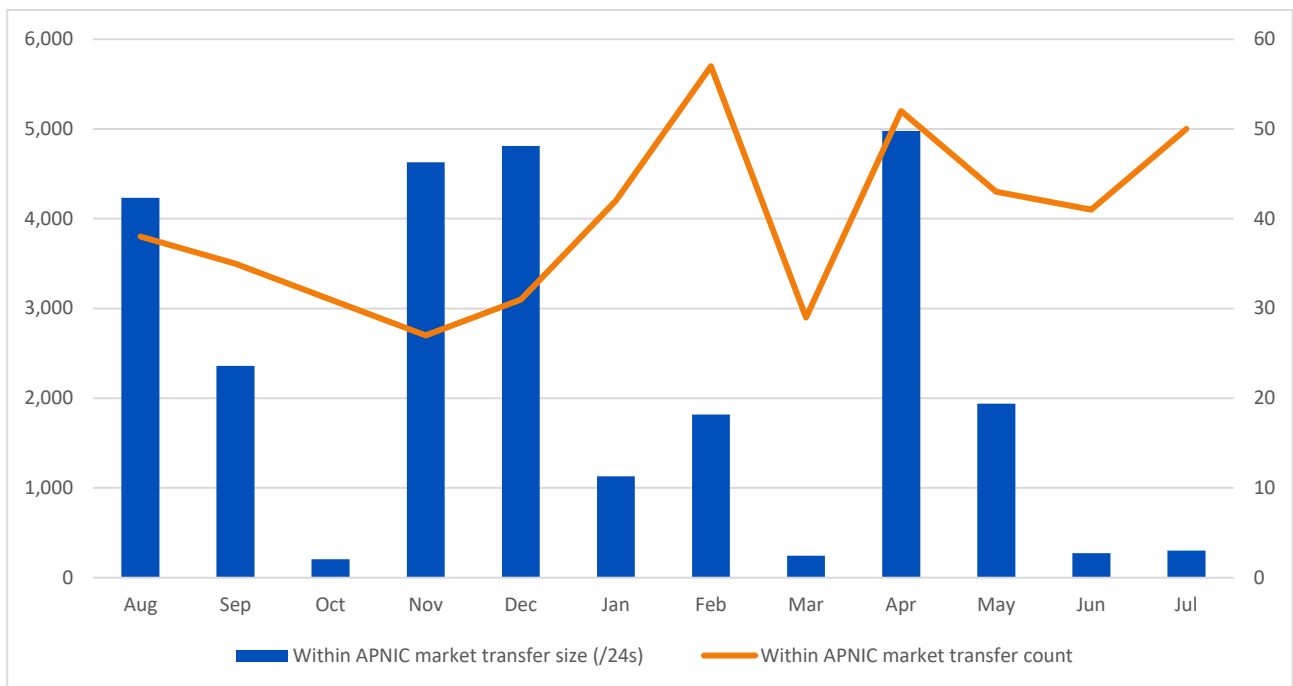


Figure 17: Market transfers within APNIC

Market transfers: Inter-RIR

- A large inter-RIR transfer from RIPE NCC to a CNNIC member occurred in June 2022.

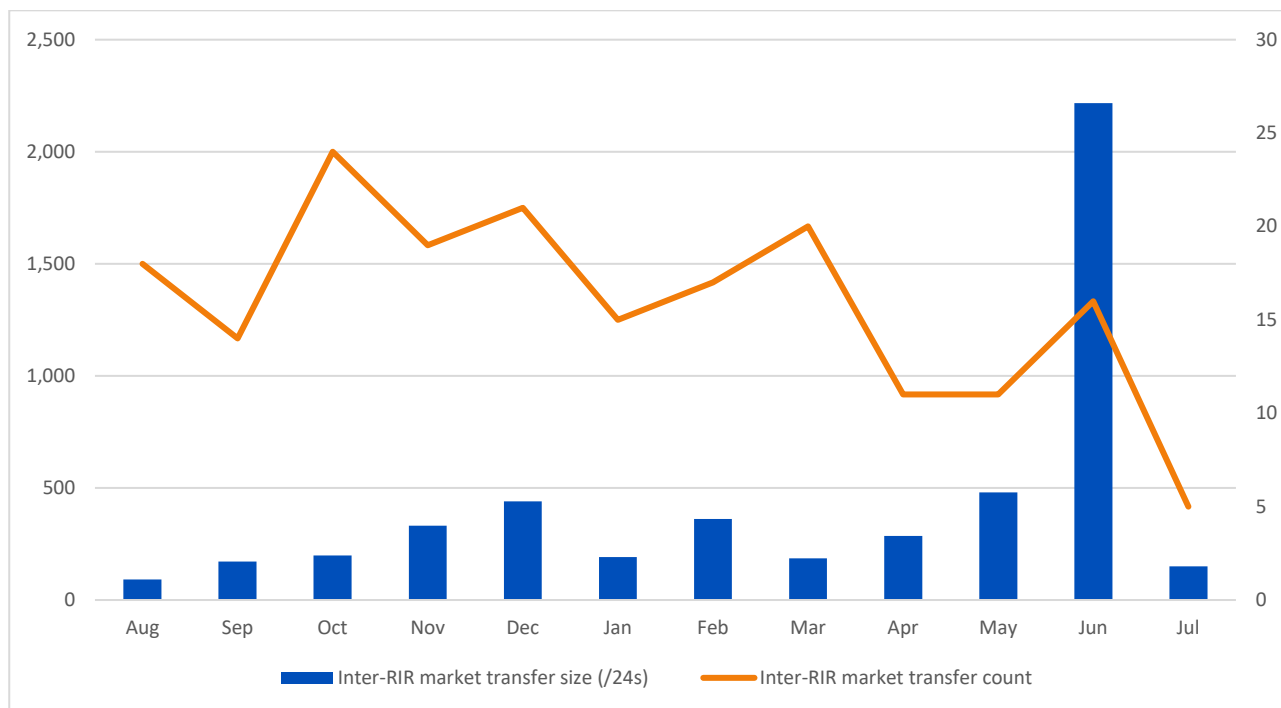


Figure 18: Inter-RIR IPv4 transfers

Success Indicators – 2A.1.		Results	Status
1	Maintain Registration Services SLA of two business day response to enquiries.	100% achieved	●
2	Increase percentage of Members holding IPv6 address space to at least 70% from 68%.	69.51%	●

2A.2 Maintain correct and current registry data

Objective: Ensure registry data is comprehensive, current, and correct.

- Improvements were made to IRT validation under Prop-125:
 - Members with invalid IRT objects were identified and assisted with completing their validation.
 - 7,828 of 9,682 active accounts have a validated IRT object, representing a validation rate of 80%.
- Identifier Technical Health Indicators (ITHI)
 - Under ITHI, number registry data accuracy is measured as Comprehensive, Correct, and Current. The following are the measurements for resources managed by APNIC, excluding NIRs.
 - Comprehensive:
 - APNIC resources accounted for in the NRO extended delegation statistics: 100%.
 - APNIC resources not duplicated in the NRO extended delegation statistics: 100%.
 - Resource registration completeness:

- Legal name (org object) (weight 25%)
- Legal address (org object) (weight 25%)
- Point of contact (IRT) (weight 50%)

Type of Record	Number of records	Score	% of total records
Have a parent block with org object and IRT	38,280	100	89%
Have no org object and no IRT	3,887	0	9%
Have IRT but no org object	851	50	1.9%
Have org object but no IRT	2	50	.0004%

Table 5: ITHI measurement: ‘Comprehensive’

- o Correct:
 - Measurement 1: Member has confirmed their details as correct and created an org object (50%).
 - Measurement 2: Validated the IRT within the last 12 months (50%).

Type of Record	Number of records	Score	% of total records
Have a parent block with org object and validated IRT	31,228	100	73%
Have org object but no validated IRT	7,054	50	16%
Have no org object and no validated IRT	4,343	0	10.09%
Have validated IRT but no org object	395	50	.92%

Table 6: ITHI measurement: ‘Correct’

- o Current (to be implemented later in 2022)

Success Indicators – 2A.2.		Results	Status
1	Comply with ITHI reporting requirements.	2/3 implemented	●
2	Increase validation of registration records to at least 85% from 76%.	80%	●

2B Registry Products

Operations

2B.1 Internet number registry management

Objective: Register address space allocations and assignments to ensure uniqueness and provide information for Internet troubleshooting at all levels.

NIR API

- An API to assist NIR resource administration and registry accuracy was deployed in an external test environment in Q1, and into beta-test production in Q2.

Success Indicators – 2B.1.		Results	Status
1	Maintain APNIC Registry Management System (ARMS) availability of at least 99.99%.	99.99%	●

2B.2 Registry product management

Objective: Provide essential registry products and services to help network operators maintain a secure, available, and stable Internet.

RDAP

- APNIC’s RDAP service was updated to comply with the RIR RDAP profile.

Success Indicators – 2B.2.		Results	Status
1	Maintain whois, RDAP, RPKI, RDNS and IRR availability of at least 99.99%.	99.99%	●
2	Update APNIC RDAP to comply with the RIR RDAP profile.	Completed	●
3	Migrate RDNS API services to CentOS 7.	Scheduled for Q4	●

Investments

2B.3 Registry product development

Objective: Develop and improve essential registry products and services.

- The route management pre-validation feature is pending final testing.
- The work to support ROA transition during transfer was completed.

	Success Indicators – 2B.3.	Results	Status
1	Achieve all 2022 goals, according to the Registry Products Roadmap .	1 completed 3 in progress 0 in backlog	●

2B.4 Registry re-architecture

Objective: Improve security, reliability, and efficiency of the APNIC registry, and facilitate easier development of future registry services and functions required by the community.

- A prototype of the APNIC Registry API was deployed for public testing and promoted at APRICOT 2022, with production development scheduled to start in Q1 2023.

	Success Indicators – 2B.4.	Results	Status
1	Progress development of a Registry API with a completion target of 2023.	In progress	●
2	Progress reimplementation of the internal registry in Java with a completion target of 2023.	Scheduled to start in Q4	●

2B.5 Readiness for Five-9s Availability for Highly Critical Services

Objective: Define ‘highly critical services’ and prepare for 99.999% availability for these services.

- Services such as RPKI, whois, RDAP and reverse DNS were identified as ‘highly critical services’.
- An external consultant has completed a gap analysis for the RPKI service.

	Success Indicators – 2B.5.	Results	Status
1	Achieve readiness to implement by end of 2022.	In progress	●

2C Policy development

Operations

2C.1 Policy development

Objective: Ensure resource policies in the APNIC region are developed in line with the community-agreed PDP.

APNIC 53

- Three policy proposals were considered at the APNIC 53 Open Policy Meeting (OPM). All reached consensus in the OPM and AGM:
 - [prop-142](#): Unify Transfers Policies Text
 - [prop-143](#): ASN to Customer
 - [prop-144](#): Experimental Proposal Allocation

- A summary of the proposals was published in [eight languages](#).
- [prop-141](#) (Change maximum delegation size of IPv4 address from 512 (/23) to 768 (/23+/24) addresses) was presented for discussion only and not put to the community for consensus.
- Following the meeting, the comment period for prop-142, -143, and -144 closed with no objections raised and the policies were endorsed by the APNIC EC for adoption.

Other

- Staff participated in the TWNIC OPM in May.

	Success Indicators – 2C.1.	Results	Status
1	Achieve SIG Chair Support satisfaction of at least 6/7.	N/A	●
2	Achieve PDP satisfaction of at least 5.75/7 in the APNIC Survey.	N/A	●
3	Participate in all NIR OPMs.	1/1	●

2C.2 Policy implementation

Objective: Implement APNIC resource policies in a neutral manner consistent with agreed processes, timings, and community expectations.

- Prop-142, -143, and -144 are in the final editorial call for comments and are expected to be implemented in August.

	Success Indicators – 2C.2.	Results	Status
1	Meet 100% of implementation timelines.	3/3 in progress	●

2C.3 Policy analysis

Objective: Provide neutral policy advice and impact analysis to help the APNIC community make informed policy decisions.

- Impact assessments of the three policy proposals discussed at APNIC 53 were published on the Policy SIG mailing list.

	Success Indicators – 2C.3.	Results	Status
1	Publish a policy proposals analysis before each Open Policy Meeting (OPM).	1/1 published	●

3 Development



Operations

3A APNIC Conferences

3A.1 APNIC conferences

Objective: Provide two conferences each year for the APNIC community to learn, share ideas and experiences, build relationships, and develop Internet policy.

APRICOT 2022 / APNIC 53

- APRICOT 2022 was held online from 21 February to 3 March 2022.

Conference statistics	
Total number of remote participants (Zoom)	886
Economies represented	64
Remote viewers – YouTube	3,854 views; 870.49 hours
#apricot2022 tweets	210 from 114 users

Table 7: APRICOT 2021 statistics

- The tutorial week from 21 to 25 February attracted 519 attendees, with 502 attending the conference from 28 February to 3 March.
- At the APNIC EC election, Sumon Ahmed Sabir (4,084 votes), Kams Sze Yeung (3,238 votes), and Achie Atienza (3,057 votes) were elected for two-year terms.
- Other Internet community events held at APRICOT 2022 included the DotAsia AGM, APIX meeting, AP* Retreat, and APNG Camp 15.
- The delegate survey Net Promoter Score (NPS) was 60.

APNIC 54

- APNIC 54 will be held in a hybrid format, at the Grand Hyatt in Singapore and online, from 8 to 15 September 2022.
- The conference will be co-located with APriGF 2022, APSIG 2022 and SGNOG 9.
- A revised program structure was developed to suit both online and face-to-face audiences.

	Success Indicators – 3A.1.	Results	Status
1	Achieve total attendance of 1,200 (face-to-face and online) across two conferences.	886	●
2	Achieve participant satisfaction of at least 90% at each conference.	96%	●
3	Achieve Net Promoter Score of at least 50 at each conference.	NPS 60	●

3B Foundation support

Investments

3B.1 Operational and administrative support

Objective: Provide support to the Foundation under the AoC of 2018.

- Six positions were seconded from APNIC, under full funding by the Foundation.
- APNIC’s Finance team provided support to the Foundation while recruitment was underway for a new Foundation Finance Manager.
- Ongoing hosting and technical support continues for administrative, project and financial platforms.

3C Community Engagement Operations

3C.1 Technical community support

Objective: Participate in, and encourage the development of, a healthy Asia Pacific technical community.

Technical community events

Month	Event	Location	Sponsorship	MC/PC	Talk/Panel	Training	Tech Support
Jan	JANOG 49	EA	✓				
Mar	APAN 53	SA	✓	✓	✓	✓	
Mar	MMIX AGM & Peering Forum 2022	SEA			✓		✓
Mar	vPhNOG3	SEA		✓		✓	✓
Apr	AusNOG 2022	OC		✓			
Apr	PCTA e-Tech Show 2022	SEA				✓	
May	BKNIX Peering Forum 2022	SEA	✓			✓	
Jun	bdNOG 14	SA	✓			✓	
Jul	PhNOG 2022	SEA	✓	✓		✓	
Jul	JANOG 50	EA	✓				
Jul	SANOG 38	SA	✓	✓	✓	✓	
Jul	IDNOG 7	SEA	✓	✓	✓	✓	

Table 8: Technical community events

	Success Indicators – 3C.1.	Results	Status
1	Support at least 30 technical community events (opportunity permitting).	12/30 supported	●
2	Support at least one new/revived NOG in two sub-regions (if required).	N/A	●

3C.2 Security community support

Objective: Increase collaboration and build trust with the security community and increase awareness around relevant security issues.

Security community event support

Month	Event	Location	Type	Sponsorship	MC / PC	Present / Panel	Training	Participate
Jan	MyFinTech Week 2022	SEA	Security Community			✓		
Feb	M3AAWG 54th General Meeting	Global	Security Community					✓
Mar	Indonesia HoneyNet Project Workshop	SEA	Security Community				✓	
Feb	APRICOT 2022	Asia Pacific	Technical Community			✓		
Feb	APNIC 53 NIR Workshop	Asia Pacific	Other				✓	
Mar	PacSON Virtual Webinar	OC	CERT			✓		
Mar	APAN 53	Asia Pacific	Technical Community		✓	✓		✓
Mar	KHNOG 4	KH	NOG				✓	
Apr	BrisSEC 2022	OC	Security Community					✓
Apr	ELK Stack for Security Monitoring	MY	Technical Community				✓	
May	AusCERT Conference	OC	Security Community		✓	✓		
May	RISE Indonesia	SEA	Security Community	✓				
May	Cyber Safety Pasifika Content Creation/Update Workshop	Pacific Region	Government			✓		
May	Cyber Safety Pasifika Webinar	Pacific Region	Government			✓		

	on Threat Landscape							
May	INTERPOL Webinar on Digital Piracy	Global	Government			✓		
May	3rd ICANN APAC TWNIC Engagement Forum (37th TWNIC OPM)	Asia Pacific	Internet Governance			✓		
Jun	M3AAWG 55th General Meeting	Global	Security Community					✓
Jun	FIRST Annual Conference	Global	Security					✓
Jun	Telekom Malaysia Cyber Security Seminar	SEA	Security			✓		
Jul	UNODC Seminar on Ransomware	OC	Security			✓		
Jul	Bside Brisbane 2022	OC	Security					✓

Table 9: Security community event support

	Success Indicators – 3C.2.	Results	Status
1	Support at least 12 security community events (opportunity permitting).	12/12 supported	●
2	Support development of at least four new or existing CERTs/CSIRTs (if needed).	2/4 completed	●
3	Organize quarterly threat sharing community events.	2/2 completed	●

3C.3 Internet organization cooperation

Objective: Seek opportunities to strengthen collaboration with other regional and global Internet organizations.

NRO and RIRs

- APNIC is responsible for Chairing the NRO EC and Coordination Groups (CGs) during 2022.
- The NRO EC held strategic planning meetings in Dubai in February and Miami in June. Development of the plan continues.
- Staff participated in the following NRO CG meetings: NRO EC (6), ECG (1), PSCG (3), PACG (2) and CCG (2).

- The Internet Technical Success Factors study commissioned by APNIC and LACNIC in 2021 was featured at the APNIC 53 Cooperation SIG. It was also promoted at the 37th TWNIC OPM, PITA Business Forum and Exposition 2022, and at a workshop with the auDA Board and Executive Team.
- Staff participated in ARIN 49 (USA), RIPE 84 (Germany) and AIS '22/AFRINIC 35 (Mauritius).

I* (ICANN, ISOC, IETF, ITCG)

APNIC staff participated in the following:

- Five Internet Technical Collaboration Group (ITCG) calls.
- Two OECD ITAC calls to coordinate work on an OECD draft document on routing and DNS security, and to prepare for a Ministerial Conference on the Digital Economy in December.
- ICANN 73 and 74, plus IETF 113 and IETF 114. Staff are also co-authoring drafts in the IETF SIDROPS (RPKI) and REGEXT (RDAP) working groups.

	Success Indicators – 3C.3.	Results	Status
1	Ensure APNIC is represented in all NRO EC and 'I-Star' coordination meetings.	6/6 completed	●
2	Participate in all RIR Open Policy Meetings.	4/5 completed	●

3C.4 Internet governance participation

Objective: Engage the community to strengthen open, multistakeholder, bottom-up and transparent Internet governance processes.

IGF

- Staff participated in four Multistakeholder Advisory Group (MAG) meetings, including the first and second Open Consultations for IGF 2022, and four IGF Support Association (IGFSA) Executive Committee Meetings.
- Joyce Chen was invited as an expert to participate in the new IGF Policy Network on Internet Fragmentation.
- APNIC is co-organizing two workshops at the IGF 2022 on Internet sanctions and Internet fragmentation.

APrIGF

- APrIGF 2022 and APSIG 2022 will be co-located with APNIC 54 in Singapore in September.
- Staff were elected as co-convenors of the APrIGF Program Committee (PC) and Stakeholder Engagement Committee (SEC) and participated in 13 APrIGF Multistakeholder Steering Group (MSG) meetings, 16 PC meetings, and six SEC meetings.
- Staff are also members of the Events Committee (EC) and Fellowship Committee (FC) and participated in 15 EC and 12 FC meetings.
- Staff convened eight APrIGF planning meetings with the community.

Sub-regional and economy-level IGFs

- Staff presented remotely at the YIGF Vietnam, YIGF Myanmar, and 3rd ICANN APAC TWNIC Engagement Forum (37th TWNIC OPM).

- Staff attended the VNNIC International Conference 2022 in Viet Nam and facilitated a youth Internet governance workshop with VNNIC.
- Staff participated in the NetThing (Australia) Steering Committee.

	Success Indicators – 3C.4.	Results	Status
1	Organize at least three workshop proposals at APriGF 2022.	2 joint sessions scheduled	●
2	Support at least five national or sub-regional Internet governance events.	3 supported	●

3C.5 Government engagement

Objective: Build and maintain meaningful relationships between APNIC and government and public safety agencies in the region.

Intergovernmental forums

- ITU
 - Staff participated in the ITU WTSA-20, ITU Interregional Meeting for WTSA-20 (IRM) and TSAG meetings.
 - Staff participated in WTDC-21 proceedings remotely.
 - Discussions continue with the ITU Regional Office on a Pacific cybersecurity project. Collaboration on establishing a Samoa IXP is underway.
- APT
 - Staff participated in two APT Preparatory Meetings for WTDC-21 remotely, and two meetings for ITU-PP, one remotely and one in Tokyo.
 - Remote training was provided to two APT member states (Mongolia in June and Myanmar in July) in collaboration with the APT Secretariat.
- OECD
 - Staff monitored the 6th Session of the Working Party on Security in the Digital Economy.
- APEC TEL
 - Staff presented on IPv6 and participated remotely in APEC TEL 64.
- Other
 - Staff monitored discussions at the UN Open Ended Working Group (OEWG) informal consultations, including the virtual informal dialogue with the Chair of the OEWG ICTs (2021-2025). APNIC obtained UN accreditation to become an observer in this process.

Bilateral government engagement

- Advice was provided to the Australian and Japanese governments in ITU and APT meetings.
- Advice was provided to the Singapore government on Internet governance matters.

Law Enforcement and Public Safety

- Staff met with AFP representatives from Cyber Safety Pasifika to organize LEA training for 2022 and participated in the Cyber Safety Pasifika Scholarship peer group mentoring.
- Staff delivered a webinar on the Cyber Threat Landscape to LEAs in Pacific economies.
- Staff presented at the INTERPOL Cybercrime Conference and INTERPOL Webinar on Digital Piracy.

Success Indicators – 3C.5.		Results	Status
1	Participate in at least 12 governmental or intergovernmental engagements.	14/12 engagements	●
2	Support at least three governmental capacity-building events.	2/3 events	●

3C.6 External relations coordination

Objective: Build institutional knowledge of APNIC’s relationships with Members and other stakeholders and improve value and outcomes of engagement activities.

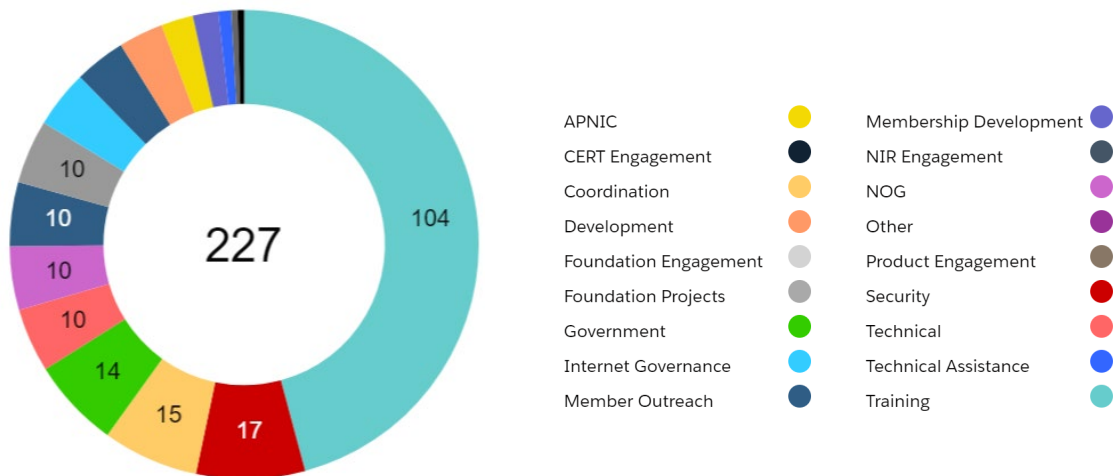


Figure 19: Engagements summary by type

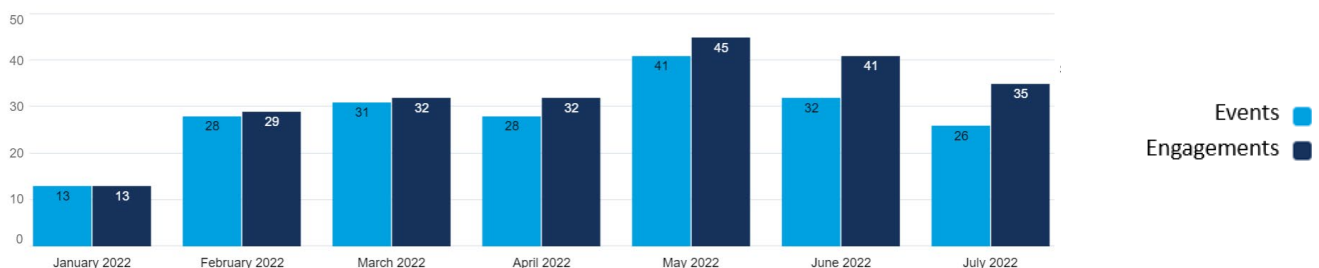


Figure 20: Engagement summary by month

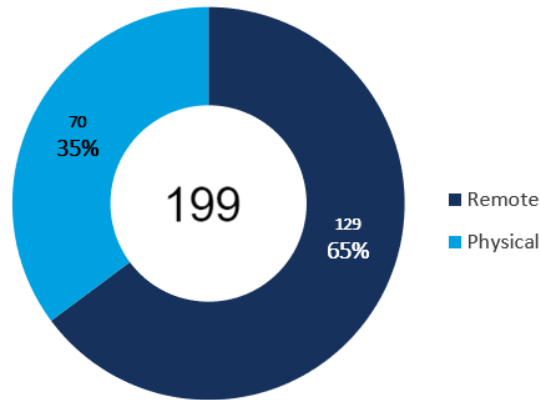
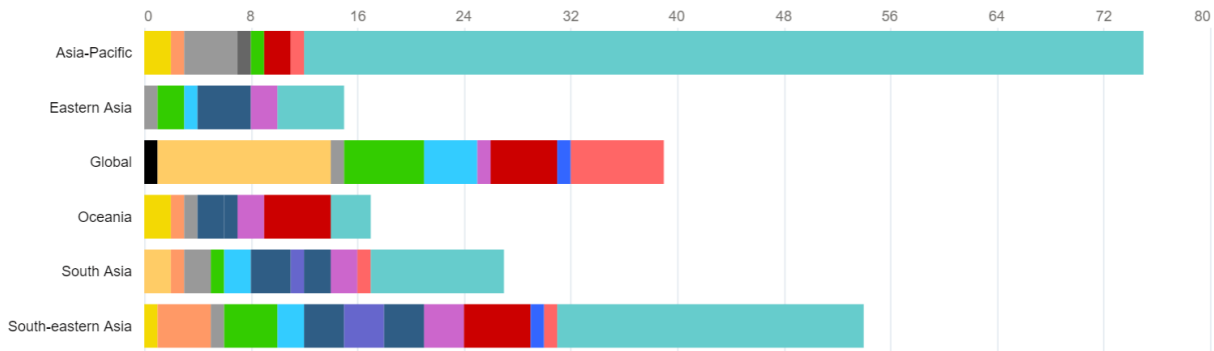


Figure 21: Remote vs physical events



**New subregion added as 'Asia Pacific' to capture live eTutorials delivered for the AP region and regional events that are not economy specific.*

Figure 22: Engagement summary by subregion/type

Legend

- Complete
- Planned
- Foundation Supported
- Remote

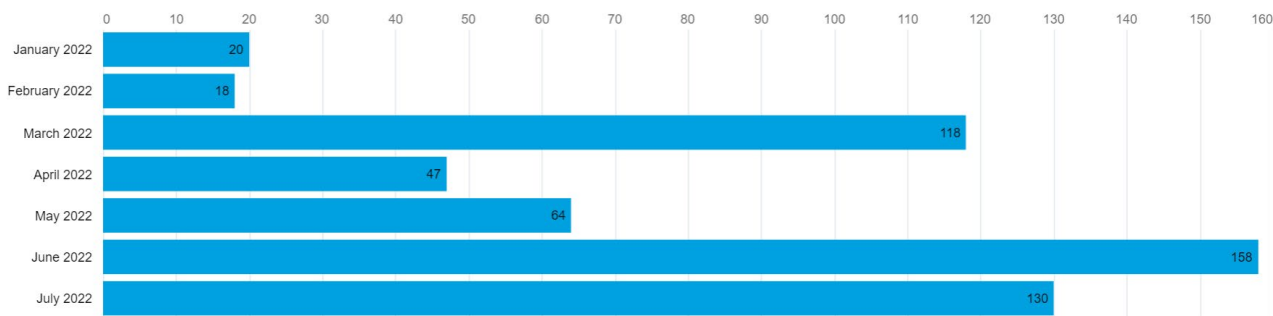
●	APNIC	●	Membership Development
○	CERT Engagement	●	NIR Engagement
○	Coordination	●	NOG
○	Development	●	Other
○	Foundation Engagement	○	Product Engagement
○	Foundation Projects	○	Security
○	Government	○	Technical
○	Internet Governance	○	Technical Assistance
○	Member Outreach	○	Training

South Asia	Oceania
• AF	Australia and New Zealand
• BD	• AU
• BT	• CC
• IN	• CX
• IO	• NF
• LK	• NZ
• MV	Melanesia
• NP	• FJ
• OP4	• NC
• PK	• PG
South-eastern Asia	• SB
• BN	• VU
• CC	Micronesia
• CX	• FM
• ID	• GU
• KH	• KI
• LA	• MH
• MM	• MP
• MY	• NR
• OP3	• PW
• PH	Open
• SG	• OP1
• TH	Polynesia
• TL	• AS
• VN	• CK
Eastern Asia	• NU
• CN	• PF
• HK	• PN
• JP	• TK
• KP	• TO
• KR	• TV
• MN	• WF
• MO	• WS
• OP2	Southern Africa
• TW	• TF
Asia-Pacific	Global collaboration
• AP	

**Global collaboration is for events dedicated and engaged outside the Asia Pacific region. Asia Pacific refers to events delivered for the AP region or regional events that are not economy specific.*

**Open Economy (OP1, OP2, OP3, OP4) codes capture delivery of events targeted to specific subregions.*

ny



Touchpoints by engagement types

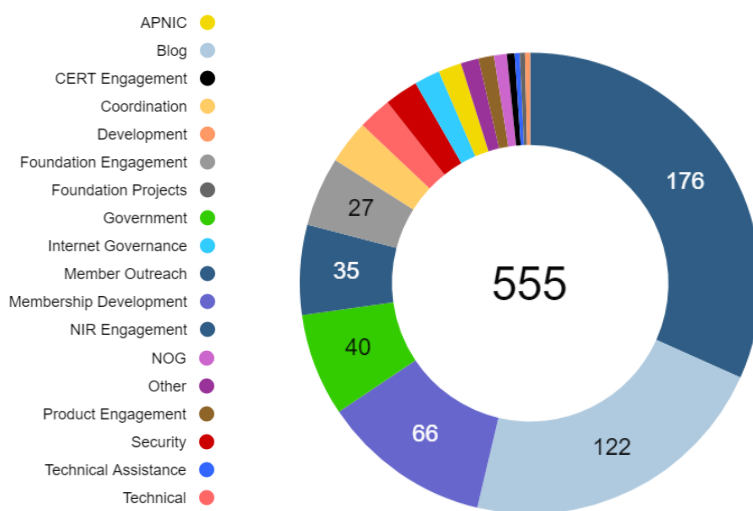


Figure 24: Touchpoints summary

Note: Touchpoints are records of interactions by APNIC staff with a contact (APNIC Member or Non-Member), usually during an event.

- An External Relations (ER) coordination retreat was held in February to evaluate 2021 activities and plan for 2022. Seven ER team coordination meetings have been held.

Success Indicators – 3C.6.		Results	Status
1	Increase ER touchpoints by at least 5% from 456 in 2021.	555/479 engagements	●
2	Achieve at least 250 APNIC engagements in 2022.	227/250 engagements	●

3D Community Participation

Operations

3D.1 Community-led processes

Objective: Increase awareness and participation in APNIC community-led processes including the PDP, SIGs (Policy, Cooperation, NIR, Routing Security), Working Groups, and BoFs.

- The Policy Document Review Working Group (WG), formed in 2021, completed its work at APNIC 53. Consensus was reached on seven WG policy proposals across APNIC 52 and 53.
- One intersessional online SIG meeting was held; a policy readout webinar in February attracted 19 participants. The Routing Security SIG intersessional planned for April was postponed.

Elected Leaders

- Two online meetings of APNIC EC and staff with elected representatives (of SIGs, IANA RC, NRO NC, APIX and APNOG) were held in March and June. Meeting agendas included APNIC and APRICOT conferences, the APNIC Survey, and community election processes.

	Success Indicators – 3D.1.	Results	Status
1	Achieve at least 850 online SIG participants across two conferences.	216	●
2	Achieve at least 120 online participants across at least four intersessional SIG meetings.	1 meeting/19 participants	●
3	Achieve SIG satisfaction of at least 5.8/7 in the APNIC Survey.	N/A	●

3D.2 Online participation

Objective: Encourage community development online and help Members and the community benefit from APNIC's available online resources.

- Planning and development of the Online Community Platform continued (see 3D.4).

apnic.net

- Visitor numbers to apnic.net have remained consistent since April, following a higher start to the year. The top five visitor economies were the United States, New Zealand, China, India, and Australia.

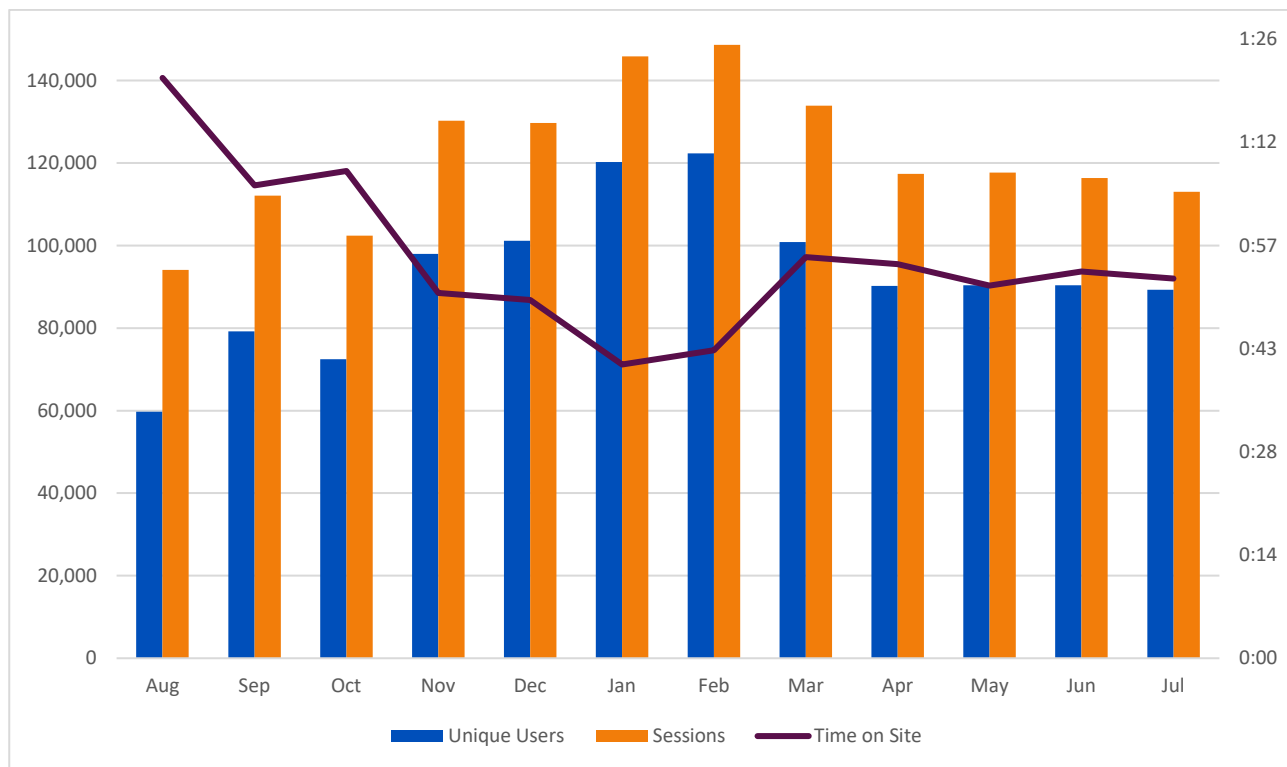


Figure 25: apnic.net website usage

Economy	Unique Users	Sessions
United States	325,246	334,135
New Zealand	63,802	66,926
China	44,627	57,905
India	36,979	63,771
Australia	23,522	41,670
Japan	21,217	32,677
Bangladesh	15,157	34,729
Indonesia	13,547	21,512
Philippines	8,043	19,266
Hong Kong	8,035	52,650

Table 10: apnic.net top visitor economies in 2022

	Success Indicators – 3D.2.	Results	Status
1	Achieve at least 500 registered users of the APNIC community platform.	Launch in Q3	●

3D.3 Encouraging newcomers and diversity

Objective: Encourage new and continuing participants from diverse backgrounds in the APNIC community — both online and face-to-face — particularly the next generation of network engineers.

- The 2022 fellowship program was launched in March.
 - Thirty fellows were chosen (15 female and 15 male; 19 professionals and 11 youth) from 371 applicants.
 - South Asia has 12 fellows, Oceania 7, South East Asia 7, and East Asia 4. An additional 14 returning fellows from the 2021 program will also attend APNIC 54.
 - Twelve fellowship webinars were delivered with 91.4% overall attendance. Each fellow also completed an average of three APNIC Academy courses.
 - Eighteen volunteer mentors (including 16 from the community) were recruited. Eleven mentoring sessions, between 16 fellows and 11 mentors, were completed.
- 46% of APRICOT 2022 attendees (406) were newcomers.

	Success Indicators – 3D.3.	Results	Status
1	Attract at least 400 newcomers to APNIC conferences.	406	●
2	Achieve at least 50% female and 30% youth participation in 2022 Fellowships.	50% female and 37% youth	●
3	Achieve a fellowship graduation of at least 80%.	N/A	●
4	Achieve a fellowship program NPS of at least 80.	N/A	●

Investments

3D.4 Online community platform

Objective: Encourage an active, connected APNIC community engaging on an integrated online community platform.

- Testing of the ‘Tribe’ platform was terminated, and Mailman 3’s ‘Hyperkitty’ was chosen.
- Development of new features included news feed, user profile, redesigned landing pages, and a new theme applied to all pages.
- Consultation with community and APNIC list owners continued. A BoF has been scheduled for APNIC 54 to launch the MVP.

	Success Indicators – 3D.4.	Results	Status
1	Achieve at least 500 registered users of the platform.	Platform launch Q3	●

3E APNIC Academy

Operations

3E.1 Academy product management

Objective: Maintain high-quality training assets to build capacity in the region.

- A new self-paced OSPF course was published, including 56 topics and ten hours of new learning material.
- New virtual labs were added including DHCPv6-PD, the RPKI Lab with RPKI-Prover, RPKI Lab with FORT, the Practical Packet Analysis Lab, and the IPv6 Security Lab.
- Finalized content for six modules for the new Introduction to Cybersecurity course and developed the first three (of 10) modules for the new BGP self-paced course.
- Commenced the migration of the training wiki into Confluence and planned for the integration between the APNIC Academy and Salesforce’s event management system.
- User Research began for the TA platform landing page, including improvements to the training events page.
- Deployed a new version of Eduroam to provide access to eligible APNIC Academy users, including Eduroam account management.

	Success Indicators – 3E.1.	Results	Status
1	Maintain Academy platform availability of at least 99.95%.	100% uptime	●
2	Achieve a rating of at least 6.00 for APNIC training in the APNIC Survey.	N/A	●

3E.2 Instructor-led Training

Objective: Increase knowledge and skills in the community via instructor-led training.

- Instructor-led training was delivered as a mix of online and face-to-face with travel resuming. Training was conducted at eight technical community events, including five NOGs (PHNOG x2, BDNNOG, SANOG, IDNOG).
- Four online workshops were conducted with NIRs (VNNIC, IRINN and TWNIC, CNNIC).
- RPKI tutorials and ROA sessions led by retained Community Trainers (CTs) commenced in May, with five held (PH x2, KH x2 and MN x1). An RPKI Deployathon was held before AusNOG 2022 (3E.6).
- Eight technical tutorials were also held for APNIC Fellows.
- Completed updating content and developing labs for the following existing courses:
 - Network Security: New SSL/TLS slides and lab module; new Intrusion Detection with Suricata module, plus labs.

- RPKI/ROV: Updated lab guides and added three new validators (rpki-prover, rpki-client, and FORT).
- Rebuilt the DNS/DNSSEC labs.

January to July 2022	APNIC Instructor-led training
Courses (by topic)	90 courses delivered/2,360 attendees
Webinars	12 webinars (5 external/guest speakers)/665 attendees

Table 11: Instructor-led training

	Success Indicators – 3E.2.	Results	Status
1	Conduct at least 100 instructor-led tutorials / workshops.	90/100 tutorials / workshops	●
2	Conduct at least 18 live webinars.	12/18 webinars	●
3	Achieve average training survey rating of 4/5.	4.3/5	●

3E.3 Self-paced training

Objective: Increase knowledge and skills in the community via self-paced online training.

January to July 2022	APNIC Academy
Courses (by topic)	1,315 completions; 2,147 hours contact
Virtual Labs	4,516 labs launched; 4,452 hours completed
Students	4,360 new accounts (21,932 in total)
Locations	48 economies

Table 12: APNIC Academy training

	Success Indicators – 3E.3.	Results	Status
1	Increase total self-paced online course usage by at least 30% from 3,340 hours in 2021.	2,147 hours	●
2	Increase total virtual lab usage by at least 20% from 6,902 hours in 2021.	4,452 hours	●
3	Increase registered users of the APNIC Academy by at least 25% from 17,018 in 2021.	21,932 users	●

3E.4 Community Trainers

Objective: Expand the scope and effectiveness of APNIC Academy training to help meet increasing community demand for technical skills development.

- A new APNIC Retained CT program was introduced and four community members (PH, KH, MN, FJ) have been recruited.
- There are currently 30 active volunteer CTs from 15 economies.

	Success Indicators – 3E.4.	Results	Status
1	Recruit at least 12 new retained CTs.	4/12	●
2	Recruit at least 10 new volunteering CTs.	1/10	●

3E.5 Technical Assistance

Objective: Assist Members on adoption of best practices when implementing networking technologies.

Activities

- Advised on the creation of a vulnerability reporting program (VRP) with an Australian Member.
- Assistance was provided to a Member in Bangladesh to solve ROA creation failure issues.
- Provided RPKI validator assistance for a Malaysian network via the TA platform.
- Contacted Members in Fiji to assist in cleaning up invalid routes (3E.6).
- Assisted .FJ to help solve a DNSSEC issue.
- Assisted an ISP in Pakistan to clean up their IPv6 and IPv4 BGP announcements.
- PKIX: Coordination for ROV, root server deployment and CDN consolidation. Work is ongoing.
- MVIX: Design will be implemented once quotes for equipment are accepted.
- Helped Tonga re-establish communication to outer islands via satellite (following the volcanic eruption in late December 2021). Supplied and configured a donated Cisco ASR router to Tonga Communications Support.
- Assisting the Papua New Guinea government to migrate their network from Huawei equipment to Cisco.

	Success Indicators – 3E.5.	Results	Status
1	Respond to all technical assistance requests within seven days.	On track	●

3E.6 RPKI awareness and deployment support

Objective: Increase adoption of RPKI and routing security in the APNIC region.

- An RPKI Deployathon was held in Sydney before AusNOG 2022.
- Conducted five RPKI tutorials with retained CTs in Philippines, Cambodia, and Mongolia.
- Proactively contacted Members in Fiji to assist in cleaning up invalid routes.
- A RPKI deployment case study on Comcast was published. Twenty RPKI-tagged posts were published on the APNIC Blog, including an updated post on how to install an RPKI validator.

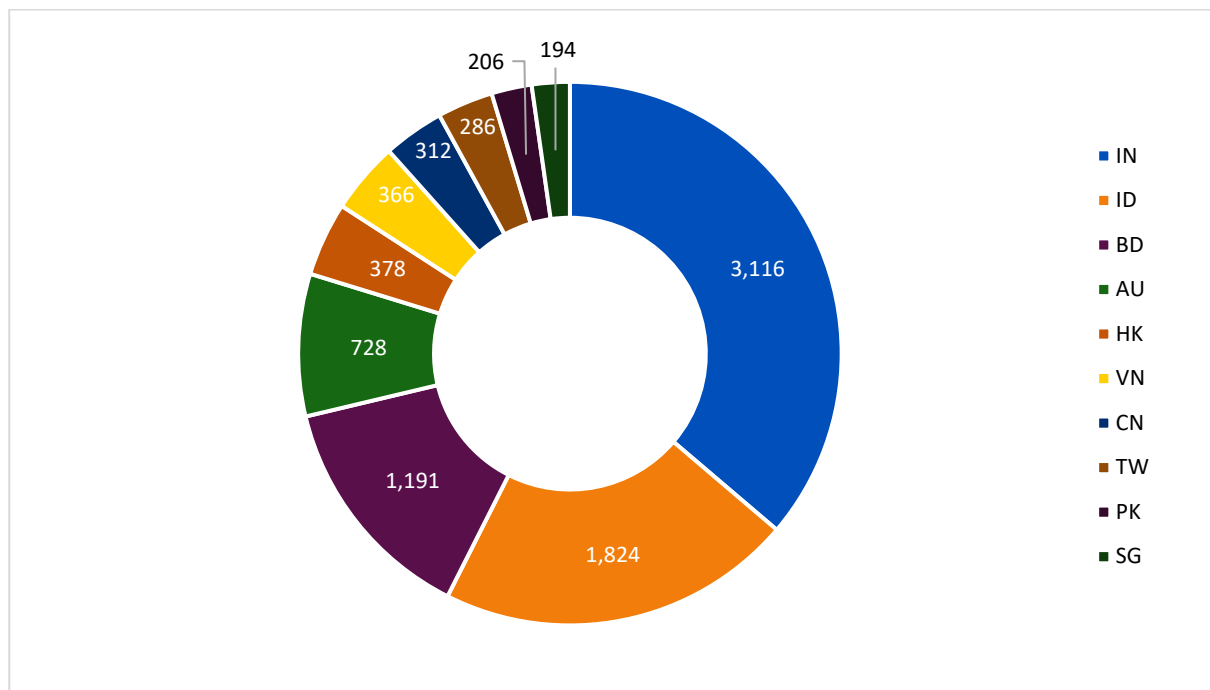


Figure 26: Top 10 Economies – Number of networks with ROAs

Success Indicators – 3E.6.		Results	Status
1	Conduct at least two instructor-led RPKI/ROV tutorials/workshops per sub-region.	10 conducted (1 EA, 8 SA, 1 OC)	●
2	Achieve at least 90% ROA coverage for at least one additional economy per sub-region.	In progress	●
3	Publish at least three RPKI/ROV deployment case studies.	1/3	●

3E.7 IPv6 awareness and deployment support

Objective: Encourage increased deployment of IPv6 in the APNIC region.

- APNIC delivered 22 IPv6 deployment-focused training events.
- Published two new IPv6 deployment success stories on SLTMobitel Mobile (LK) and NTT DOCOMO (JP), bringing the total number of IPv6 deployment stories on the APNIC website to 44. An IPv6 deployment podcast with Reliance Jio (IN) was also published.
- Published 34 IPv6-tagged posts on the APNIC Blog.
- IPv6 capability for the Asia Pacific region was 38.12% as measured by APNIC Labs.

	Success Indicators – 3E.7.	Results	Status
1	Conduct at least two instructor-led IPv6 deployment tutorials/workshops per sub-region.	19 completed (8 AP, 3 EA, 5 SA, 3 SEA)	●
2	Publish at least two IPv6 deployment case studies.	2/2	●

Investments

3E.8 Academy product development

Objective: Continue developing high-quality training assets to build capacity in the region.

- Added Singapore data centre as the default for all Academy virtual labs.
- Improved interface and navigation on the Academy platform.
- Added Japanese subtitle option to the IPv6 Fundamentals course and Routing Fundamentals course.
- Commenced the Training Wiki migration project on the APNIC Academy.

	Success Indicators – 3E.8.	Results	Status
1	Achieve all 2022 goals, according to the Academy Products Roadmap .	1 completed 4 in progress 1 in backlog	●

3E.9 Curriculum for non-technical audiences

Objective: Demystify how the Internet works to encourage active participation of non-technical audiences in Internet governance.

- Learning objectives and design documentation were completed.
- Game development is in progress.

	Success Indicators – 3E.9.	Results	Status
1	Release phase 1 of IPGO by June 2022.	In progress	●

3F Internet Infrastructure Support

Operations

3F.1 Internet infrastructure deployment

Objective: Improve the resilience and performance of the Internet in the region by expanding critical infrastructure deployment.

- PKIX (Lahore): In discussion about route server deployment and RPKI. Waiting on the official launch of the IXP.
- MVIX: Waiting for IX equipment to be purchased to start the build.
- Discussions are underway for an IXP in Kiribati and Timor Leste.
- Viable hardware replacements are being sought for seven disconnected RIPE Atlas anchor hosts.
- Root server deployment is focused on M-root (see 3F.3).
- Equipment delivery delays have impacted root server deployment during 2022 so far.

	Success Indicators – 3F.1.	Results	Status
1	Support deployment of at least two new or upgraded IXPs.	2 in progress	●
2	Support at least four IXPs to deploy ROV.	0/4	●
3	Deploy at least four root servers per sub-region, including M-Root servers.	1/4 SEA 0/4 SA 0/4 EA 0/4 OC	●
4	Deploy or upgrade at least one RIPE Atlas anchor per sub-region.	0/4	●

3F.2 Community Honeynet and Security Threat Sharing Platform

Objective: Increase visibility of security threats and vulnerabilities relevant to Members and the community and encourage information sharing to understand and manage threats.

- Two new partners from Bhutan and Laos joined the platform.
- The platform was upgraded to support an increased number of sensors and data processing.
- Mentoring for Royal Bhutan University students was provided to complete projects based on honeynet data.
- Quarterly threat sharing meetings were held with partners and the community to discuss latest observations.

	Success Indicators – 3F.2.	Results	Status
1	Increase the number of honeypot sensors by at least 60% from 60 in 2021.	80 sensors	●
2	Increase the Community Honeynet and Security Threat Sharing Platform partners by at least 30% from 15 in 2021.	17 partners	●

Investments

3F.3 M-root anycast instance deployment support

Objective: Faster and more reliable DNS service in the APNIC region.

- Completed deployment of the M-root in Guam, Hanoi, and Kuala Lumpur.

- Deployment of M-root servers in 11 locations (Kaohsiung, Manila, Dhaka, Bangkok, Jakarta, Ulaanbaatar, Kathmandu, Mumbai, Lahore, Kolkata, and Singapore) progressed but was impacted by equipment delivery delays. Currently seeking alternative suppliers or solutions.
- The M-Root Deployment Manager position will be shifted from APNIC to JPRS.

	Success Indicators – 3F.3.	Results	Status
1	Complete 10 M-Root server deployments commenced in 2021.	3/10	●
2	Identify and prepare at least 15 additional M-Root server sites.	0/15 8 in negotiation	●

4 Information



Operations

4A Information Products

4A.1 APNIC Blog and Podcast

Objective: Keep Members and the community informed with the latest news, opinions, and research from APNIC and the wider community.

- The Blog averaged 80,351 views per month, a 16.9% increase on 2021’s monthly average of 68,721.
- There have been 117 Guest Posts in 2022, representing 60% of total opinion posts (an increase on 2021’s 56%).
- Popular new posts included:
 - [When volcanoes go bang, submarine cables do... what?](#), a Guest Post by Ulrich Speidel.
 - [IP addressing in 2021](#), by Geoff Huston.
 - [TCPLS: Modern transport services with TCP and TLS](#), a Guest Post by Florentin Rochet.
 - [BGP in 2021 – The BGP Table](#), by Geoff Huston.
- Fourteen episodes of the ‘PING’ Podcast were published, attracting 4,955 ‘impactful plays’ (episode listens of 75% or longer), an average of 354 plays per episode.

	Jan	Feb	Mar	Apr	May	Jun	Jul	All time
Views	68,679	62,523	85,087	85,812	93,389	84,728	82,237	4,026,041
Posts	28	27	34	28	32	43	29	3,007

Table 13: APNIC Blog activity

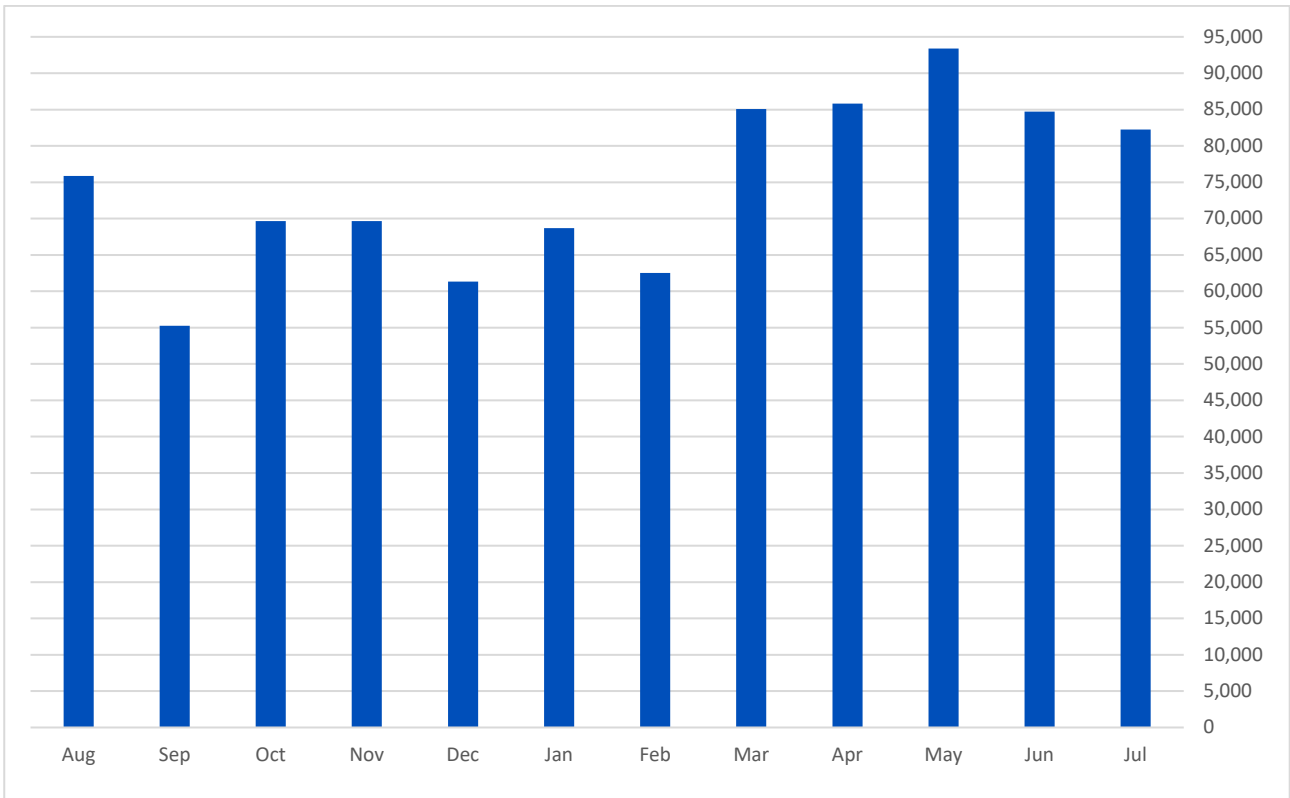


Figure 27: APNIC Blog views

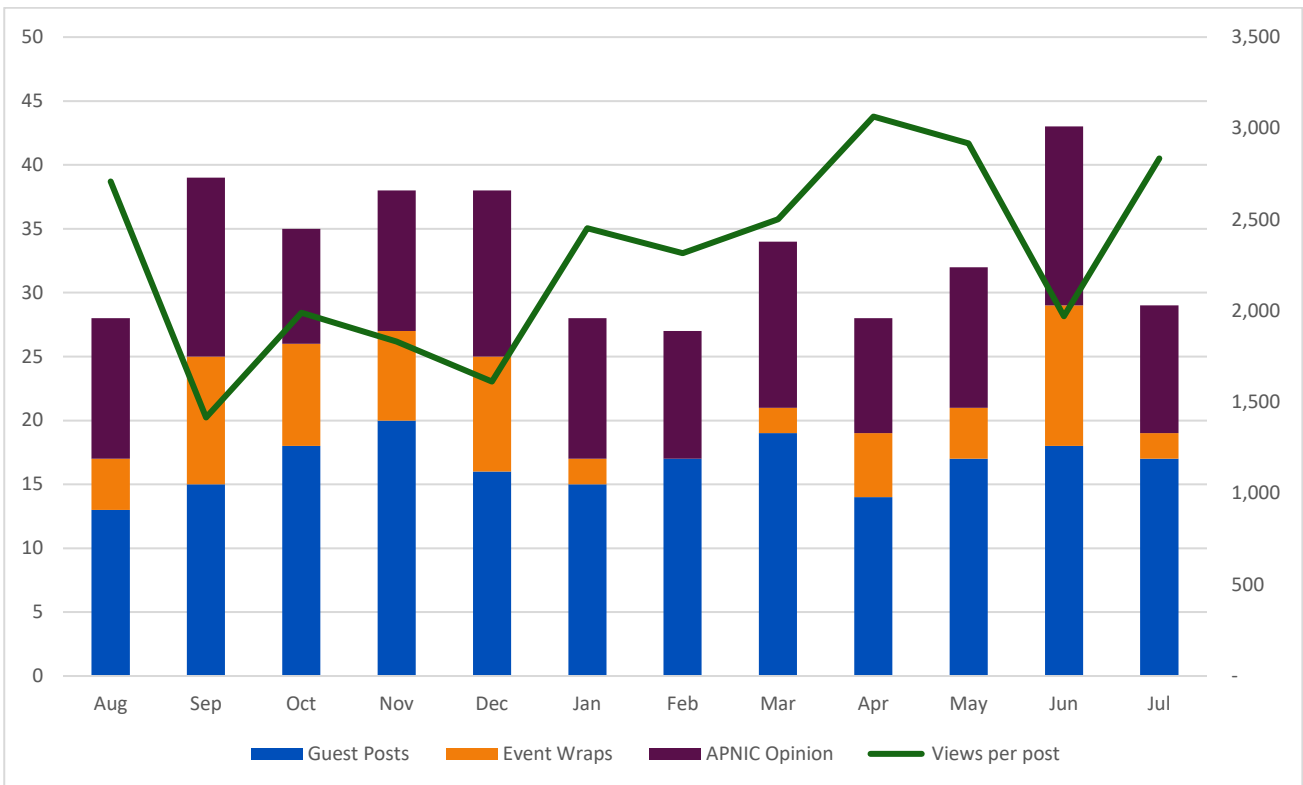


Figure 28: APNIC Blog posts

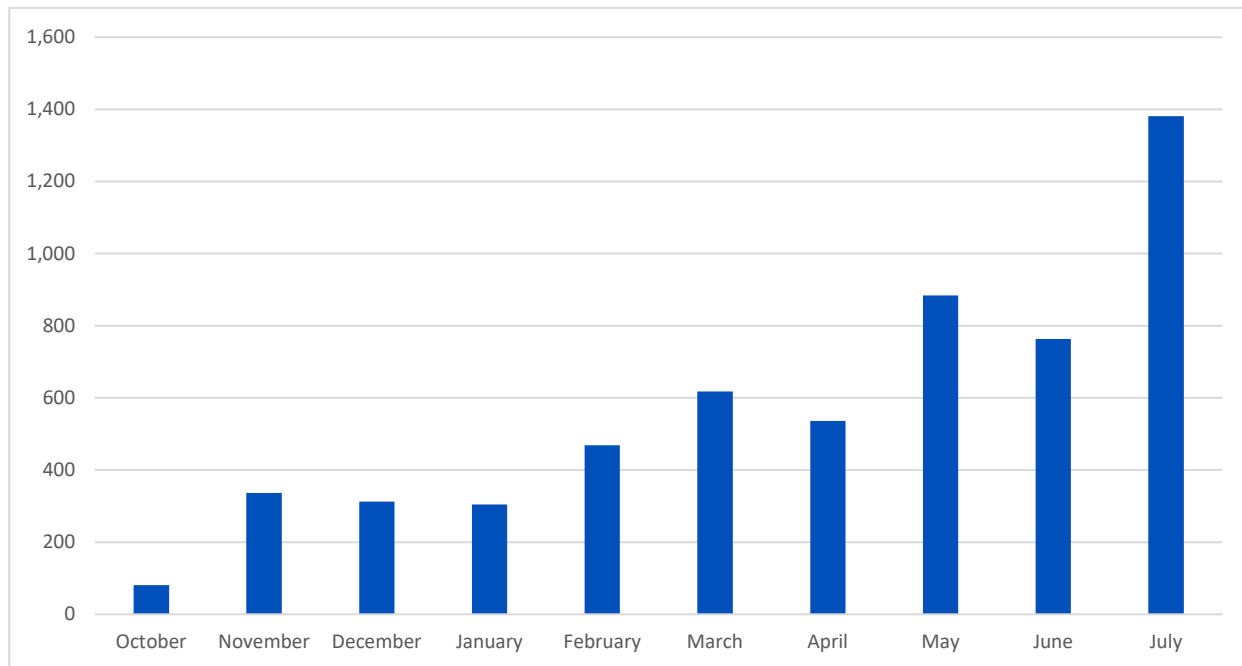


Figure 29: Podcast Impactful Plays

Success Indicators – 4A.1.		Results	Status
1	Achieve average of at least 70,000 Blog views per month.	80,351	●
2	Maintain Blog Guest Post ratio between 45-65%.	60%	●
3	Achieve at least 4,000 podcast listens.	4,955	●
4	Achieve a Blog satisfaction rating of at least 5.95/7 in the APNIC Survey.	N/A	●

4A.2 Information product management

Objective: Provide meaningful and useful information services to Members and the community.

- A significant increase in new users was achieved using paid search promotion for REx and NetOX. This has also increased the number of returning users.
- The paid search campaign will continue throughout 2022 to explore retention in search-recruited users.

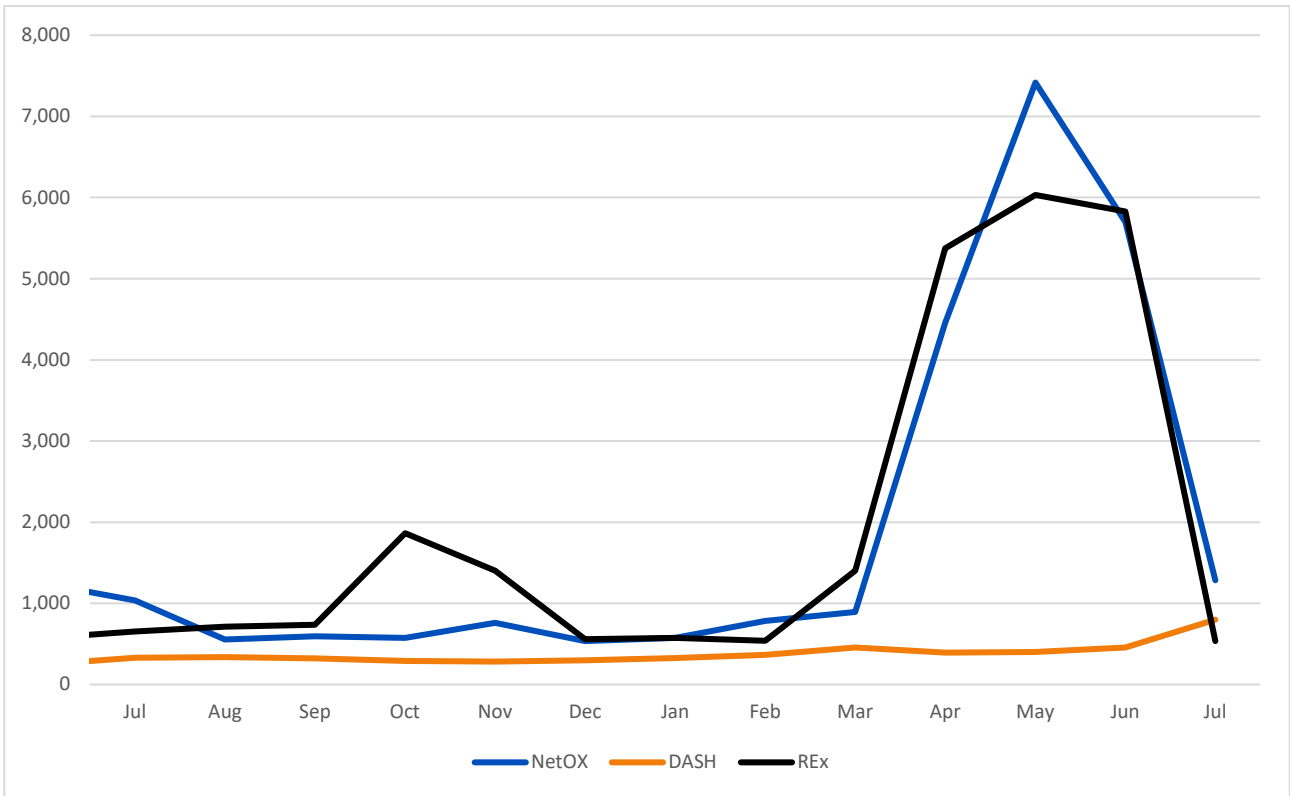


Figure 30: Monthly number of users

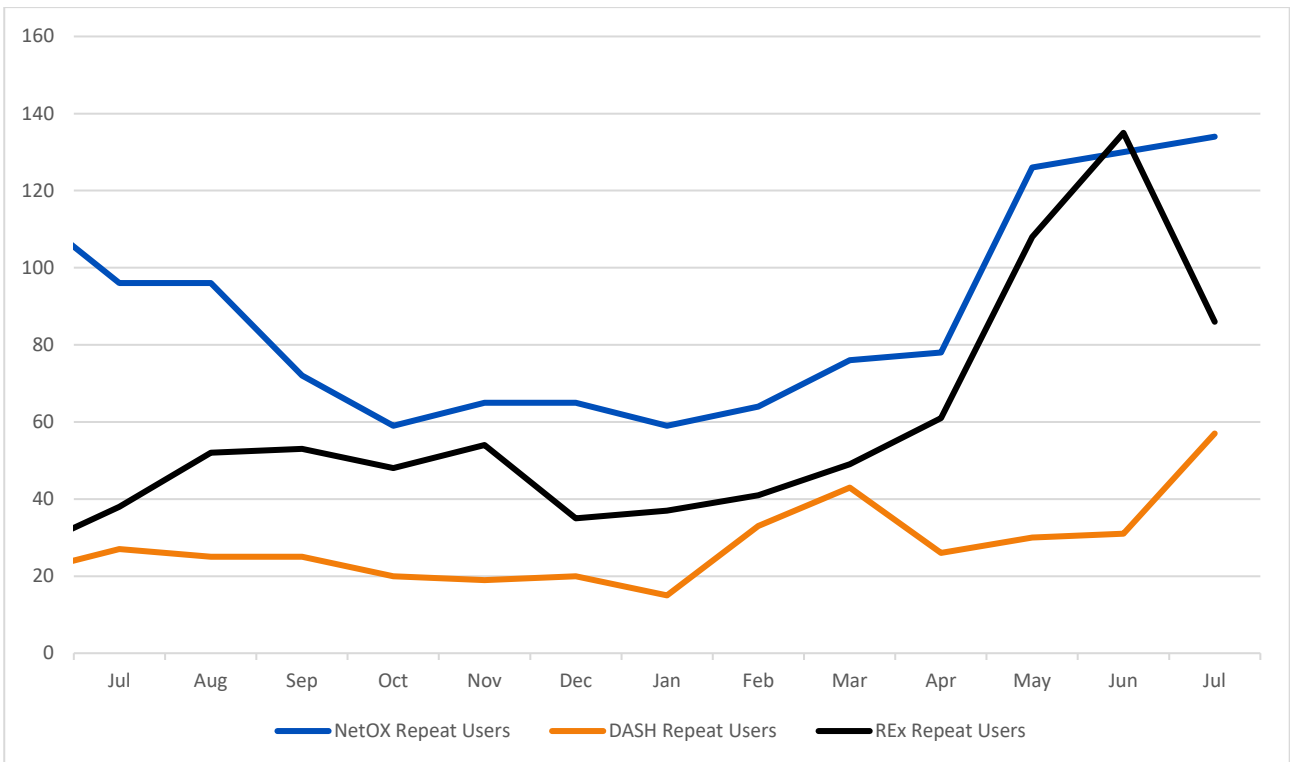


Figure 31: Monthly number returning users

	Success Indicators – 4A.2.	Results	Status
1	Maintain Information Product availability of at least 99.95%.	100%	●
2	Reach an average of 500 users per month of DASH, and 1,000 users per month of REx and NetOX.	NetOX: 1,284 REx: 534 DASH: 799	●
3	Achieve a NPS of 60+ for all products.	NetOX: 48 REx: 42 DASH:39	●
4	Maintain a usability score of at least 4.5/5 for all products.	NetOX: 4.4 REx: 4.2 DASH: 4.1	●

Investments

4A.3 Information product development

Objective: Develop meaningful and useful information services for Members and the community.

REx

- User interface improvements — including consistency in chart values, chart sizes, date selection and navigation fixes — were deployed.
- Design of worldwide statistics changes to navigation and charting commenced in Q2.

DASH

- Suspicious traffic alerts were deployed.
- Routing information pages were deployed.
- Work commenced on an APNIC notifications platform, which will be deployed in Q3.
- Work on notifications in routing inconsistencies will be deployed in Q3.

NetOX

- The ‘comparison’ feature was deployed.
- Improvements to systems monitoring and service stability were deployed.

	Success Indicators – 4A.3.	Results	Status
1	Achieve all 2022 goals, according to the Information Products Roadmap .	3 completed 2 in progress 2 in backlog	●

4B Research and Analysis

Operations

4B.1 Conducting research and measurements

Objective: Gain a greater understanding of technical issues, trends, and how the Internet operates.

- New measurements on the use of IPv6 as a transport protocol for the DNS and IPv6 Extension Header handling, including fragmentation, were completed.
- Analysis of IPv4 and IPv6 advertised, unadvertised and reserved address pools over time continues.
- Completed reporting on the annual state of BGP, and further development of routing bogon and CIDR reports, as input to the ISOC MANRS activity. Work continues on automated BGP anomaly detection.
- DNS research included analysis of the handling of large DNS responses, adoption of DOH, and DNS query patterns.
- Measurement of QUIC use continues, following the release of beta software that adds QUIC support to NGINX servers.
- Research is also in progress on ECN measurement and RSA 2048-bit keys in DNSSEC.
- Published 18 blog articles and recorded six podcasts.

	Success Indicators – 4B.1.	Results	Status
1	See 4B.3		

4B.2 Research cooperation

Objective: Collaborate and share resources to improve research outcomes and impacts.

- Continued cooperative research with ISOC in support of MANRS, providing a feed of routing data.
- Provided collaborative measurements on aspects of the DNS and DNSSEC as part of a cooperative research agreement with ICANN.
- Research collaboration continues with Cloudflare.

	Success Indicators – 4B.2.	Results	Status
1	Undertake at least two significant cooperative research activities.	3 collaborative research projects	●

4B.3 Sharing research outcomes

Objective: Help Members make better informed decisions on their network operations.

- Delivered 24 presentations at community and industry events.

	Success Indicators – 4B.3.	Results	Status
1	Publish at least 12 articles or reports on resource outcomes.	18 articles	●
2	Present at least 12 research presentations, including at least two at APNIC conferences.	24 presentations	●

5 Capability



Operations

5A Internal Technical Infrastructure

5A.1 Architecture and technical coordination

Objective: Build efficiencies and reduce costs through use of a coordinated common infrastructure by multiple product teams.

- Reviewed technology platforms with particular attention to the end of life of CentOS 7 and JDK versions. CentOS 7 will be replaced with Redhat Enterprise Linux 7 in 2023.
- Objectives and requirements for repository health metrics were developed, with work starting in Q2.
- Product quality and security process documentation was coordinated in preparation for ISO9001 and ISO27001 audits in Q3.

	Success Indicators – 5A.1.	Results	Status
1	Review technology recommendations once per quarter.	Q1 & Q2 completed	●
2	Report quarterly on architectural decisions and directions.	Q1 & Q2 completed	●

5A.2 Network and infrastructure operations

Objective: Ensure high availability of APNIC’s infrastructure.

- Progress continued on deploying a shared POP in Singapore SG1 for both APNIC critical services and an M-root global anycast node.

	Success Indicators – 5A.2.	Results	Status
1	Complete quarterly data centre failover and backup recovery tests.	Q1 & Q2 completed	●
2	Respond to all critical incidents within 20 minutes.	No critical incidents	●
3	Maintain availability of 99.99% for critical APNIC services and 99.95% for less-critical services.	Both 99.99%	●

5A.3 System and platform operations

Objective: Support APNIC’s public service delivery with reliable, secure, and high-performance systems.

- Completed migration of community mailing lists to Mailman 3, with Okta SSO support.
- A new Hardware Security Module (HSM) is being configured for RPKI to allow data centre failover.

- RPKI RRDP has been deployed in APNIC’s Cloudflare and Google Cloud CDN instances.
- Deployed new RDNS anycast nodes in Mumbai, Tokyo, Melbourne, and Miami.

	Success Indicators – 5A.3.	Results	Status
1	Deploy additional Hardware Security Module (HSM) to High Availability (HA) group in multiple data centres.	In progress	●
2	Complete CentOS migration plan.	In progress	●
3	Deploy redundant load balancers.	In progress	●

5A.4 Internal security operations

Objective: Maintain strong internal security operations to appropriate standards of best practice to avoid service disruption and data loss.

- HackerOne support for APNIC’s Vulnerability Reporting Program (VRP) and continuous penetration testing now in full production.
- Preparation completed for ISO 27001 certification audit, scheduled in August.
- Published DNS Certification Authority Authorization (CAA) for APNIC domains to prevent unauthorized certificate creation from unlisted CAs.

	Success Indicators – 5A.4.	Results	Status
1	Achieve ISO27001 certification.	Scheduled for August	●
2	Mitigate all critical vulnerability reports within seven days and resolve within 30 days.	On track	●

5A.5 Enterprise applications and IT support

Objective: Provide secure and reliable enterprise technologies to support Secretariat operations.

- Internal Confluence servers were migrated to Atlassian Cloud.
- Sage People HR management was rolled out, with automation by internal Okta. Work on automating onboarding of new staff is progressing.
- Completed Foundation wiki migration to Confluence, on Altassian Cloud.
- The Legacy Application roadmap to migrate from certificate-based auth to Okta is in progress, including an upgrade of RT (internal ticketing system), to be completed in Q3.

	Success Indicators – 5A.5.	Results	Status
1	Meet SLA of two business-day response for internal IT support.	SLA met	●

Investments

5A.6 Security infrastructure upgrades

Objective: Harden APNIC systems and security infrastructure to reduce security risks and protect Member information.

- Red Hat patch management subscription service is being tested.
- External monitoring of email SPF and DMARC has been deployed through MXToolbox.
- APNIC DANE TLSA record is now using a public certificate.
- A project team has been created to work on privileged access management and improve user authentication as part of the the zero-trust network and server access project.

	Success Indicators – 5A.6.	Results	Status
1	Complete automation of patch management.	In progress	●
2	Complete email business rule deployment using standard best practice.	In progress	●
3	Implement improved user authentication and access management system.	In progress	●

5B Finance and Business Services

Operations

5B.1 Internal knowledge management

Objective: Maintain effective methods, structures, and tools to retain and retrieve corporate information within APNIC.

- Migration of document management to SharePoint was completed.
- Internal administrative and HR documentation successfully migrated.

	Success Indicators – 5B.1.	Results	Status
1	Complete migration during Q1 2022.	Completed	●

5B.2 Financial services

Objective: Transparent and efficient management and reporting of APNIC’s financial affairs.

- With the implementation of the 2022 Activity Plan and Budget, and updated monthly forecast process in tracking income, expenses, and expense variations from budget.

- The annual audit of APNIC’s 2021 financial accounts was completed by Ernst & Young, and presented to the EC at APNIC 53.
- A Private Ruling application was submitted to the ATO to renew APNIC’s mutuality status for tax purposes.
- Accounting procedures to manage APNIC Foundation-funded projects in 2022 were developed.

Success Indicators – 5B.2.		Results	Status
1	Achieve a successful audit of APNIC’s annual financial accounts.	Completed	●

5B.3 Business services

Objective: Effectively support Secretariat operations and travel.

- Improvements were implemented in travel booking and risk management procedures, with continual monitoring of COVID-related travel risks and requirements.
- A new set of “eco-APNIC” standards, and a new management process, were introduced for APNIC promotional items.
- A self-service parking booking app was launched in Q1.

Success Indicators – 5B.3.		Results	Status
1	Maintain all Office facilities to established annual schedule.	In progress	●
2	Audit travel requests and expense transactions for policy alignment.	In progress	●

5B.4 Business intelligence and data analytics

Objective: Improved decision making from the increased availability and accessibility of relevant, cross-system information sources.

- Continued to improve usage of Jira, Confluence, Salesforce, Tableau/FusionCharts and SharePoint to automate creation of report content (charts, tables, and narratives).
- Automated scripts have been developed to prepare data and generate standardized charts and visualizations for use in reports and presentations.

Success Indicators – 5B.4.		Results	Status
1	100% automation of monthly Secretariat reporting data/charts from the BI system.	40% complete	●

Investments

5B.5 Data management and governance

Objective: Ensure availability of quality and accurate data to support decision making.

- Within APNIC’s data model, ownership/stewardship has been assigned to improve data capture, management, and processing.
- A data management and governance system based on [Certus/IRIS](#) was selected, and implementation is underway.
- A graph database is in development, built on ‘Neo4J’, integrating data from routing tables, whois/RDAP, RPKI, reverse DNS, and other data sources in future. Practical applications have been found in forensic analysis of Internet resource usage.
- APNIC Membership and Registry data is ingested into the Data Vault daily, and reports and charts data are sourced from it.

	Success Indicators – 5B.5.	Results	Status
1	Data model and governance are documented and implemented.	40% complete	●
2	Data ingestion system established and working effectively.	30% complete	●

5C Employee Experience


Operations

5C.1 Organizational development

Objective: Optimize internal capability, including improved processes, effective communication, and adaptation to organizational challenges.

- A biannual “People Pulse” survey was launched in April 2022. The staff engagement level of 83% exceeded the global benchmark of 76%.
- Personalised coaching (from LeaderShape) is being provided to staff as needed.
- A career pathway framework is in development to support a comprehensive succession plan, to be completed in Q3.
- An internal communications specialist was appointed in April.



	Success Indicators – 5C.1.	Results	Status
1	Complete Agile adoption by end of Q2 2022.	Completed	●
2	Staff satisfaction ratings meet or exceed external benchmarks in 2022.	1 st survey exceeded benchmark	●

3	An Internal Communications specialist is appointed by end of Q2 2022.	Completed	
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5C.2 Work environment management

Objective: Ensure all places of work and workplace practices for APNIC staff (both the office and remote locations) are fit for purpose.




- Flooding in Brisbane in March caused subsidence damage to the carpark. Consultation with specialist engineers and associated trades was completed, and an insurance claim is pending.
- A refurbishment plan for the current premises at Cordelia Street has been finalized.
- All government guidelines for COVID-infected staff are observed and those infected provided with necessary support.

	Success Indicators – 5C.2.	Results	Status
1	Zero WHS incidents due to APNIC-controlled environmental factors.	No incidents	
2	All travellers meet travel safety requirements as per the Travel Health Policy.	100% compliance	

5C.3 Talent attraction and retention

Objective: Attract and retain the best possible talent to deliver on APNIC’s Vision and Mission.

- Recruitment is planned and fulfilled according to the Workforce Plan for 2022 (See HR report).
- Talented staff in training, software development and UX roles are in high demand, resulting in increased staff turnover and extended delays in recruitment.

	Success Indicators – 5C.3.	Results	Status
1	Maintain staff turnover rate within benchmark of 5-15%.	3%	
2	Fill all open roles within 90 days from advertisement.	52-day average	
3	Every advertised vacancy has a minimum of four simultaneous candidate sources.	100% compliance	

5C.4 People operations management

Objective: Ensure the employee value proposition and experience supports the attraction and retention of diverse and talented team members, and that policies and practices meet global standards.

- New Employee Value Proposition video and updated careers page launched.
- Parental Leave Policy reviewed and improved to meet best current practice.
- Halogen HR performance platform decommissioned and replaced by Sage People.

- All HR records migrated successfully to SharePoint.

	Success Indicators – 5C.4.	Results	Status
1	Complete deployment of all selected modules of the Sage People system.	In progress	●
2	Demonstrate reduced cost of HR administration platforms.	In progress	●
3	Payroll review completed by end of Q3 2022.	Not yet commenced	●

Investments

5C.5 APNIC workspace improvement

Objective: Enhance collaborative working at the APNIC office and for remote employees.

- Workshops were conducted with O’Neill Architects for the design of the future APNIC premises at Breakfast Creek Road.
- Upgrade plan for current Cordelia Street premises to address APNIC requirements of the next two to three years completed. Furnishings will be selected for relocation and future use in the new premises.
- Construction of the refurbishment work was put out for tender and is due on 22 August.

	Success Indicators – 5C.5.	Results	Status
1	Complete all budgeted facility upgrades by end of Q3 2022.	In progress	●

5D Governance

Operations

5D.1 Executive Council (EC) support

Objective: Facilitate EC processes and activities of the highest integrity.

- Sumon Ahmed Sabir, Kam Sze Yeung, and Achie Atienza were elected to the APNIC EC for two-year terms.
- Two EC meetings have been held (Meeting 1: 21 February and 3 March, Meeting 2: 26-27 May).

	Success Indicators – 5D.1.	Results	Status
1	Achieve a satisfaction rating of at least 6/7 from a survey of EC members.	Survey scheduled for Q4	●

5D.2 Corporate governance and legal

Objective: Mitigate legal risk in all APNIC activities.

- The Strategic Risk Register was updated and presented to the EC for quarterly review.
- The Product Development area has drafted an ISO 9001 process in preparation for full certification.
- Internal audits of the quality management system with policy, process, and procedure owners in preparation for ISO 9001 recertification were completed. Additional work was done to document processes within product development, Academy, and training delivery, as this is now included in the recertification.
- The Whistleblower Policy has been prepared and a dedicated external provider engaged to assist with deployment and management of reports.
- In relation to professional conduct standards, all related policies are being reviewed, and organizational culture reinforced to avoid the possibility of incidents.

	Success Indicators – 5D.2.	Results	Status
1	Update Strategic Risk Register quarterly.	Q1 & Q2 complete	●
2	Achieve full ISO 9001 quality management system recertification.	In progress	●
3	Undertake quarterly BCP scenario testing.	Q1 & Q2 complete	●

5D.3 Corporate social responsibility

Objective: Enhance APNIC’s position as an environmentally and socially responsible organization.

- Presentations to staff from environmentally friendly superannuation providers were delivered.
- Promotional items were reviewed and are now sourced from sustainable and ecologically-friendly suppliers.

	Success Indicators – 5D.3.	Results	Status
1	Corporate social responsibility program developed and approved.	In progress	●

Events/Activities in 2022

Month	Event: Event Name	City	Economy
Jan	4th Interregional Meeting for Preparation of WTSA-20	Online	CH
	4th Meeting of the APT Preparatory Group for WTDC-21 (APT WTDC21-4)	Bangkok/Online	TH
	9th Meeting of ITU TSAG (Telecommunication Standardization Advisory Group)	Online	CH
	Cryptography Fundamentals Tutorial	Online	AP
	Cryptography Fundamentals Tutorial	Online	AP
	IPv6 Protocol, Architecture & Address Planning Tutorial	Online	AP
	IPv6 Protocol, Architecture & Address Planning Tutorial	Online	AP
	JANOG 49	Kagoshima	JP
	Looking Lower: Programmable Data Planes (Part 1)	Online	AP
	MyFinTechWeek 2022	Online	MY
	OSPF Operation Tutorial	Online	AP
	OSPF Operation Tutorial	Online	AP
	PTC'22	Honolulu	US
	Feb	1st IGF 2022 Open Consultations and MAG Meeting	Online
2nd Meeting of the APT Preparatory Group for PP-22 (APT PP22-2)		Bangkok/Online	TH
AP* February 2022		Online	
APNG Camp 15		Online	AP
APNIC's Vulnerability Reporting Program		Online	AP
APRICOT 2022/APNIC 53		Online	BD
APRICOT 2022/APNIC 53: Network Automation Tutorial		Online	BD
APRICOT 2022/APNIC 53: Segment Routing Tutorial		Online	BD
AVPN South Asia Social Investment Summit		Online	OP4
BGP Fundamentals & Attributes Tutorial		Online	AP
BGP Fundamentals & Attributes Tutorial		Online	AP
Cryptography Fundamentals Tutorial		Online	AP
Cryptography Fundamentals Tutorial		Online	AP
DNS Fundamentals Tutorial		Online	AP
DNS Fundamentals Tutorial		Online	AP
DNS-OARC 37		Austin/Online	US
IPv6 Protocol, Architecture & Address Planning Tutorial		Online	AP
IPv6 Protocol, Architecture & Address Planning Tutorial		Online	AP
IRINN: IPv6 Protocol, Architecture & Address Planning Tutorial		Online	IN
ISIF Asia 2021 Grantee Welcome Session		Online	AP
IS-IS Operations Tutorial	Online	AP	

	IS-IS Operations Tutorial	Online	AP
	ITU GSS-20 (Global Standards Symposium)	Geneva	CH
	M3AAWG 54th General Meeting	San Francisco/Online	US
	NANOG 84	Online (Austin)	US
	NRO EC Meeting	Dubai	AE
	OSPF Operation Tutorial	Online	AP
	OSPF Operation Tutorial	Online	AP
Mar	20th ITCN Asia and Telecom Conference and Expo	Hybrid	PK
	APAC DNS Forum 2022	Online	
	APAN 53	Hybrid	BD
	APAN 53: IPv6 Deployment and Address Planning Tutorial	Dhaka	BD
	APNIC - KHNOG Training: Network & Information Security	Online	KH
	Assessing the Promise of Low Earth Orbit (LEO) Satellites in Accelerating Rural	Online	PH
	bdSIG 2022	Online	BD
	BGP Fundamentals & Attributes Tutorial	Online	AP
	BGP Fundamentals & Attributes Tutorial	Online	AP
	CNNIC : IPv6 Deployment and RPKI Workshop (Delivered in Mandarin)	Online	CN
	DNS Fundamentals Tutorial	Online	AP
	DNS Fundamentals Tutorial	Online	AP
	DWDM Fundamentals (Part-1)	Online	AP
	ICANN 73	Online	PR
	IETF 113	Vienna / Online	AT
	Indonesia HoneyNet Project Workshop	Online	ID
	IPv6 Deployment & Transition Techniques Workshop	Online	PK
	IPv6 Deployment & Transition Techniques Workshop	Online	PK
	IS-IS Operations Tutorial	Online	AP
	IS-IS Operations Tutorial	Online	AP
	ITU WTSA-20	Geneva	CH
	MMIX AGM & mini Peering Forum 2022	Virtual	MM
	NRO-PACG f2f meeting	Geneva	CH
	Operational & Planning Aspects of DWDM (Part-2)	Online	AP
	PacSON Virtual Webinar	Online	OP1
	PhNOG 2022	Online	PH
	PhNOG 2022: APNIC Tools - Visualisation and Troubleshooting	Online	PH
	PhNOG 2022: DNS and Root Server deployment	Online	PH
	PhNOG 2022: RPKI/ROV Refresher and ROA Session	Online	PH
	Quarterly Threat Sharing & HoneyNet Community Session	Online	
	Technology for Change Week Asia 2022	Hong Kong	HK

Apr	APT Extraordinary meeting for ITU WTDC-21 (WTDC-e)	Online	TH	
	ARIN 49	Nashville	US	
	AUSNOG 2022	Sydney	AU	
	BNE0x33 (52nd Session) - SecTalks Brisbane	Brisbane	AU	
	BrisSEC 2022	Brisbane	AU	
	Building your own switch with P4 (Part 2)	Online	AP	
	Connections 2022 - A post-IETF 113 Forum	Online	IN	
	DNSSEC Fundamentals Tutorial	Online	AP	
	DNSSEC Fundamentals Tutorial	Online	AP	
	DNSSEC Fundamentals Tutorial	Online	AP	
	Internet Routing Fundamentals Workshop - Malaysia	Online	MY	
	IPv6 Transition: East Asia Perspective	Online	AP	
	Meaningful Access to Advance Digital Societies - UNCTAD's E-Commerce Week	Online	CH	
	MPLS Fundamentals Tutorial	Online	AP	
	MPLS Fundamentals Tutorial	Online	AP	
	MPLS Fundamentals Tutorial	Online	AP	
	Network Monitoring and Management (NMM) Fundamentals Tutorial	Online	AP	
	Network Monitoring and Management (NMM) Fundamentals Tutorial	Online	AP	
	Network Monitoring and Management (NMM) Fundamentals Tutorial	Online	AP	
	OECD - 6th Session of the Working Party on Security in the Digital Economy	Online	FR	
	PCTA 2022 - Intro to IXP Tutorial	Online	PH	
	PCTA 2022 - Network & Information Security Tutorial	Online	PH	
	PCTA 2022 - Network Monitoring & Management Tutorial	Online	PH	
	PCTA e-Tech Show 2022	Manila	PH	
	Registration Services Coordination Group (RSCG) f2f Meeting	Nashville	US	
	RPKI Deployathon	Sydney	AU	
	Security Monitoring workshop with MyREN community	Online	MY	
	yIGF Myanmar 2022	Online	MM	
	May	3rd ICANN APAC-TWNIC Engagement Forum (37th TWNIC OPM)	Taipei	TW
		3rd Meeting of the APT Preparatory Group for PP-22 (APT PP22-3)	Tokyo	JP
53rd AI3 & SOI Asia Joint Meeting		Online	AP	
AIS'22 (AFRINIC 35)		Pointe aux Biches	MU	
APEC TEL WG 64th meeting		Online	TH	
APNIC: Bangkok - Network Management and Monitoring Workshop		Bangkok	TH	
APNIC: Singapore - Network and Information Security Workshop		Singapore	SG	

	APNIC 54 site visit	Singapore	SG
	APNIC EC Meeting - 26-27 May 2022	Brisbane	AU
	AusCERT 2022	Gold Coast	AU
	BKNIX Peering Forum / ThaiNOG – Securing DNS with DNSSEC	Bangkok	TH
	BKNIX Peering Forum 2022	Bangkok	TH
	Breach and Attack Simulation Tools	Online	AP
	Corporate Device Management – Securing your employees devices	Online	AP
	CSP Content Creation/Update Workshop	Canberra	AU
	CSP Threat Landscape 3	Online	
	DNS Ecosystem Conference	Online	CN
	ELT Quarterly Strategic Meeting 2022	Brisbane	AU
	Global Digital Development Forum 2022	Online	US
	ICANN DNS Symposium 2022	Online	
	INNOG:5 Routing Fundamentals Tutorial	Online	IN
	INNOG 5	Online	IN
	INNOG 5: DNS Fundamentals	Online	IN
	INTERPOL Cybercrime Conference for LEAs and Judicial Authorities	Phuket	TH
	IPv6 Deployment and Security Tutorial	Online	AP
	IPv6 Deployment and Security Tutorial	Online	AP
	IPv6 Deployment Workshop - Laos	Online	LA
	IRINN: IPv6 Transition Techniques	Online	IN
	LACNIC 37	Online	CO
	NZNOG: Internet Routing Tutorial	Wellington	NZ
	NZNOG 2022	Wellington	NZ
	Packet Analysis Tutorial	Online	AP
	Packet Analysis Tutorial	Online	AP
	PITA Business Forum & Exposition 2022	Nadi	FJ
	RIPE 84	Berlin	DE
	Rise Indonesia	Denpasar	ID
	RPKI - Philippines Session	Online	PH
	Visit to RIPE-NCC	Amsterdam	NL
	VNNIC – IPv6 Security and RPKI Workshop	Online	VN
	What next for Afghanistan?	Online	AF
	YIGF Nepal 2022	Online	NP
Jun	APJII/IDNIC visits APNIC	Brisbane	AU
	APNIC: APT Mongolia IPv6 Deployment Workshop	Online	MN
	AVPN Global Conference 2022	Bali	ID
	bdNOG 14	Cox's Bazar	BD
	bdNOG 14: Segment Routing Workshop	Cox's Bazar	BD
	bdNOG 14: System and Network Security Workshop	Cox's Bazar	BD
	BGP Policy Control Tutorial	Online	AP

	BGP Policy Control Tutorial	Online	AP
	CommunicAsia 2022	Singapore	SG
	FIRST Annual Conference 2022	Dublin	IE
	ICANN 74	The Hague	NL
	Indonesia MCIT webinar on 5G, IoT and IPv6	Yogyakarta	ID
	Introduction to SDN/OpenFlow Tutorial	Online	AP
	Introduction to SDN/OpenFlow Tutorial	Online	AP
	ITU WTDC 2021 (World Telecommunication Development Conference)	Kigali	RW
	M3AAWG 55th General Meeting	London	GB
	NRO EC Face to Face Meeting - Miami	Miami	US
	QUT - Internet Infrastructure Security Best Practices - Presentation	Brisbane	AU
	Reverse DNS Tutorial	Online	AP
	Reverse DNS Tutorial	Online	AP
	RightsCon 2022	Online	US
	ROA Creation and Update- Philippines Session	Online	PH
	Root Server Deployment and Operations	Online	AP
	RPKI - Cambodia Session	Online	KH
	RPKI - Philippines Session	Online	PH
	Security Assurance In the Internet of Things	Online	AP
	SNMP Fundamentals Tutorial	Online	AP
	SNMP Fundamentals Tutorial	Online	AP
	Telekom Malaysia Cyber Security Seminar	Online	MY
	TWNIC – Network Security Workshop	Online	TW
	USAID Symposium on Advancing Open RAN	Online	AP
	VNNIC Internet conference 2022	Da Nang	VN
Jul	AFRINIC Staff Exchange	Ebene	MU
	APNIC: APT Myanmar Network Security Workshop	Online	MM
	BSides Brisbane 2022	Brisbane	AU
	CNNIC : IPv6 Deployment (Delivered in Mandarin)	Online	CN
	Defend your Web Apps for free with mod Security	Online	AP
	DNS OARC 38	Philadelphia	US
	Historical Resource Management and the benefits of RPKI	Online	AP
	IDNOG 7	Jakarta	ID
	IDNOG 7 2022 - SDN Workshop	Jakarta	ID
	IETF 114	Philadelphia	US
	IGF 2022 2nd Open Consultations & MAG Meeting	Online	CH
	IPv6 Transition Techniques	Online	AP
	IPv6 Transition Techniques	Online	AP
	JANOG 50	Hakodate	JP
	PhNOG 2022 Hybrid	Makati	PH
	PhNOG 2022 Hybrid- DNSSEC & DNS Privacy	Makati	PH

PhNOG 2022 Hybrid - RPKI & BGP Security	Manila	PH
RPKI/ROV Tutorial and ROA Session Cambodia	Online	KH
RPKI/ROV Tutorial and ROA Session Mongolia	Online	MN
SANOG 38	Kathmandu	NP
SANOG38 Network Management and Monitoring	Kathmandu	NP
Site Visit to PH for Apricot 2023	Manila	PH
Transport Layer Security (TLS) and Secure Socket Layer (SSL)	Online	AP
Transport Layer Security (TLS) and Secure Socket Layer (SSL)	Online	AP
UNODC Seminar on Ransomware	Online	AP
Visit to India: NIXI/IRINN, NKN etc	New Delhi	IN

Table 14: Events attended

Agenda Item 11

APNIC Survey update



2022 APNIC Survey Report



APNIC



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Introduction & Methodology

As an open membership-driven organization, APNIC operates on continuous feedback and implementation cycles. Commissioned by the APNIC Executive Council (EC) and conducted every two years, the APNIC Survey is a valuable feedback tool, used to improve APNIC performance, target activities and inform APNIC's strategic planning. This is the twelfth iteration of the APNIC Survey program.

The survey is a comprehensive process, with consultations in the form of Individual Depth Interviews (IDIs) with Members and Stakeholders conducted first, followed by an online quantitative survey which is open for anyone with an interest in the Internet community to participate.

In 2022, the consultations were held via video conference during March and April and the online survey was open for participation by APNIC Members and other Stakeholders (Members of NIRs or others involved in the Internet community) from 13 June and 7 July 2022.

In 2020 the APNIC Survey was conducted at the onset of the COVID-19 pandemic, and as a result it was not included in any of the topics canvassed. Two years on, and with continued disruptions and restrictions prevalent, the effects of the pandemic on Members, organizations and economies were included in both the individual consultations and the online questionnaire to provide APNIC with information about the challenges and opportunities arising from the pandemic on different types of organizations and economies.

As in previous years, the survey also sought to understand the specific Internet related challenges facing the community, and ideas and suggestions for where APNIC may be able to assist with these, as well as testing experiences with APNIC services and activities.

The survey forms an integral part of APNIC's strategy and planning, and is used to guide decisions about where to focus efforts to provide maximum benefit to Members and the Internet community in the Asia Pacific region.

Survey Matters were again commissioned by the APNIC EC to conduct the survey, to ensure anonymity of responses and impartial evaluation of the results. Individual responses are not identified in this report; results are provided at an aggregate level only. To further protect participant anonymity, no organizations or locations are noted against the verbatim comments provided in this report. No identifying data has been provided to APNIC.

This report provides the full feedback from the online survey, and also draws on the feedback from the individual consultations. These consultations, along with the substantial verbatim comments provided within the online survey, add richness and depth to the quantitative findings.

Response Rates and Sample

Following a comprehensive communication and survey distribution program, 1,654 responses were received and, after data cleansing, 1,622 responses remained. The sample size provides 95% confidence that results are within +/- 3% of presented figures.

Of the responses received, 65% were received from APNIC Members or Account Holders, 16% from members of NIRs in the region, and the remaining 19% from other Stakeholders.

As in previous years, most responses (92%) were from the Asia Pacific economies served by APNIC, with 8% from economies outside the region.

The composition of the sub-region sample remained largely the same as in 2020, with 17% of responses from East Asia and Oceania, 28% from South East Asia and 30% from South Asia.

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.

Interviews

Conducting qualitative research 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 the online survey instrument.

As in 2020, Individual Depth Interviews (IDIs) were conducted by video conference. A total of 37 IDIs were conducted spanning 25 economies. A majority of the Interviews were conducted with APNIC Members or Account Holders, with six conducted with Stakeholders within the region. All seven of the APNIC NIR Members were also consulted.

Please refer to Table 1 for the locations if the IDIs.

Online Survey

The quantitative survey was designed by Survey Matters in collaboration with APNIC and approved by the APNIC EC.

It was based on the feedback from the IDIs, and also included tracking or benchmarking questions to monitor APNIC performance over time.

The survey questionnaire also asked several new questions in 2022, largely to understand the impacts to Members and Stakeholders from the global coronavirus pandemic.

2022 Interview Locations	
Australia	Mongolia
Bangladesh	Nepal
Bhutan	New Zealand
Cambodia	Pakistan
China	Papua New Guinea
Fiji	Philippines
Hong Kong Special Administrative Region of China	Republic of Korea
India	Sri Lanka
Indonesia	Taiwan
Japan	Thailand
Kiribati	Vanuatu
Macau Special Administrative Region of China	Viet Nam
Malaysia	

Table 1 – Interview Locations

In addition, to understand the frequency Members and Stakeholders participate in the biennial APNIC Survey, a question was added to ask whether respondents had taken part in the survey previously.

The 2022 survey questionnaire was designed primarily as a quantitative instrument, but respondents were also given opportunities to provide feedback in their own words and in their own language if desired.

Translation

The survey questionnaire was translated into 10 languages in 2022, based on responses in languages other than English in the 2020 survey.

The languages offered in the online survey were Bengali (Bangladesh), Chinese (Simplified and Traditional), Indonesian, Japanese, Korean, Mongolian, Burmese (Myanmar), Thai, and Vietnamese.

A total of 441 surveys were completed in a language other than English, down from 568 in 2020. However, this still represents almost three in ten (29%) of all surveys completed.

Non-English verbatim feedback was translated back to English using Google translate, with a verification of translations undertaken by language specialists within APNIC. A breakdown of non-English language survey completions by economy is provided on page 14.

Communication and Distribution

The survey was designed as an anonymous online instrument, and hosted by Survey Matters. 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 survey period.

Data Cleansing

At the conclusion of the online survey, Survey Matters undertook data cleansing following the standard protocols for market research. A total of 1,654 responses were reviewed and after interrogation, 32 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 where the information regarding the prize draw was the same.
- Removal of responses where the free text responses were the same, including grammar and wording, and phrases.

Survey Analysis

When analysing the survey data, results have been cross-tabulated 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 current UN classifications.

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.

Differences in opinions have also been examined by organization type, organization size and role or position within the organization. While not presented for every question, where there are significant differences in the findings based on these groups, these are written in the report.

The results to survey questions are displayed as either a mean score (always out of a maximum score of seven) or as a percentage of respondents who selected a positive option. Where possible and appropriate, a full frequency distribution is shown. Comparisons to the 2018 and 2020 surveys are made where possible.

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 interviews conducted when reaching many of our conclusions. In many instances, the quantitative findings are used to validate the issues raised in the interviews. In others, the free text or interview feedback provides further insight into the quantitative findings.



Executive Summary



In the two years since the last APNIC Survey, the region has experienced a global pandemic, geo-political instability, economic turmoil and more frequent natural disasters. It is very pleasing, therefore, to report that throughout this period, APNIC has maintained its position as a provider of valuable Internet-related services and continues to be the trusted partner to Members and Stakeholders across the Asia Pacific region.

Although usage of all APNIC services was lower than in 2020, due to the global response to the COVID-19 pandemic, respondents' satisfaction with the services they use remain high, and largely consistent with the 2020 results.

Ratings of the value and quality of services and membership at an overall level also remain high, and have slightly improved on 2018 and 2020 results.

Positively, there has also been a significant increase in the proportion of respondents rating the quality of the APNIC services and the value of both services and membership as excellent.

In 2018 and 2020 respondents providing an 'excellent' rating of the quality of APNIC services was 35% and 39% respectively. In 2022, this has risen to 54%.

Similarly, the proportion of respondents providing an excellent rating on the value of services has increased from 40% in 2020 to 54% this year, and those rating the value of membership as excellent is also up from 39% in 2020 to 51% in this survey.

These increases were evident across all APNIC regions. As in 2018 and 2020, South Asia (98%) report the highest levels of satisfaction with the value of membership, and while remaining high, those in Oceania report lower satisfaction at 83%.

Engagement with APNIC remains consistent with previous surveys, however use of individual services has declined this year.

More than seven in ten respondents had either used a service, contacted or interacted with APNIC in the past

two years. This is the same proportion as 2020. Respondents from South East Asia (69%) and South Asia (66%) were less likely to have engaged with APNIC, as were those in LDEs (65%). Interaction with APNIC in some form is highest in Oceania, where over four in five have had at least one contact in the past two years, with 32% having used a service or contacted APNIC more than five times.

Despite contact frequency remaining the same as 2020, usage of individual APNIC services has generally declined from 2020, most likely due to the COVID-19 pandemic.

Usage of MyAPNIC declined from 69% in 2020 to 61% this year, and fewer visited the website or used the whois database. There were also fewer respondents who applied for IP addresses (down to 34% from 42%) and slightly fewer respondents report contact with the helpdesk (34%) or having read the blog (29%), down 3% and 4% respectively.

Interestingly, respondents indicating they had taken part in APNIC training increased from 41% in 2020 to 43% in 2022. Stakeholders were significantly more likely to use APNIC training services than Members at 54% and 38% respectively. Respondents from South East Asia (49%) report greater usage of training than their regional counterparts, with East Asia least likely to have engaged in any form of training, at 26%.

Despite lower usage of APNIC services and activities, satisfaction remains high, and largely consistent with prior years.

As in prior surveys, APNIC Academy training (97%) and resource certification (RPKI) (96%) are the most highly rated APNIC services. Routing security (ROA publication) was a new inclusion in the services question in 2022, and this also rated very highly, with 95% providing a rating of above average or higher. It is also worth noting that there were no negative ratings of these services.

In contrast, overall satisfaction with Special Interest Groups (SIGs) and APNIC reverse DNS services fell by 6% this year, to 88% and 87% respectively.

When asked if there were any new or different services APNIC could provide that would offer more value, a third of the verbatim comments indicated that they didn't know, or that they were "happy with the existing product and service".

However, and consistent with the individual Interview feedback, around one in five comments indicated that more advanced training in IPv6, Internet and network security and new technologies would be useful. Comments that "if you could offer customized technical trainings" or "if possible, APNIC should start certification programs in the field of cybersecurity, networking and other related field" would "help me build my skills and experiences as the Networking Engineer".

Consistent with feedback from the Interviews conducted with Members and Stakeholders, APNIC is very well regarded, with respondents highly likely to speak well about the organization.

When asked in Interviews how they would describe APNIC to others, many mentioned that APNIC is the "trusted, reliable partner in the region", and this strong endorsement was echoed in the quantitative survey.

A large majority of Members and Stakeholders (63%) speak highly of APNIC to others, with 19% doing so without being asked.

Similarly, most respondents (89%) agree that APNIC is sufficiently transparent in its activities, and that it is well respected in the Internet community (93%) with those in South Asia (94% and 95%) most likely to agree with these.

However, further examination of the ratings reveals that respondents who strongly agree that APNIC is sufficiently transparent has fallen from 30% in 2020 to 21% in 2022. Those who strongly agree that APNIC is respected in the Internet community has also dropped, from 43% in 2020 to 34% this year. This may be as a result of COVID-19, and should be monitored in future surveys.

Two new statements were also included this year measuring APNIC's responsiveness to the changing needs of the community and the extent to which it practices environmental sustainability in its service delivery.

Positively, almost nine in ten (88%) agree that APNIC responds to the changing needs of the community, and four in five (80%) are satisfied that APNIC practices environmental sustainability in delivery of its services.

While the COVID-19 pandemic has presented challenges and difficulties for business and organizations across the world, it has also provided opportunities for some.

After two years of upheaval and restrictions as a result of the coronavirus pandemic, it was appropriate to test the effects of COVID-19 on Members and Stakeholders, and the organizations they work for. Respondents were asked the primary business-related impacts from COVID-19, with three primary issues identified.

At 48%, the inability to travel and conduct business in-person had the greatest impact on respondents, and this was borne out in the verbatim comments provided. Mentions about the "inability to travel and meet up face to face of important contacts and relationships" or that it was "more difficult to accomplish projects that require face to face interaction or travel" were prevalent.

Managing people working from home was an issue for 47% of participants, with comments that "remote working and bandwidth requirements at the early part of the pandemic" was difficult, and that "remote working made collaboration across team more difficult, and reduced visibility of day-to-day activities".

Supply chain disruptions also affected organizations, with 43% selecting this as having the most impact on their business. This coincided with an increase in costs to provide services (32%), and was exacerbated by an increase in demand for Internet-related services for almost half of survey respondents (49%).

There were comments that "our business grew a lot due to being an Internet Service Provider, but due to rapid growth and supply chain issue our equipment was delayed and equipment capacities were throttled."

Despite the impacts of the pandemic, confidence in business continuity and growth in the future is high.

Over four in five (86%) survey participants have some level of confidence about the future of their businesses, with almost half reporting they are very confident about the future.

Respondents in Oceania are particularly bullish, with 90% either somewhat or very confident about the future. Those in East Asia (77%) are the least confident of the APNIC regions, with 16% having low or no confidence about business growth.

Perhaps unsurprisingly, Internet Service Providers are significantly more likely to be very confident about the future (53%) than other industry types.

Verbatim comments about the reasons for low levels of confidence reveal concerns about “political conflicts” or because “economic growth has slowed down”, although others simply said their confidence was lower “because the future is uncertain”.

Those more confident about business continuity and growth are buoyed by “overall demand of connectivity and service” and “the use of Internet is increased significantly ... people can do anything in online like attend classes, meeting, seminar etc...” providing “opportunities to grow our operation”.

With the proliferation of the Internet use during the pandemic, and demand for Internet-related services increasing, it is not surprising that the biggest strategic and operational challenges are workforce and skills shortages and Internet security.

Hiring and retaining skilled employees is the biggest strategic challenge for respondents in executive roles this year, with 15% ranking this as their most pressing issue, and almost two in five (38%) including it in their top three issues.

While not directly comparable to previous surveys because of the addition of three new options, hiring and keeping skilled staff was the fourth biggest strategic challenge in 2020, behind cost control, compliance with regulations and security risks affecting business.

Internet security risks (12% ranking this first, 34% ranking in the top three challenges) are also concerning to executives.

Two of the three new options included this year are the third and fourth most concerning issues. Ten percent (10%) of executives indicated that policymakers and regulators understanding of the Internet is a challenge, while 9% say that managing the unintended consequences of government regulations, both domestic and international, present problems for them. This rises to 27% and 26% when the top three challenges are considered.

It should be noted however, that there was a more even distribution in the ranking of the strategic challenges this year than in 2020. This may be because there were more issues to rank, or that COVID-19 has shifted executives focus and this should be monitored in future surveys.

Operationally, Internet security remains the biggest issue, with more respondents ranking this as their biggest challenge than in 2020 (30%, up from 23%). Large and corporate organizations (1,000-10,000 or over 10,000 employees) are significantly more likely to be concerned about Internet security than smaller organizations, with 34% and 36% respectively indicating Internet security is their biggest challenge.

Similarly, hardware and software vendors and IXPs (40%), enterprise businesses (41%) and those working in government or regulatory organizations (52%) are more concerned about security than those in other Internet-related industries.

Interviews conducted before the online survey, and verbatim comments, confirm that workforce and skills shortages and Internet security are top of mind for Members and Stakeholders. Comments that “having enough qualified technical staff to support the network” and a “shrinking pool of qualified engineering candidates to hire” are impacting organizations’ ability to “ensure uninterrupted customer service” and business continuity.

Similarly, “increasing cyber threats” and “maintaining continuous service delivery with the increase of ‘bad actors’ on the Internet” mean that “monitoring and Security are very high on the agenda” for organizations.

As in previous surveys, DDoS attacks and phishing, spam, malware and ransomware remain the biggest Internet security issues for over two in five respondents. And while Members and Stakeholders continue to call for APNIC to increase security-focused training courses (30%) and collaborate with others (28%) as a means of assisting with these issues, over one in five (21%) would like APNIC to maintain a security threat intelligence sharing service to help them monitor and act on cyber attacks.

Positively, IPv4 scarcity and deployment of IPv6 is not ranked as highly among the operational challenges facing APNIC Members and Stakeholders.

Only 7% of respondents ranked scarcity of IPv4 addresses as their top operational challenge this year, down from 13% in 2020.

Similarly, challenges with deployment of IPv6 in participant networks has fallen from 10% in 2020, to 5% this year.

When examined in more detail, the main challenge with the availability of IPv4 addresses is the cost of purchasing them, with three in ten selecting cost as an issue, up from 27% in 2020. However, in another indication that IPv6 deployment is becoming less of an issue, fewer respondents included implementation of IPv6 as an issue related to IPv4 scarcity than in 2020 (34% in 2020 compared to 28% this year).

Despite this, a lack of expertise and knowledge remains the biggest barrier to deployment of IPv6, with 45% of respondents citing scarcity of skills as the primary issue preventing more widespread deployment of IPv6 in the region.

Interestingly, fewer survey respondents (35%) say that a lack of demand from customers is preventing implementation of IPv6 in the region this year, down from 54% in 2020.

While provision of basic and advanced training remain the most important activity APNIC can offer to encourage deployment of IPv6 (29%), over a quarter of participants (26%) believe that promotion to hardware, software and content providers is important to encourage uptake of IPv6.

As part of its commitment to a global, open, stable and secure Internet that serves the Asia Pacific region, supporting and expanding Internet development activities in the region is also a core component of APNIC activities.

APNIC Members and Stakeholders were asked to rank what they considered to be the most important Internet development areas for the APNIC to invest in.

The two most important areas for APNIC Members are infrastructure investment (37%) and human resource capacity building (33%). These themes were also common in the Interviews conducted, with many mentioning that providing equal access to the Internet for all economies in the region would help to improve Internet stability and reliability and build capacity and knowledge.

The aspects of infrastructure development participants believe should be the main priority are investment in backbone networks, such as undersea or satellite to improve quality of access. Almost half of respondents who believe this is a priority (46%) support this, with a further 43% also saying that peering should be a priority.

Although there were no significant differences across Members or Stakeholders, or between the regions, significantly more ISPs (54%) indicated that peering was important to them.

To help build human resource capacity, nearly three in five (59%) support technical training for network engineers. Scholarships or internships at APNIC are also seen as important to 38% of participants, with South Asia respondents (46%) more likely to support this than those in East Asia (27%).

Over a third (35%) believe that fellowships supporting the next generation of Internet engineers should be the main priority for investment in human resource capacity building.

Conclusion

APNIC can be rightly proud of the 2022 survey results. In a difficult period marred by the COVID-19 pandemic and other global challenges, Members' and Stakeholders' satisfaction with the overall quality and value of APNIC services and membership has remained high, with ratings of 'excellent' significantly improving from the 2018 and 2020 surveys. These results are a testament to the focus of the APNIC Secretariat and EC on the needs of the region and Members during difficult times.

Despite this, it is clear that it has become increasingly difficult for Members and the wider Internet community to continue to provide quality services to their customers, and as a result, the requirements of Members of APNIC have become more complex, and often intertwined.

Although demand for Internet-related services has increased substantially during the COVID-19 pandemic for most Members, this resulted in difficulties maintaining quality of service because of capacity, bandwidth and access to reliable Internet. Transitioning to working from home was difficult for many, not only from managing staff, but also because access to reliable Internet in their economies was often problematic. For others, the collapse of hospitality, tourism and other industries meant reduced revenues, job losses and / or reduction of the workforce.

As the world emerges from COVID-19, other problems have surfaced. Rising inflation, increasing costs, continued supply chain problems and a critical lack of skilled resources are hampering business growth. In particular, the lack of skilled IT personnel, including network engineers and Internet security experts are concerning organization executives and operational employees. Cybersecurity concerns are also increasingly prevalent as a result of much greater use of the Internet from home.

Continued training, and development of more advanced training, remains the best way APNIC can assist the Internet community with these issues. If financial resources are available, Members want APNIC to expand training opportunities to the 'next generation' through technical training, collaboration with universities, scholarships, and internships, as well as continuing to provide in-person and online training.

Infrastructure development assistance is also important to Members and Stakeholders in the region. Support for backbone networks for smaller economies reliant on Internet access from others is encouraged, while peering and neutral IXPs would be welcomed by many.

As in previous APNIC Surveys, this survey continues to highlight the diversity in the needs and opinions across the Asia Pacific region. However, this diversity aside, APNIC is regarded highly by the vast majority of the Internet community, with many appreciating the work done through the APNIC Academy, the APNIC Foundation and other activities.

As always, the survey continues to elicit demand from survey participants for APNIC to support Members and other Stakeholders through training, knowledge building, collaboration and sharing of information, case studies and experiences.

Key Findings

1

Members' ratings of the quality and value of APNIC services and membership have improved

Fifty-four percent (54%) of Members rate the quality and value of APNIC services as excellent. This is a significant increase from previous years. Many more Members also rate the value of membership as excellent (51%). In a difficult two years, this is a significant achievement.

2

COVID-19 has had a significant impact on organizations, although confidence about the future is high

While demand for services increased for many, others experienced a reduced demand and loss of customers and revenue during COVID-19. Inability to conduct business and carry out service provision in-person hampered operations and managing staff working from home was also problematic. This was exacerbated by supply chain disruptions and increased costs of equipment.

However, most respondents (86%) are confident about business continuity and growth in the next two years.

3

Despite lower usage of almost all APNIC's services, satisfaction with these has been maintained

Except for training, usage of all other APNIC services has fallen, most likely because of the global response to the COVID-19 pandemic. However, satisfaction with the services used by Members and Stakeholders has largely been maintained from 2020 levels.



Key Findings

4

Lack of skilled Internet engineers and Internet security are the biggest challenges

In a shift from 2020, a lack of suitably skilled technical employees is the most concerning strategic challenge for organization executives. This is also evident from the 2022 Interviews, and frequently mentioned among verbatim comments in the survey.

Internet security is also an issue for both executives and operational staff, with concerns heightened by the proliferation of Internet use as a result of COVID-19.

5

Increased security-focused training courses, collaboration with others, and maintaining a security threat intelligence sharing service are the best ways APNIC can assist.

Training remains the most valuable way APNIC can assist with the challenges, with particular emphasis on DDoS prevention and security policy development favoured by respondents. Maintaining a security threat intelligence service, and collaboration with other technical security organizations are other activities the community believe APNIC can consider to assist them.

6

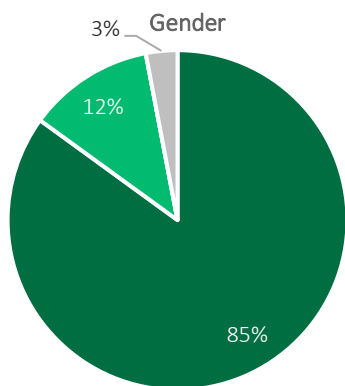
Investment in infrastructure and human resource capacity building are the priority areas for Internet development in the region.

Consistent with the current challenges facing the Internet community, Members' and Stakeholders' priority areas for Internet development are investment in backbone networks to improve access and quality, peering and neutral IXPs.

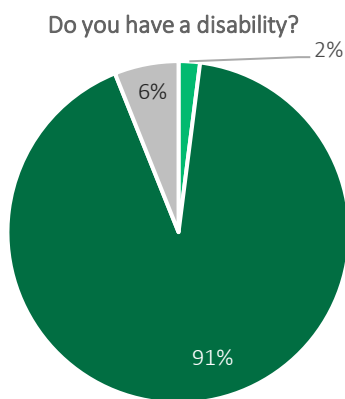
Technical training for network engineers, and internships or scholarships are the primary ways respondents think APNIC can invest to build human resource capability.



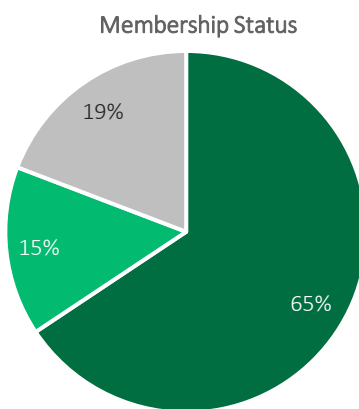
Sample



■ Male ■ Female ■ Other ■ Prefer not to say

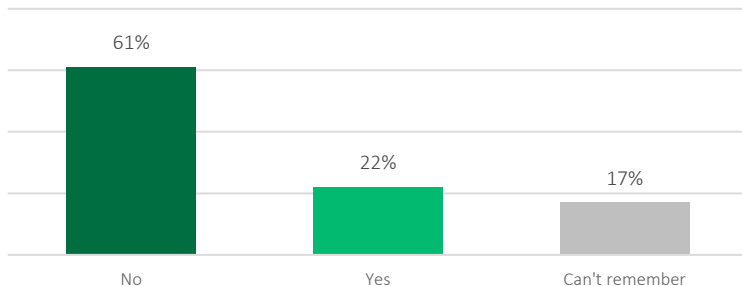


■ Yes ■ No ■ Prefer not to say

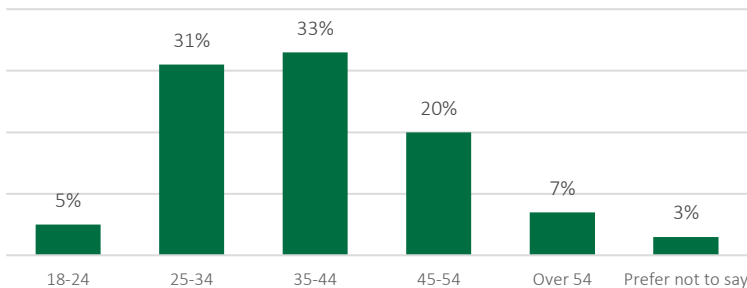


■ APNIC Member
 ■ Member of NIR in APNIC Region
 ■ Other Stakeholder

Have you completed the APNIC Survey in previous years?



What is your age?



English Proficiency	Count	%
I am fluent in English	735	45%
I can understand most English and have English conversations comfortably	482	30%
I can understand some English and have basic English conversations	315	19%
I understand little English and need assistance	91	6%

Region	Count	%
East Asia	269	17%
Oceania	275	17%
South East Asia	454	28%
South Asia	486	30%
Non-APNIC Region	137	8%

Development Status	Count	%
Least Developed Economy (LDEs)	395	24%
Other (Developed or Developing)	1,226	76%

			2018		2020		2022	
Code	Name	Economic Classification	Count	%	Count	%	Count	%
East Asia								
CN	China	Developing	107	9%	68	4%	58	4%
HK	Hong Kong Special Administrative Region of China	Developing	53	4%	25	2%	38	2%
JP	Japan	Developed	63	5%	50	3%	61	4%
KR	Republic of Korea	Developing	11	1%	10	1%	12	1%
MN	Mongolia	Developing	71	6%	50	3%	53	3%
MO	Macao Special Administrative Region of China	Developing	2	0%	6	0%	3	0%
TW	Taiwan	Developing	30	2%	46	3%	44	3%
Sub-total			337	27%	255	16%	269	17%
Oceania								
AS	American Samoa	Developing	1	0%	-	-	3	0%
AU	Australia	Developed	132	11%	136	8%	128	8%
CK	Cook Islands	Developing	1	0%	2	0%	2	0%
FJ	Fiji	Developing	10	1%	23	1%	26	2%
FM	Micronesia	Developing	-	-	-	-	-	-
GU	Guam	Developing	1	0%	6	0%	2	0%
KI	Kiribati	LDE	1	0%	2	0%	-	-
MH	Marshall Islands	Developing	1	0%	2	0%	-	-
MP	Northern Mariana Islands	Developing	-	-	-	-	-	-
NC	New Caledonia	Developing	6	0%	4	0%	3	0%
NF	Norfolk Island	Developing	2	0%	-	-	-	-
NR	Nauru	Developing	2	0%	1	0%	-	-
NU	Niue	Developing	1	0%	-	-	-	-
NZ	New Zealand	Developed	42	3%	58	4%	49	3%
PG	Papua New Guinea	Developing	10	1%	30	2%	30	2%
PW	Palau	Developing	1	0%	-	-	1	0%
SB	Solomon Islands	LDE	22	2%	6	0%	10	1%
TK	Tokelau	Developing	1	0%	-	-	-	-
TO	Tonga	Developing	7	1%	7	0%	10	1%
TV	Tuvalu	LDE	1	0%	1	0%	-	-
VU	Vanuatu	LDE	4	0%	5	0%	3	0%
WF	Wallis & Fortuna Islands	Developing	1	0%	-	-	-	-
WS	Samoa	Developing	4	0%	13	1%	8	0%
Sub-total			251	20%	296	17%	275	17%
South East Asia								
BN	Brunei Darussalam	Developing	3	0%	5	0%	3	0%
ID	Indonesia	Developing	51	4%	74	5%	85	5%
KH	Cambodia	LDE	18	1%	18	1%	31	2%
LA	Lao People's Democratic Republic	LDE	4	0%	4	0%	8	0%
MM	Myanmar	LDE	24	2%	111	7%	55	3%
MY	Malaysia	Developing	36	3%	35	2%	41	3%
PH	Philippines	Developing	48	4%	114	7%	118	7%
SG	Singapore	Developing	27	2%	20	1%	40	2%
TH	Thailand	Developing	41	3%	39	2%	42	3%
TL	Timor-Leste	LDE	2	0%	4	0%	9	1%
VN	Viet Nam	Developing	5	0%	15	1%	22	1%
Sub-total			259	21%	439	27%	454	28%

Code	Name	Economic Classification	2018		2020		2022	
			Count	%	Count	%	Count	%
South Asia								
AF	Afghanistan	LDE	8	1%	9	1%	13	1%
BD	Bangladesh	LDE	138	11%	298	18%	199	12%
BT	Bhutan	LDE	7	1%	19	1%	23	1%
IN	India	Developing	82	7%	109	7%	123	8%
IO	British Indian Ocean Territory	Developing	-	-	-	-	1	0%
LK	Sri Lanka	Developing	16	1%	28	2%	40	2%
MV	Maldives	Developing	4	0%	3	0%	5	0%
NP	Nepal	LDE	65	5%	60	4%	44	3%
PK	Pakistan	Developing	36	3%	36	2%	38	2%
Sub-total			356	29%	562	35%	486	30%
Non-APNIC Region								
	Aland Islands		-	-	-	-	1	0%
	Albania		-	-	-	-	1	0%
	Algeria		1	0%	1	0%	1	0%
	Argentina		-	-	-	-	2	0%
	Austria		-	-	-	-	1	0%
	Belgium		-	-	-	-	2	0%
	Benin		-	-	2	0%	2	0%
	Brazil		-	-	-	-	5	0%
	Cameroon		-	-	-	-	1	0%
	Canada		-	-	3	0%	14	1%
	Chile		-	-	-	-	1	0%
	Colombia		-	-	-	-	1	0%
	Croatia		-	-	1	0%	-	-
	Cyprus		-	-	-	-	1	0%
	Democratic Republic of Congo		-	-	2	0%	-	-
	Denmark		-	-	2	0%	1	0%
	Egypt		-	-	1	0%	-	-
	Ecuador		-	-	-	-	2	0%
	Estonia		-	-	-	-	1	0%
	Ethiopia		-	-	1	0%	-	-
	France		-	-	1	0%	1	0%
	Finland		-	-	-	-	1	0%
	Georgia		-	-	-	-	1	0%
	Germany		1	0%	6	0%	2	0%
	Ghana		-	-	-	-	2	0%
	Greece		-	-	-	-	1	0%
	Haiti		-	-	1	0%	-	-
	Iran		-	-	-	-	2	0%
	Ireland		-	-	1	0%	-	-
	Israel		2	0%	1	0%	-	-
	Italy		1	0%	1	0%	4	0%
	Kenya		-	-	-	-	3	0%
	Kyrgyzstan		-	-	-	-	1	0%

* 2018 response subtotal for Non-APNIC Region includes responses from economies not listed as no responses were received in 2020 or 2022

			2018		2020		2022	
Code	Name	Economic Classification	Count	%	Count	%	Count	%
Non-APNIC Region (cont.)								
	Madagascar		-	-	-	-	1	0%
	Malawi		-	-	-	-	1	0%
	Mexico		-	-	3	0%	2	0%
	Morocco		-	-	-	-	1	0%
	Netherlands		2	0%	3	0%	5	0%
	Nicaragua		-	-	1	0%	-	-
	Niger		-	-	1	0%	-	-
	Nigeria		1	0%	1	0%	2	0%
	Oman		-	-	1	0%	-	-
	Panama		-	-	1	0%	-	-
	Poland		-	-	1	0%	1	0%
	Qatar		-	-	-	-	1	0%
	Romania		-	-	-	-	1	0%
	Russian Federation		-	-	-	-	2	0%
	Saudi Arabia		-	-	2	0%	2	0%
	Slovakia		-	-	-	-	1	0%
	Slovenia		1	0%	1	0%	-	-
	Spain		-	-	-	-	4	0%
	South Africa		-	-	-	-	1	0%
	Sweden		-	-	1	0%	1	0%
	Switzerland		-	-	-	-	1	0%
	Trinidad and Tobago		-	-	-	-	1	0%
	Uganda		-	-	-	-	1	0%
	United Arab Emirates		-	-	1	0%	1	0%
	United Kingdom		-	-	3	0%	4	0%
	United States of America		22	2%	26	2%	46	3%
	Zambia		-	-	1	0%	2	0%
Subtotal			*38	*3%	73	4%	137	8%
Total			1,241	100%	1,624	100%	1,621	100%

* 2018 response subtotal for Non-APNIC Region includes responses from economies not listed as no responses were received in 2020 or 2022

	2018	2020	2022
Language			
Bangladesh (Bengali)	41	157	53
Chinese Simplified	101	75	73
Chinese Traditional	56	59	54
Indonesian	43	62	74
Indian (Hindi)	-	3	-
Japanese	60	45	55
Korean	9	8	14
Mongolian	49	39	38
Malaysian	-	4	-
Myanmar (Burmese)	-	52	22
Nepali	-	10	-
Philippines (Tagalog)	-	7	-
Thai	30	29	38
Urdu	-	4	-
Vietnamese	-	14	20
Total	389	568	441

	2018	2020	2022
Organization Type			
Sample Size	1,241	1,624	1,622
Internet Service Provider (ISP)	34%	34%	28%
Academic/Educational/Research	11%	15%	17%
Telecommunications / Mobile Operator	13%	11%	11%
Other	7%	7%	7%
Government/Regulator/Municipality	6%	6%	7%
Hosting / Data Centre	7%	5%	6%
Banking/Financial	5%	4%	5%
Enterprise/Manufacturing/Retail	3%	4%	5%
Non-profit/NGO/Internet community	4%	3%	4%
Software Vendor	3%	3%	4%
Media / Entertainment	2%	2%	1%
Domain Name Registry / Registrar	1%	1%	1%
NREN/Research network	1%	1%	1%
Infrastructure (transport/hospital)	1%	1%	1%
Internet Exchange Point (IXP)	1%	1%	1%
Hardware Vendor	1%	1%	1%
Industrial (construction, mining, oil)	1%	1%	1%

	2020	2022
Position		
Sample Size	1,624	1,622
Network/Systems Operations Engineer/Manager	39%	35%
Network/Systems Planning Engineer/Manager	26%	28%
IT Support	16%	19%
Manager	13%	14%
Academic/Research	11%	10%
CEO/COO/CFO	9%	9%
CTO/CIO	8%	8%
Product/Peering/Interconnect Engineer/Manager	6%	8%
Project Manager	5%	6%
Trainer	4%	5%
Software Engineer	3%	4%
Sales / Marketing	2%	3%
Student	5%	3%
Applications Developer	2%	2%
Other	4%	7%

Detailed Results



Service Usage & Satisfaction



The first section of the survey asked respondents to indicate how often they had interacted with APNIC over the last two years, which services they had used and activities they had been involved with and how satisfied they were with each of the APNIC products, services and activities they had experienced.

After rating their experience using individual APNIC services, respondents were also asked to rate the overall quality and value of APNIC services and membership.

The last questions in the section of the survey asked about APNIC governance practices, and the propensity of Members and Stakeholders to speak well of APNIC to others in the Internet community.

APNIC Contact Frequency

In the 2022 survey, 71% of respondents indicated they had used APNIC services, or interacted with APNIC, over the past two years. This was consistent with 71% in 2020, and compares with 67% in 2018. The proportion of respondents having no contact with APNIC declined to 14% in 2022, down from 15% in 2020, and 21% in 2018.

At 80%, APNIC Members were more likely to have used APNIC services or contacted APNIC for support over the past two years than APNIC Stakeholders (55%). These figures compare with 79% and 54%, respectively, in 2020.

Member engagement has remained consistent since 2020. For APNIC Members, 46% stated they had interacted with APNIC between one and five times over the past two years, with 34% having more than five interactions. These figures were similar in 2020, at 45% and 34%, respectively.

In contrast, only 33% of APNIC Stakeholders had between one and five interactions with APNIC, with around one in five (22%) having more than five interactions. In 2020, these figures were 37% and 17%, respectively.

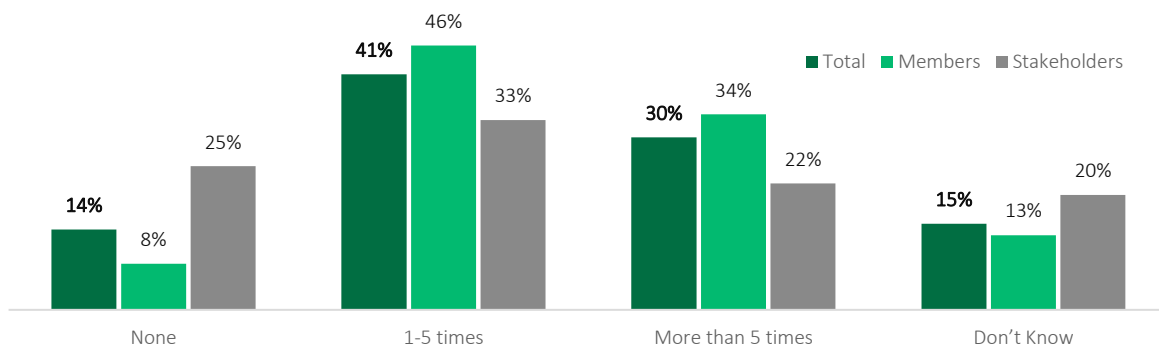
By region, respondents from Oceania were more likely to have interacted with APNIC over the past two years than those in other regions, at 81% (84% in 2020). Only 8% of respondents in Oceania had no contact with APNIC.

Respondents from South East Asia and South Asia were less likely to have engaged with APNIC over the past two years, at 69% and 66%, respectively. These regions had a higher proportion of those with no interaction with APNIC, at 13% each.

Respondents from least developed economies (LDEs) were less likely to have interacted with APNIC over the past two years, at 65%. This compares with 74% of respondents from developed or developing economies (Others).

How many times have you used an APNIC service, contacted or interacted with APNIC in the last 2 years?

(All respondents: n=1,622)



	2018	2020	2022	East Asia	Oceania	SE Asia	South Asia	LDEs	Others
Sample size	1,241	1,624	1,622	269	275	454	486	395	1,089
None	21%	15%	14%	19%	8%	13%	13%	12%	14%
1-5 times	43%	42%	41%	42%	49%	41%	37%	39%	43%
More than 5 times	24%	29%	30%	32%	32%	28%	29%	27%	31%
Don't Know	12%	14%	15%	7%	10%	17%	22%	23%	13%

'Other' segment includes developed and developing economies in the APNIC Region

Significantly higher / lower than total

APNIC Service Usage

Survey participants were asked which APNIC products, services or initiatives they used, participated in or accessed over the past two years. Depending on the APNIC product, service or initiative, most response options were offered to both APNIC Members and APNIC Stakeholders, while some options were only offered to APNIC Members. Only one service option was solely offered to APNIC Stakeholders.

Use of almost all APNIC services was lower in 2022 than in 2020.

As with previous survey results, MyAPNIC was the most used APNIC service, with about three in five Members (61%) using this service over the past two years. This figure was, however, down from 69% in 2020. Further, almost three-quarters (73%) of Members in Oceania indicated they used MyAPNIC, compared with 62% in South Asia, 59% in East Asia, and 55% in South East Asia. By economic classification, 61% of Members in LDEs used MyAPNIC services, compared with 63% in Other economies.

More than half of respondents (52%) visited the APNIC website in 2022, with this proportion consistent across Members and Stakeholders, as well across LDEs and Other economies. Respondents in South Asia were significantly more likely to use the APNIC website, at

58%, while those in South East Asia were less likely, at 46%.

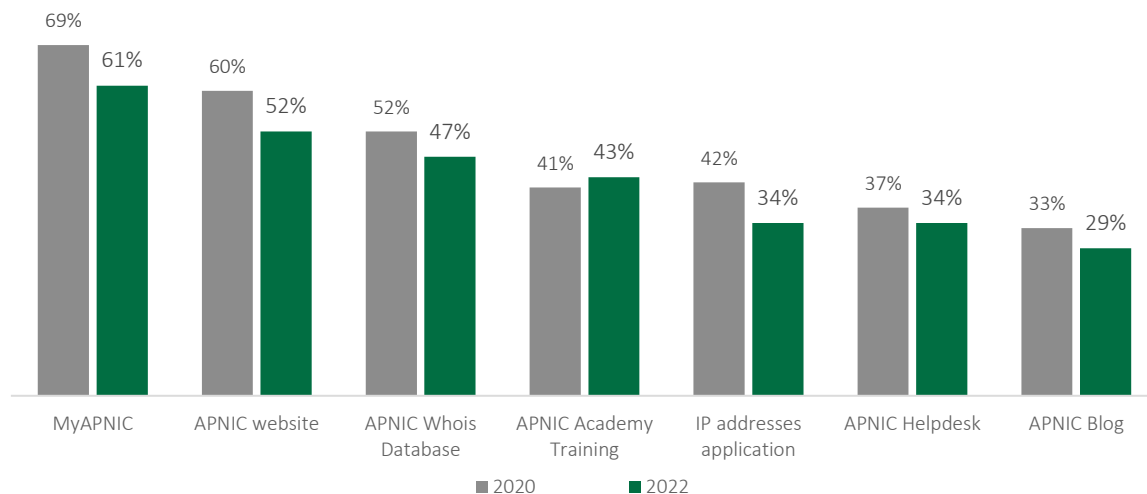
Almost half (47%) of respondents used the whois database over the prior two years, down from 52% in 2020. Those in LDEs were less likely to use the Whois database, at 40%, compared with 51% in Other economies. Further, respondents in Oceania and East Asia were significantly likely to use this resource, at 57% and 55%, respectively. In contrast, respondents in South East Asia were less likely to use the whois database, at 40%.

APNIC training services were used by 43% of respondents over the past two years, compared with 41% in 2020. Stakeholders were significantly more likely to use these services, at 54%, while Members were significantly less likely, at 38%. Further, respondents in South East Asia were more likely to undertake APNIC training, at 49%, while those in East Asia were less likely, at 26%. Percentages were consistent across both LDEs and Other economies, at 43%.

Most Used APNIC Services

Over the last two years, which of the following APNIC products, services or initiatives have you used, participated in or accessed:

(Base n=1,403)



APNIC Services used by respondents over the last 2 years.

(Have used, interacted or contacted APNIC in the last 2 years: Base n=1,405)

	2018			2020			2022			Change 2020-2022
	Total	Members	Stakeholder	Total	Member	Stakeholder	Total	Member	Stakeholder	
Sample Size	1,241	905	336	1,378	1,007	372	1,403	980	423	
* MyAPNIC	62%	62%	-	69%	69%	-	61%	61%	-	-8%
APNIC website	76%	77%	70%	60%	56%	70%	52%	52%	52%	-8%
APNIC Whois Database	56%	56%	54%	52%	55%	44%	47%	49%	43%	-5%
APNIC training (face-to-face or online)	27%	26%	32%	41%	39%	45%	43%	38%	54%	2%
* APNIC Helpdesk	38%	38%	-	37%	37%	-	34%	34%	-	-3%
* IP address / AS number resource application	41%	41%	-	42%	42%	-	34%	34%	-	-8%
APNIC Blog	44%	43%	48%	33%	31%	37%	29%	27%	32%	-4%
* Routing security (ROA publication)	NA	NA	NA	NA	NA	NA	24%	24%	-	NA
* Resource certification (RPKI)	10%	10%	-	27%	27%	-	23%	23%	-	-4%
APNIC conference, APRICOT /other event	25%	24%	30%	27%	24%	34%	23%	20%	29%	-4%
* New membership account	45%	45%	-	25%	25%	-	21%	21%	-	-4%
*APNIC EC Election	NA	NA	NA	20%	20%	-	16%	16%	-	-4%
* IPv4 address transfer	13%	13%	-	16%	16%	-	15%	15%	-	-1%
* APNIC reverse DNS	20%	20%	-	18%	18%	-	15%	15%	-	-3%
Online presentation by APNIC	18%	16%	23%	16%	12%	25%	12%	11%	14%	-4%
APNIC Labs reports/measurement statistics	NA	NA	NA	NA	NA	NA	12%	10%	15%	NA
** Contacted APNIC with a query	16%	-	16%	13%	-	13%	10%	-	10%	-3%
Online meeting with APNIC representative	21%	21%	23%	22%	19%	28%	10%	8%	15%	-12%
Special Interest Group (SIGs)	9%	7%	14%	8%	6%	13%	7%	5%	12%	-1%
*APNIC Annual Report	NA	NA	NA	10%	10%	-	7%	7%	-	-3%
DASH (Dashboard for AS Health)	NA	NA	NA	NA	NA	NA	6%	8%	3%	NA
APNIC Policy Development Process	6%	5%	9%	6%	5%	9%	6%	4%	9%	0%
APNIC NetOX	NA	NA	NA	2%	2%	2%	6%	6%	4%	4%
PING Podcast	NA	NA	NA	NA	NA	NA	4%	3%	5%	NA
*APNIC RDAP service	NA	NA	NA	4%	4%	-	4%	4%	-	0%
REx (Resource Explorer)	NA	NA	NA	NA	NA	NA	2%	2%	1%	NA
None of these	3%	1%	7%	2%	1%	5%	4%	3%	5%	2%

* Option not offered to Stakeholder respondents
 ** Option not offered to Member respondents

Significantly higher / lower than total

APNIC services used by respondents over the last 2 years by classification and region for 2022.

(% have used, interacted or contacted APNIC in the last 2 years: Base N=1,405; n-various)

(See previous page for breakdown by relationship with APNIC)

	Total	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample size	1,403	218	252	393	425	348	940
* MyAPNIC	61%	59%	73%	55%	62%	61%	63%
APNIC website	52%	53%	55%	46%	58%	53%	53%
APNIC Whois Database	47%	55%	57%	40%	45%	40%	51%
APNIC training (face-to-face or online)	43%	26%	42%	49%	47%	43%	43%
* APNIC Helpdesk	34%	34%	37%	28%	42%	38%	34%
* IP address or AS number resource application	34%	32%	35%	28%	43%	41%	33%
APNIC Blog	29%	26%	30%	21%	35%	27%	29%
* Routing security (ROA publication)	24%	24%	29%	16%	30%	27%	24%
* Resource certification (RPKI)	23%	18%	29%	16%	28%	25%	22%
APNIC conference, APRICOT or another event	23%	28%	25%	20%	23%	21%	24%
* New membership application	21%	19%	22%	19%	24%	26%	19%
*APNIC EC Election	16%	14%	7%	8%	30%	29%	11%
* IPv4 address transfer (as source or recipient)	15%	19%	18%	11%	17%	14%	17%
* APNIC reverse DNS	15%	19%	19%	8%	17%	14%	16%
Online presentation by APNIC representative	12%	6%	17%	9%	14%	11%	12%
APNIC Labs reports and/or measurement statistics	12%	14%	9%	10%	11%	10%	11%
** Contacted APNIC with a query	10%	7%	11%	8%	13%	3%	12%
Online meeting with APNIC representative	10%	11%	11%	9%	11%	7%	12%
Special Interest Group (SIGs)	7%	8%	9%	4%	9%	5%	8%
*APNIC Annual Report	7%	10%	6%	3%	8%	8%	6%
DASH (Dashboard for AS Health)	6%	4%	8%	7%	8%	7%	6%
APNIC Policy Development Process	6%	7%	4%	4%	8%	6%	6%
APNIC NetOX	6%	5%	5%	5%	7%	5%	5%
PING Podcast	4%	5%	4%	1%	5%	3%	3%
*APNIC RDAP service	4%	5%	3%	2%	3%	1%	4%
REx (Resource Explorer)	2%	0%	2%	2%	2%	2%	1%
None of these	4%	4%	2%	5%	3%	4%	3%

* Option not offered to Stakeholder respondents

** Option not offered to Member respondents

Significantly higher / lower than total

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Assessment of APNIC Services

Survey respondents were next asked to assess their level of satisfaction with the APNIC services they have used over the last two years, using a seven-point scale ranging from very poor (1) to excellent (7). The results show the proportion of respondents rating APNIC services as a 5, 6 or 7, as well as the mean, or average, score. As several new service options were asked about in the 2022 survey, these were not able to be compared with previous years.

Overall, satisfaction with individual APNIC services was high in 2022, with about half showing improvements or being consistent with 2020 using the Top 3 Satisfaction Scores, and the other half being lower.

Respondent satisfaction was highest with APNIC Academy training, with 97% rating this as positive in 2022 (including 53% that stated it was excellent), consistent with 2020. These high ratings were relatively consistent across geographic region and economy type, while the mean score increased to 6.40 in 2022, from 6.38 in 2020.

Satisfaction with resource certification (RPKI) was second-highest at 96% in 2022, compared with 94% in 2020. In South East Asia, satisfaction was at 99% in 2022. Satisfaction was also 99% in LDEs. Further, the mean score for resource certification (RPKI) in 2022 was 6.28, up from 6.26 in 2020.

As a new survey option in 2022, satisfaction with routing security (ROA publication) had the third-highest satisfaction score, at 95%, and a mean score of 6.32. Satisfaction was 98% in South East Asia, and 97% in South Asia. Other new survey options in 2022 that scored highly were DASH (Dashboard for AS Health), at 94%, the PING Podcast (94%), and APNIC Lab reports and/or measurement statistics (94%).

Online presentations by APNIC representatives scored highly, with 95% satisfaction overall, and 100% in South East Asia. Satisfaction was also high for APNIC conferences, at 95%.

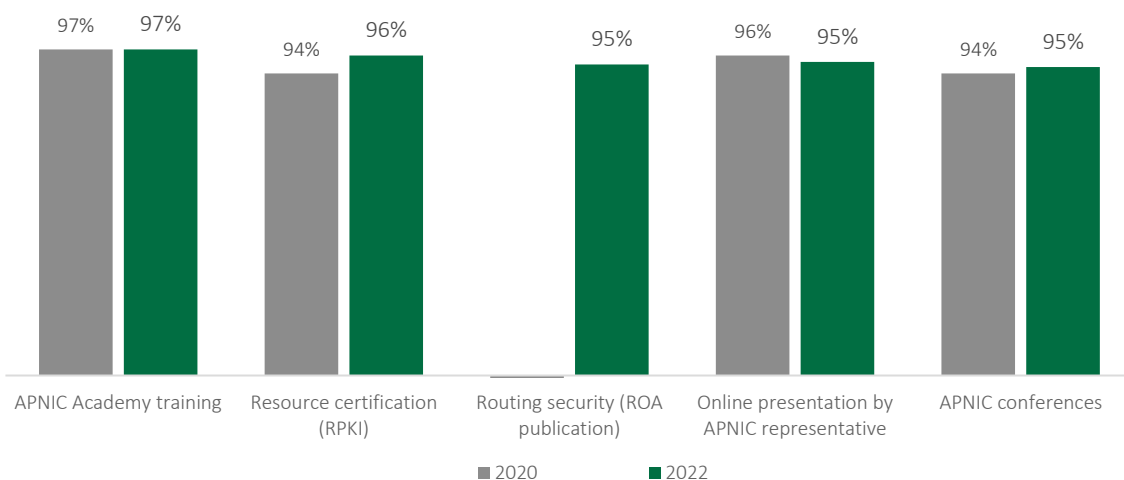
By region, satisfaction was significantly higher in South Asia for the APNIC Whois Database (99%), MyAPNIC (98%), and IP address or AS number resource applications (96%).

In contrast, satisfaction was significantly lower in East Asia with the APNIC Whois Database (83%), and in Oceania with IPv4 address transfers (69%).

Top Rated APNIC Services

Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?

(Have Used APNIC Service. Top 3 Box Score Base n=1,405, n=various)



Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?
 (Have Used APNIC Service. Top 3 Box Score (% Above Average, Good, Excellent) (Base n= 1, 405, n=various)

	Top 3 Box Satisfaction Scores				Mean Scores			
	2018	2020	2022	Change 2020-2022	2018	2020	2022	Change 2020-2022
APNIC training (face-to-face or online)	94%	97%	97%	0%	6.18	6.38	6.40	0.02
*Resource certification (RPKI)	89%	94%	96%	2%	5.94	6.26	6.28	0.02
* Routing security (ROA publication)	NA	NA	95%	NA	NA	NA	6.32	NA
Presentation by APNIC representative (online)	97%	96%	95%	-1%	6.31	6.37	6.30	-0.07
APNIC conference, APRICOT or other APNIC event	98%	94%	95%	1%	6.35	6.33	6.29	-0.04
DASH (Dashboard for AS Health)	NA	NA	94%	NA	NA	NA	6.18	NA
PING Podcast	NA	NA	94%	NA	NA	NA	6.15	NA
APNIC Blog	90%	93%	94%	1%	5.98	6.16	6.16	0.00
APNIC Lab reports and/or measurement statistics	NA	NA	94%	NA	NA	NA	6.15	NA
APNIC Policy Development Process	95%	92%	94%	2%	6.13	5.98	6.16	0.18
Met with an APNIC representative (online)	97%	97%	94%	-3%	6.43	6.51	6.25	-0.26
APNIC Whois Database	91%	93%	93%	0%	6.06	6.16	6.17	0.01
*APNIC Helpdesk	93%	95%	93%	-2%	6.16	6.33	6.18	-0.15
APNIC website	90%	93%	93%	0%	5.92	6.16	6.08	-0.08
*MyAPNIC	92%	93%	93%	0%	6.06	6.14	6.15	0.01
*APNICs EC Election	NA	89%	91%	2%	NA	6.03	6.14	0.11
*IP address or AS number resource application	90%	89%	89%	0%	6.05	6.12	6.07	-0.05
APNIC NetOX	NA	93%	89%	-4%	NA	6.21	6.06	-0.15
Special Interest Groups (SIGs)	97%	94%	88%	-6%	6.06	6.05	6.00	-0.05
* IPv4 address transfer (as source or recipient)	86%	92%	88%	-4%	5.78	6.04	5.93	-0.11
*New membership application	NA	NA	87%	NA	NA	NA	6.02	NA
* APNIC reverse DNS service (as an address holder)	91%	93%	87%	-6%	6.03	6.13	6.09	-0.04
*APNIC RDAP service	NA	86%	86%	0%	NA	6.08	5.75	-0.33
* APNIC Annual Report	NA	87%	86%	-1%	NA	6.04	5.84	-0.20
** Contact with APNIC	90%	94%	83%	-11%	6.26	6.31	6.00	-0.31
REx (Resource Explorer)	NA	NA	76%	NA	NA	NA	5.84	NA

Thinking about the APNIC services and activities you have used or undertaken, how would you rate your experience?

(Have Used APNIC Service. Top 3 Box Score (% Above Average, Good, Excellent) (Base n= 1,405, n=various)

	Total	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
APNIC training (face-to-face or online)	97%	98%	96%	96%	97%	98%	96%
*Resource certification (RPKI)	96%	89%	93%	98%	99%	99%	94%
* Routing security (ROA publication)	95%	89%	95%	98%	97%	96%	95%
Presentation by APNIC representative (online)	95%	92%	95%	100%	97%	95%	97%
APNIC conference, APRICOT or another APNIC event	95%	90%	95%	99%	94%	95%	95%
DASH (Dashboard for AS Health)	94%	WH	100%	93%	94%	92%	97%
PING Podcast	94%	WH	WH	WH	90%	92%	94%
APNIC Blog	94%	95%	93%	94%	94%	91%	95%
APNIC Lab reports and/or measurement statistics	94%	93%	95%	95%	90%	88%	94%
APNIC Policy Development Process	94%	100%	91%	93%	94%	85%	98%
Met with an APNIC representative (online)	94%	92%	93%	97%	93%	92%	95%
APNIC Whois Database	93%	83%	92%	95%	99%	99%	92%
*APNIC Helpdesk	93%	92%	92%	91%	95%	96%	91%
APNIC website	93%	88%	91%	93%	96%	91%	93%
*MyAPNIC	93%	89%	90%	91%	98%	96%	91%
*APNICs EC Election	91%	86%	WH	100%	92%	94%	87%
*IP address or AS number resource application	89%	85%	79%	86%	96%	91%	88%
APNIC NetOX	89%	WH	92%	100%	83%	84%	92%
Special Interest Groups (SIGs)	88%	WH	78%	100%	95%	89%	90%
*IPv4 address transfer (as source or recipient)	88%	93%	69%	90%	96%	92%	86%
*New membership application	87%	79%	76%	90%	93%	95%	82%
APNIC reverse DNS service (as an address holder)	87%	83%	84%	86%	94%	89%	88%
*APNIC RDAP service	86%	WH	WH	WH	WH	WH	96%
*APNIC Annual Report	86%	100%	83%	WH	91%	86%	94%
**Contact with APNIC	83%	WH	WH	WH	WH	WH	83%
REx (Resource Explorer)	76%	WH	WH	WH	WH	57%	100%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total
WH = Withheld, sample less than 10

There were only 32 comments from those who had rated their experience very poor, poor or somewhat poor, and only a few suggestions to improve. However, there were several mentions that the “APNIC Members portal is hard to use and non-intuitive” and that “the portal is very hard to work through. Documentation isn't easy to understand for first time users. Not very user friendly to use.” Others commented that “APNIC resource administration is quite cumbersome compared to other RIRs (RIPE, ARIN)”.

Overall Satisfaction

As well as satisfaction with individual services, APNIC Members were asked to rate the overall quality and value of APNIC services and membership. Ratings were provided on a seven point scale from very poor (1) to excellent (7), with results showing the percentage of respondents rating service quality, service value, and membership value as a 5, 6 or 7.

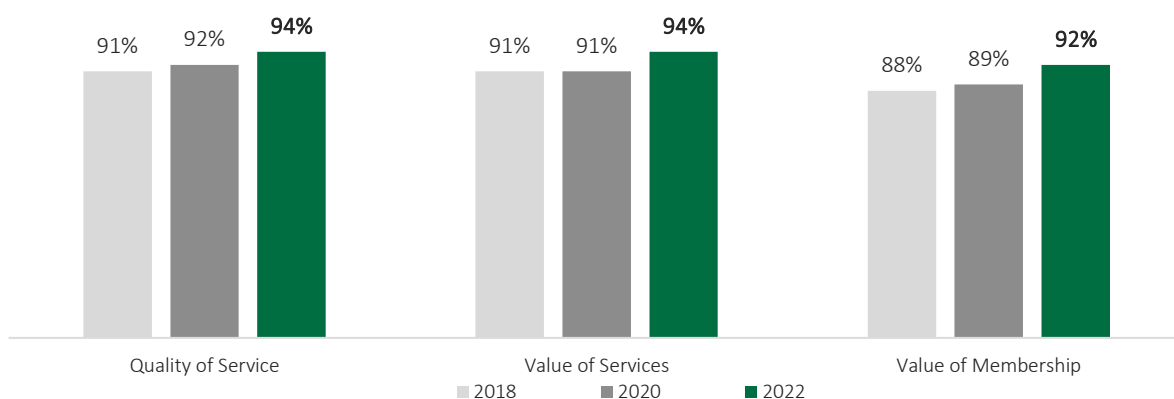
Positively, overall satisfaction ratings for service quality, service value and membership value all increased. In particular, while not evident in the top three satisfaction scores, the proportion of Members rating all three as excellent improved significantly.

As in previous years, APNIC Members rated quality of service very highly in 2022, at 94%. Further, 54% of Members rated service quality as excellent, up from 39% in 2020. Further, Members in South Asia were significantly more likely to rate service quality highly, at 98%, compared with Oceania at 92%.

Members also rated APNIC’s value of services very highly, at 94% in 2022. The proportion of those stating service value was excellent increased to 54% in 2022, up from 40% in 2020. Again, Members in South Asia were significantly more likely to rate service value highly, at 98%, while Members in Oceania were significantly more likely to rate this lower, at 88%.

More than nine out of 10 (92%) Members rated membership value as high, including over half (51%) who indicated they believe membership provides excellent value. This included 95% of Members in LDEs rating membership value highly, compared with 90% in Other economies. As with other satisfaction measures, Members in South Asia were significantly more likely to rate membership value highly, at 97%. Members in Oceania were significantly less likely to rate value of membership highly, at 83%.

Thinking about APNIC overall, how would you rate:
(Members only: n=980)



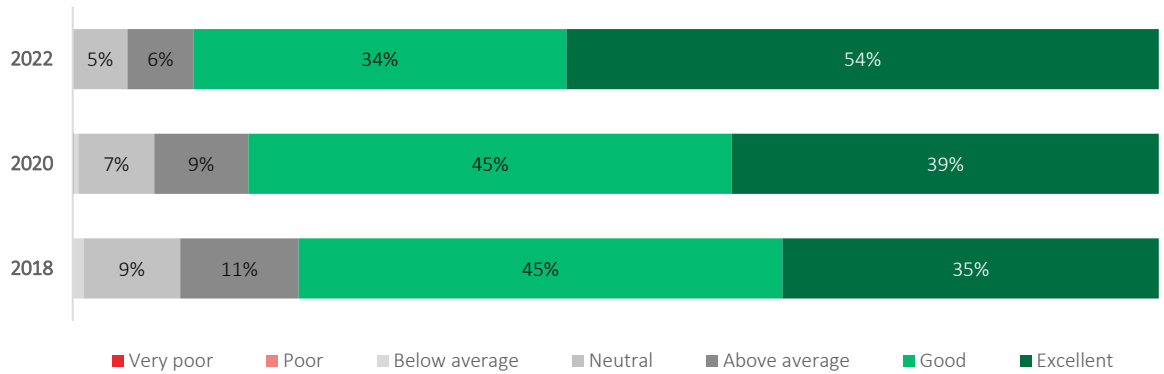
	Total	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	926	138	182	254	295	270	599
Quality of Service	94%	93%	92%	93%	98%	94%	94%
Value of Services	94%	91%	88%	94%	98%	96%	93%
Value of membership	92%	89%	83%	93%	97%	95%	90%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region; 'Don't know' responses have been excluded

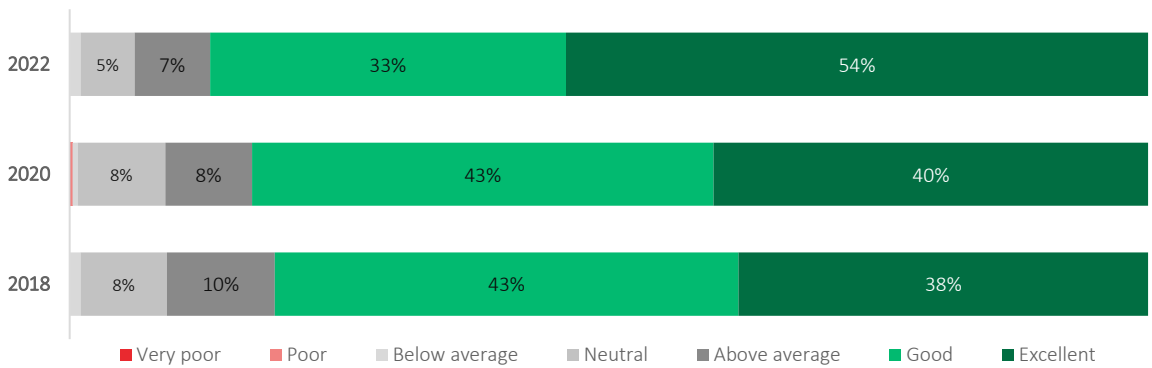
Significantly higher / lower than total

Thinking about APNIC overall, how would you rate:
 (Members only: n=942, excludes Don't know responses)

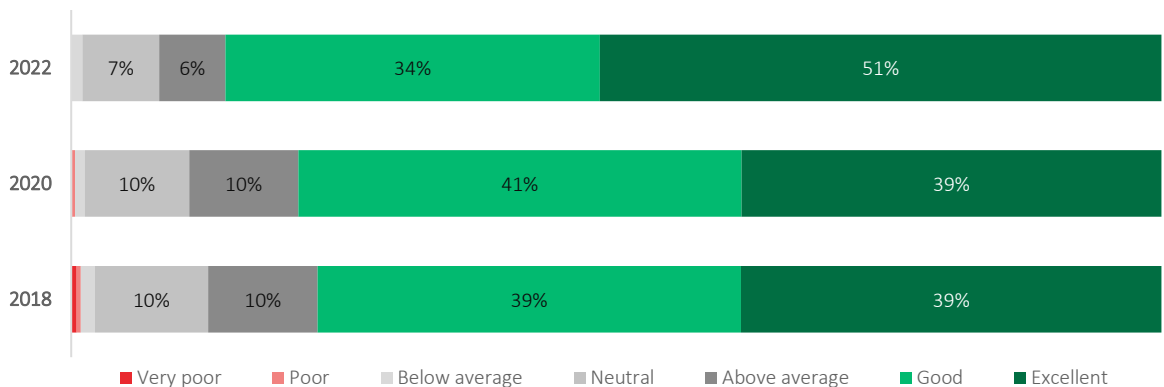
Quality of Services



Value of Services



Value of membership



By region, APNIC Members in South Asia had the highest levels of satisfaction for each of service quality, service value, and membership value. Members in this region were also significantly more likely to rate each of these as excellent. Satisfaction was lowest in East Asia, with a lower percentage of Members in this region rating the provision of APNIC services as excellent.

In 2022, 98% of Members in South Asia rated the quality of services provided by APNIC positively, including 64% that indicated that service quality is excellent. In comparison, 93% of Members in East Asia positively rated service quality, including 42% indicating service quality is excellent.

At 98%, a significantly higher proportion of Members in South Asia also rated the value of APNIC services highly, including 67% rating the value as excellent. This compares with 88% of Members in Oceania rating service value positively.

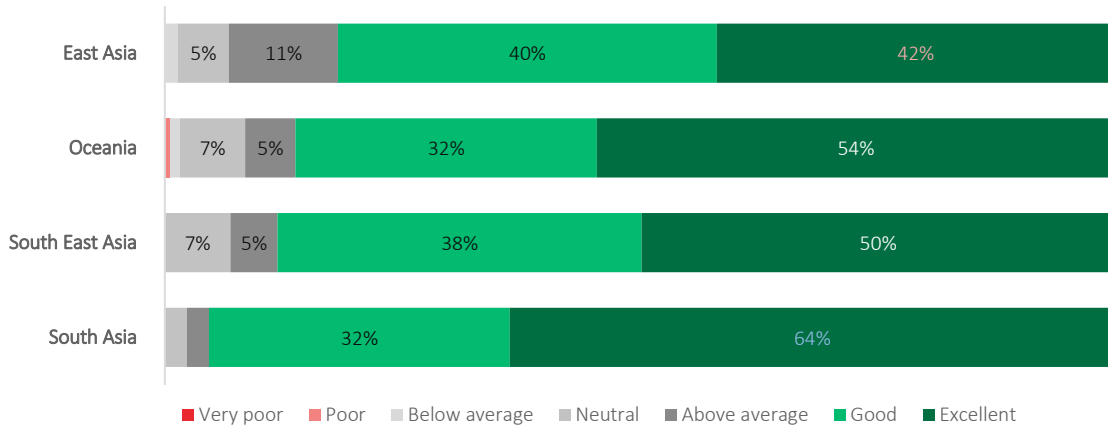
South Asia Members also rated the value of membership more positively than Members in other regions, at 97%, including 64% saying the value of membership is excellent. A significantly lower proportion of Oceania Members positively rated APNIC's membership value, at 83%.



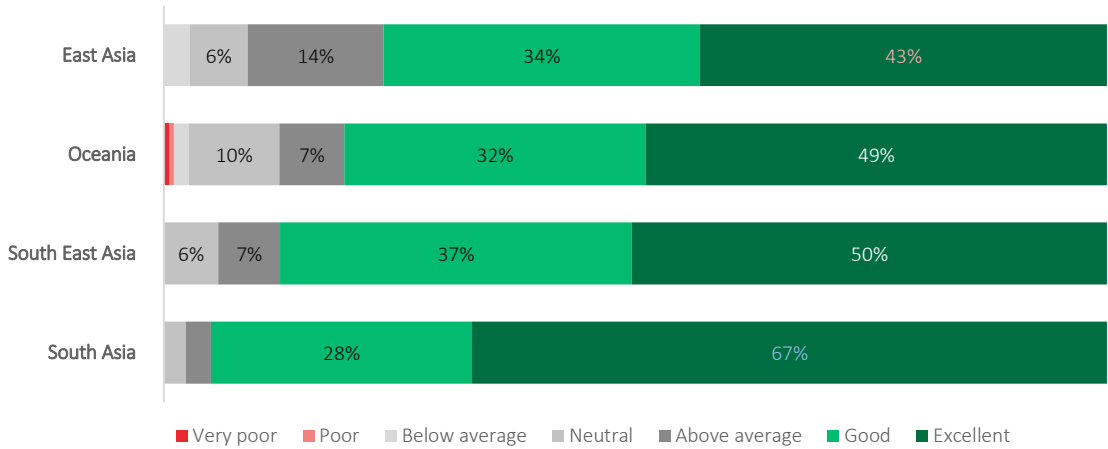
“APNIC Virtual Labs have been extremely useful for our organization. Having more such labs would be highly useful. Moreover, allowing multiple people to access one common lab (maybe by spinning off a new container / VM for every user) would also help. Thank you!”

South Asia

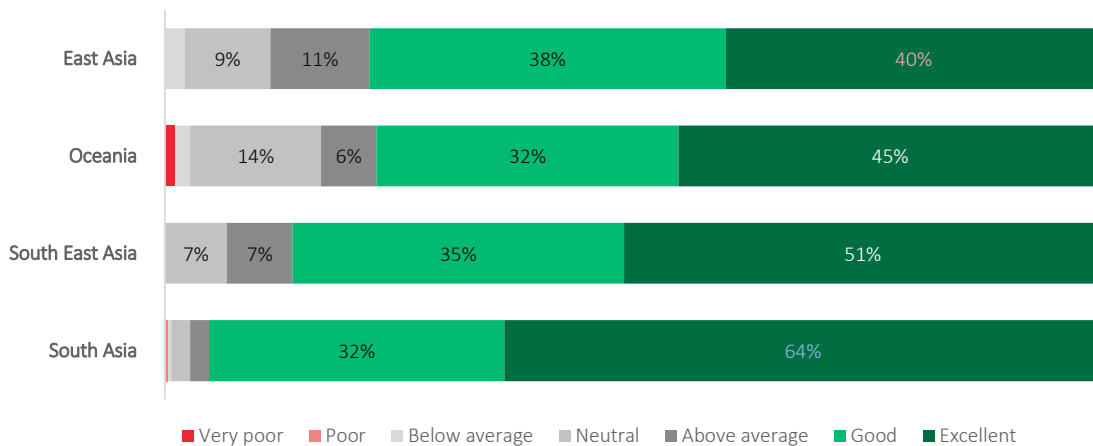
Quality of Service Delivery



Value of Services



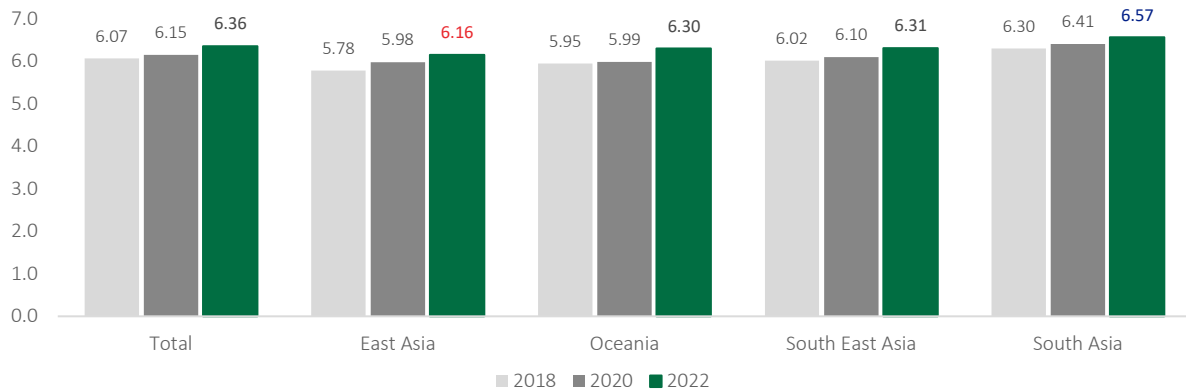
Value of membership



Respondents' ratings of the quality and value of APNIC services and membership, by region 2022. (Members who have used APNIC services only: n=980)

Service Quality

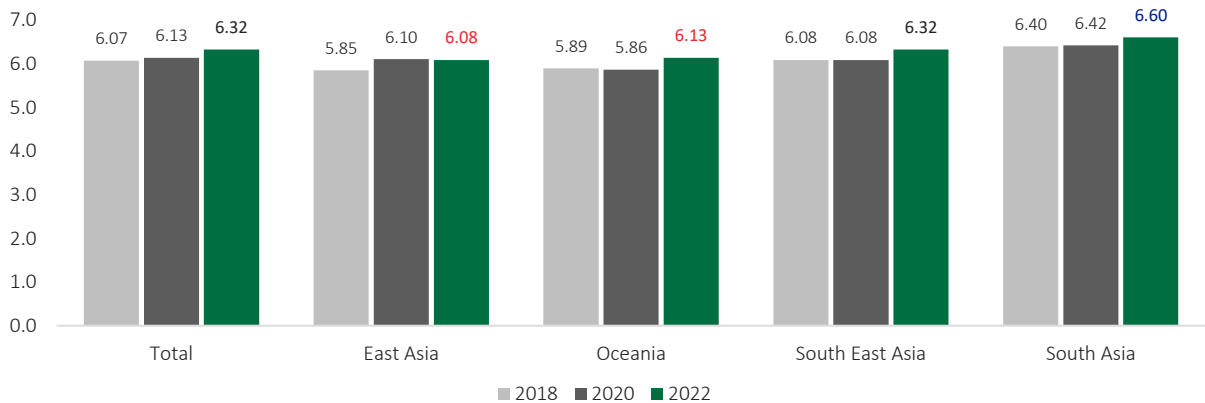
In 2022, the mean rating of service quality by APNIC Members increased to 6.36, up from 6.15 in 2020. Higher average ratings were provided across each region, continuing the growth trend from 2020. The highest service quality rating was from Members in South Asia, while the largest rise was seen in Oceania, up from 5.99 in 2020 to 6.30 in 2022, a rise of 0.31.



Service Value

Member satisfaction with the value of APNIC services also improved in 2022, to 6.32. This was up from 6.13 in 2020, and continued the growth trend from 2018. Member satisfaction with service value was highest in South Asia, at 6.60 in 2022, up from 6.42 in 2020. As with service quality, the strongest growth in service value was from Oceania, up 0.27 to 6.13 in 2022.

There was, however, a small decline in Member satisfaction for service value in East Asia. This dipped slightly to 6.08 in 2022, from 6.10 in 2020.



Respondents ratings of the quality and value of APNIC services, 2018 to 2022

(Mean scores of Members who have used APNIC services only: 2018: n=788, 2020: n=1,119, 2022: n=953)

Stakeholder Satisfaction

Members of NIRs or other Stakeholders were also asked to rate their experience dealing with APNIC. Ratings were provided on a seven point scale, from very poor (1) to excellent (7).

Positively, the proportion of members of NIRs or other Stakeholders rating their experience dealing with APNIC as positive was up from 84% to 89% in 2022. The proportion rating their experience as excellent almost doubled to 50%, from 26% in the last survey.

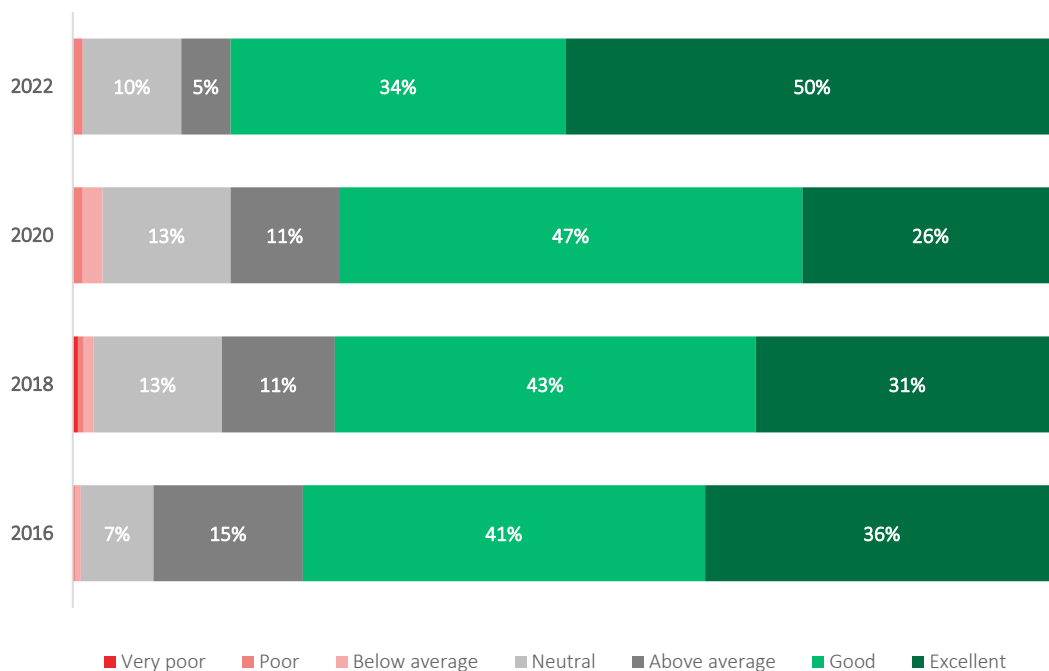
Respondents from South Asia provided the most positive feedback. Ninety four percent (94%) of respondents from South Asia provided positive ratings. At 65%, Stakeholders from South Asia were also significantly more likely than respondents from other regions to rate their experiences with APNIC as excellent.

This compares to 83% in East Asia, 84% in Oceania and 88% in South East Asia. Notably, satisfaction amongst Stakeholders in Oceania fell from 90% in both 2020 and 2018, to 84% in 2022.

There were no differences between Stakeholders from developed or developing economies and LDEs.

Overall, how would you rate your experience dealing with APNIC?

(Stakeholders who have used APNIC services only: 2016 n=292; 2018 n=192, 2020 n=502, 2022=398)



Governance

Survey respondents were asked to assess APNIC governance processes. As in previous years, respondents were asked whether they believed APNIC was sufficiently open and transparent, and whether it was respected in the Internet community. In 2022, respondents were asked for the first time whether APNIC was responsive to the changing needs of its community, and whether APNIC practices environmental sustainability in its service delivery.

Transparency

APNIC aims to be transparent across its business practices and dealings with Members. As transparency is one of APNIC’s core values, it is important that Members feel satisfied with the openness and transparency of its activities.

As seen over past years, a high proportion of Members agreed that APNIC was sufficiently open and transparent. Almost nine out of 10 (89%) Members stated they were satisfied with APNIC’s openness and

transparency in 2022. This included 21% that strongly agreed, and 57% that agreed.

Agreement was highest in South Asia at 94%, followed by South East Asia at 92%. While still high, agreement was lowest in Oceania, at 83%. These percentages across those regions were fairly consistent with 2020.

Also similar with 2020, LDEs were more likely to agree that APNIC is open and transparent, at 93%, compared with 88% in Other economies.

	Total	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	1,060	168	206	287	334	302	693
Top 3 Satisfaction	89%	85%	83%	92%	94%	93%	88%

Q: Thinking about APNIC, please indicate how much you agree that APNIC is sufficiently open and transparent in its activities

Significantly higher / lower than total

Respect

Members were asked how well APNIC was respected in the Internet community. Similar to previous years, more than nine out of 10 (93%) of respondents in 2022 indicated that APNIC was very well regarded. This figure was 92% in 2020.

Agreement that APNIC is respected in the Internet community was highest in South Asia, at 97% in 2022. This is consistent with 2020, when agreement was also

highest in South Asia, at 95%.

Agreement was second-highest in South East Asia, at 94% in 2022, followed by Oceania, at 91%. These percentages were also similar in the previous survey.

At 95% in 2022, Members in LDEs had a slightly higher level of agreement that APNIC is well respected than those in Other economies, at 93%.

	Total	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	1,060	168	206	287	334	302	693
Top 3 Satisfaction	93%	88%	91%	94%	97%	95%	93%

Q: Thinking about APNIC, please indicate how much you agree that APNIC is respected in the Internet community

Significantly higher / lower than total

Responsiveness

It is important that APNIC remains responsive to the changing needs of the community. In 2022, Members were asked for the first time how responsive they felt APNIC is to their changing needs.

Pleasingly, almost nine out of 10 (88%) of Members agreed that APNIC was responsive to the changing needs of the Internet community. This included 19% that strongly agreed, 56% that agreed, and 13% that slightly agreed.

At 91%, Members in South Asia and South East Asia were significantly more likely to agree that APNIC is

responsive, compared with 82% for Oceania, and 83% for East Asia. Further, 91% Members in LDEs agreed that APNIC is responsive to the changing needs of the Internet community, compared with 87% of Members in Other economies.

	Total	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	1,060	168	206	287	334	302	693
Top 3 Satisfaction	88%	83%	82%	91%	91%	91%	87%

Q: Thinking about APNIC, please indicate how much you agree that APNIC is responsive to the changing needs of the community

Significantly higher / lower than total

Environmental Sustainability

APNIC strives to ensure its service delivery practices are environmentally sustainable. As such, Members were asked for the first time in 2022 whether they agreed that APNIC satisfies these principles.

Four out of five (80%) Members were satisfied that APNIC practices environmental sustainability in its service delivery, including 19% that strongly agreed, 51% that agreed, and 9% that slightly agreed.

Agreement was highest in South Asia and South East

Asia, at 91% and 88%, respectively. Members in Oceania were significantly less likely to agree that APNIC's service delivery is environmentally sustainable, at 54%. As a result, Members in other economies were also significantly less likely to agree, at 77%, compared with Members in LDEs, at 89%.

	Total	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	1,060	168	206	287	334	302	693
Top 3 Satisfaction	80%	81%	54%	88%	91%	89%	77%

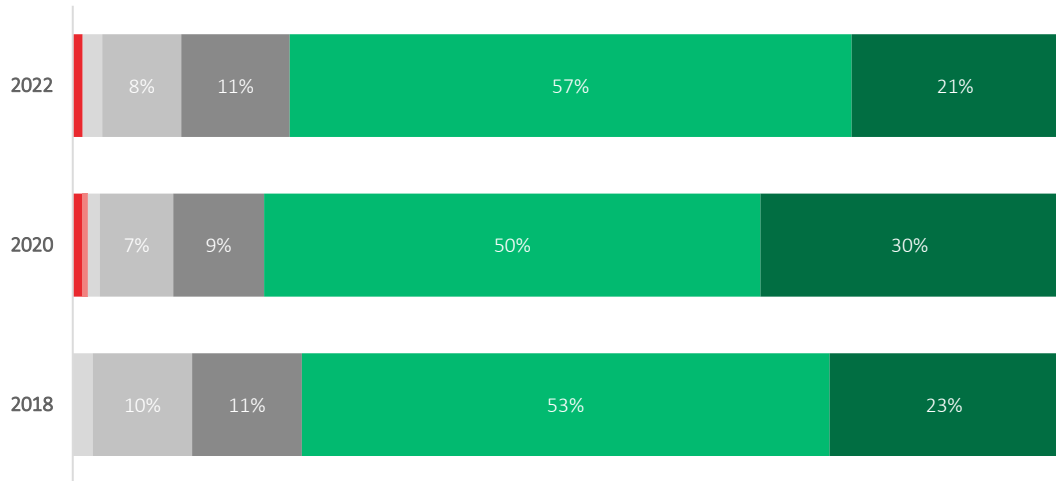
Q: Thinking about APNIC, please indicate how much you agree that APNIC practices environmental sustainability in its service delivery

Significantly higher / lower than total

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Thinking about your membership of APNIC, how much do you AGREE that APNIC is sufficiently transparent in its activities?

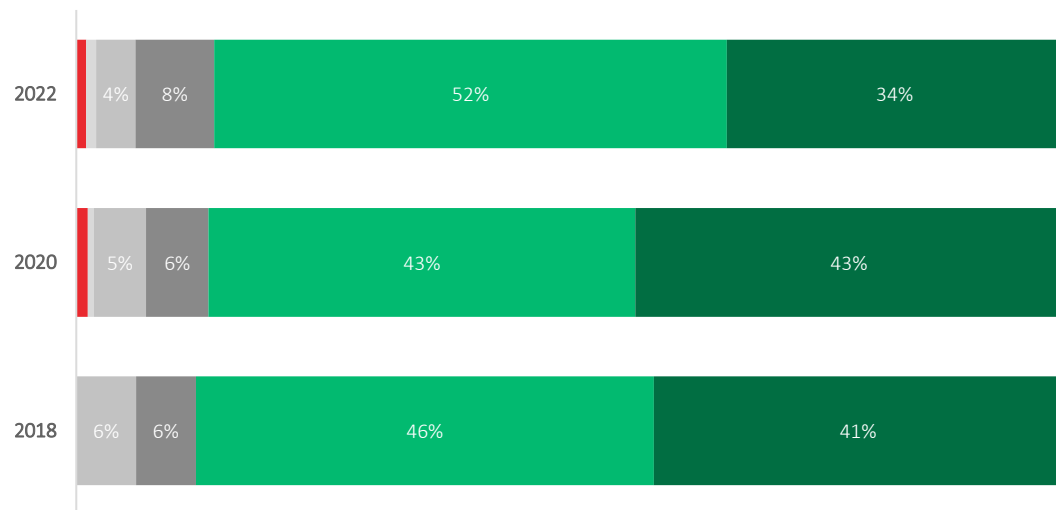
(Members only. 2016 n=733; 2018 n=903, 2020 n=1,118, 2022 n=1,061)



■ Strongly disagree ■ Disagree ■ Slightly disagree ■ Neither agree nor disagree ■ Slightly agree ■ Agree ■ Strongly agree

Thinking about your membership of APNIC, how much do you AGREE that APNIC is respected in the Internet community?

(Members only. 2016 n=733; 2018 n=903, 2020 n = 1,118, 2022 n=1,061)



■ Strongly disagree ■ Disagree ■ Slightly disagree ■ Neither agree nor disagree ■ Slightly agree ■ Agree ■ Strongly agree

Endorsement

In addition to understanding how satisfied Members and Stakeholders are with APNIC services, the survey asked respondents to indicate how they speak about APNIC to others. As also highlighted through Interview feedback, APNIC is highly regarded by Members and Stakeholders.

Consistent with 2020 results, a large majority of Members and Stakeholders (63%) either speak well of APNIC when asked, or speak highly without being asked. There is little difference in opinion between Members and Stakeholders, although Stakeholders (66%) are slightly more likely to speak highly of APNIC than Members (64%).

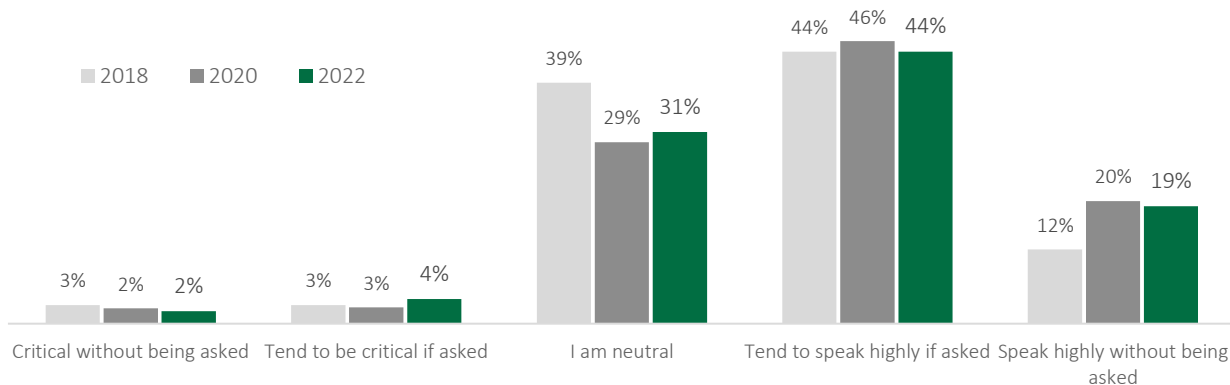
Those in South Asia (24%) are significantly more likely to speak highly about APNIC without being asked than those

in other regions. Conversely those in Oceania (13%) are significantly less likely to speak well of APNIC without being asked than their regional counterparts.

There are no significant differences in endorsement of APNIC across organization size and type, although those in management positions (25%) are much more likely to say they speak highly of APNIC than those in technical roles (17%).

Which of these phrases best describes the way you speak about APNIC to others?

(All respondents: 2018: n=1,241; 2020: n=1,624, 2022: n=1,623)



	Members	Stakeholders	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample Size	1,061	561	269	275	454	486	395	1,089
Critical without being asked	1%	2%	1%	1%	1%	3%	4%	1%
Tend to be critical if asked	4%	4%	3%	2%	4%	4%	4%	3%
I am neutral	31%	33%	40%	30%	37%	24%	29%	33%
Tend to speak highly if asked	46%	40%	39%	44%	45%	45%	45%	43%
Speak highly without being asked	18%	21%	17%	23%	13%	24%	18%	19%
Mean Score	3.76	3.73	3.68	3.86	3.65	6.83	3.71	3.77
Standard Deviation	0.8	0.9	0.8	0.8	0.8	0.9	0.9	0.8

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Segment mean significantly higher / lower than total mean score



New or different products or services APNIC could offer to provide more value.

The survey also sought to understand if there were any new or different services that APNIC could consider that would offer more value to Members.

While one in five respondents said they could not think of anything, and a further 11% indicated that the current services were sufficient, nearly a quarter indicated that more advanced technical training offerings would be welcome. There were suggestions that APNIC could “accommodate more training like Advance network technologies like virtualization, AWS, IoT, data analysis” or “include more in-depth tutorials/labs with real world scenarios to help with ISPs to keep up with the industry standards and best practices.”

Others called for training in network and cybersecurity, saying “online trainings in Cybersecurity with certifications for its Members/ fellows with special discount” would be valuable to them.

A few mentioned that tools to help them prevent or identify DDoS attacks would be helpful, saying “I think APNIC can create central IP reputation database and control its suspicious traffic.” or “a downloadable table of AS numbers, IP blocks and ABUSE emails.”

“APNIC technical expertise and support on addressing our PPPoE dual stack (IPV4/IPV6) and RPKI enablement.” (South East Asia)

“More IPV6 in depth training materials to enable IPV6 ready students’ (East Asia)

“More IPV6 training and modern SDDC techniques, big iron vs compute etc.” (Oceania)

“Training for Security, Virtual Environment, Virtual Machines.” (South Asia)

“Penetration Testing and Cyber Attack Trends” (Oceania)

“Cyber security and data privacy.” (South East Asia)

“Can you explore on having a Threat intelligence or Abuse IP address tracking. It could be a more reputable DB that we can refer to.” (South East Asia)

“Cannot think of anything now that APNIC is not offering.” (East Asia)





COVID-19 Impacts



While the COVID-19 pandemic has presented challenges and difficulties for many businesses and organizations around the world, it has also provided opportunities for others.

To measure the impact of the COVID-19 pandemic on Members and Stakeholders, survey respondents were asked how they or their business have been affected by the outbreak.

Respondents answered questions on how demand for their services was affected by the COVID-19 pandemic, which issues had the most impact on their organization, and how confident they felt about the continuity and growth of their organization over the next two years.

To understand the propensity to travel and participate in face-to-face activities and events, the survey also asked about future participation intentions once restrictions have eased, as well as the benefits, if any, of in-person events over virtual or online activities.



Business-related impacts of the COVID-19 pandemic.

Given the global pandemic during the past two years, the survey included a section about the impacts to APNIC Members and Stakeholders. The first question asked respondents to talk about the effects on businesses in their own words, to provide a 'top of mind' indication of the pandemic impacts.

There were a wide variety of issues described by participants, with over 20 separate topics identified. The two primary ones however, were difficulties in conducting business and meetings virtually and problems setting up and managing people working from home. There were mentions that "... employees were less productive unlike when you're in the workplace where they easily collaborate and meeting with clients" and that "... working remotely, especially on selling that has no face to face discussion with the customer" impacted businesses.

Others faced problems with capacity, bandwidth and continuing to deliver the service quality expected from their customers, saying "suddenly, our government declared lock-down and we couldn't able to optimize our network to operate and maintain it remotely where traffic demand become increased rapidly". Others said that "increased demand for services and customer stress levels higher and expect higher level of services." were issues for them.

Many mentioned that they lost business when their customers were forced to close their businesses and consequently lost revenue themselves. Comments that "business were stopped at the time of lock down. Revenue down to almost zero" or "customer retention due to lose of business and we lost 50% revenue as our main clients are hotels and tourism industries" were common.

For others however, demand increased, sometimes substantially, while issues in the global supply chain meant they struggled to keep up. Respondents indicated that "high demand of the ICT equipment from the client side, shortage of the ICT products in the market" and that "our business grew a lot due to being an Internet Service Provider but due to rapid growth and supply chain issues our equipment was delayed and equipment capacities were throttled."

"As we are developing country, here people were losing their job, staying in house along other people during pandemic. We faced huge pressure on Internet usage during these time. It consumed almost double Internet comparing to regular times usage but a good number of people was failing to pay the monthly bill in these times too..."

South Asia

Pandemic Impacts

Despite the negative effects of the COVID-19 pandemic on a range of businesses and industry sectors around the world since early 2020, almost half (49%) of respondents indicated demand for their services increased during the COVID-19 pandemic.

This includes 26% that stated demand had risen significantly, and 23% indicating demand had risen somewhat. Demand increased for 50% of Members, and 44% for Stakeholders. Further, demand rose for 48% of respondents in LDEs, and 49% for those in Other economies.

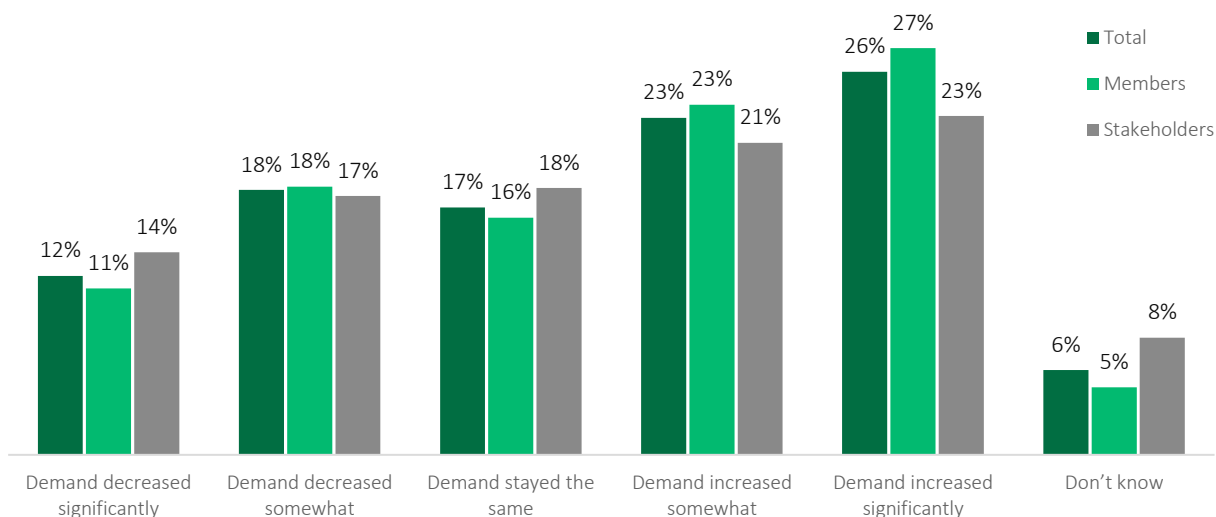
In both South Asia and Oceania, 58% of respondents

stated that demand had increased, compared with 38% for those in South East Asia.

In contrast, 30% of respondents reported a decline in demand, with consistent percentages for Members and Stakeholders, and those in LDEs and Other economies. In South East Asia, 36% of respondents indicated demand had declined due to the COVID-19 pandemic, compared with 23% in Oceania.

During COVID-19, what were the impacts on demand for your services?

(All respondents: n=1,621)



	East Asia	Oceania	SE Asia	South Asia	LDEs	Others
Sample size	269	275	454	485	394	1,089
Demand decreased significantly	6%	11%	13%	14%	17%	9%
Demand decreased somewhat	24%	12%	23%	12%	13%	19%
Demand stayed the same	24%	15%	19%	12%	13%	18%
Demand increased somewhat	30%	27%	19%	21%	20%	24%
Demand increased significantly	14%	31%	19%	37%	28%	25%
Don't know	3%	5%	7%	5%	8%	5%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

Greatest impact on business

Survey respondents were asked which issues and impacts related to the COVID-19 pandemic were most significant to their organization. The three main issues were the inability to travel (48%), managing people working from home (47%), and supply chain disruptions (43%).

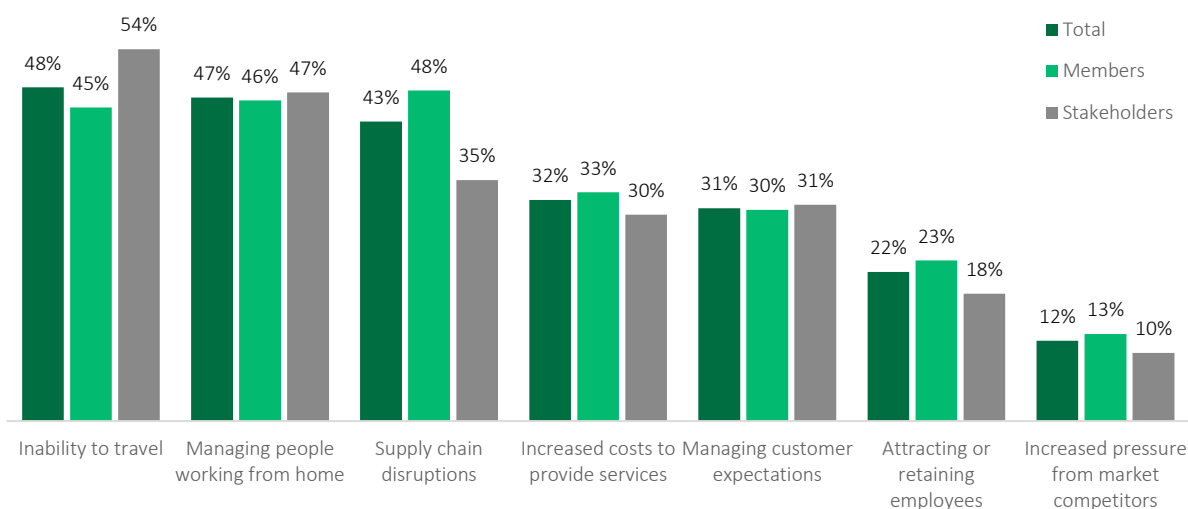
While the inability to travel was highlighted as the main issue for 54% of respondents in both East Asia and South East Asia, this issue was highlighted by just 41% of those in South Asia. Similarly, 42% of those in LDEs identified this issues, compared with 51% in Other economies.

Managing people working from home was stated as an important issue for respondents in South Asia (55%) compared with 35% in East Asia. Further, 55% of those in LDEs stated this as a main issue, compared with 44% in Other economies.

Supply chain disruptions were a main impact for 48% of Members, compared with 35% of Stakeholders. Similarly, 62% of those in Oceania identified this issue, compared with only 34% in South East Asia.

Thinking again about the issues and impacts of COVID-19, which of the following had the MOST impact on you or your organization?

(All respondents: n=1,621)



	East Asia	Oceania	SE Asia	South Asia	LDEs	Others
Sample size	269	275	454	486	395	1089
Inability to travel	54%	46%	54%	41%	42%	51%
Managing people working from home	35%	38%	51%	55%	55%	44%
Supply chain disruptions	44%	62%	34%	41%	40%	44%
Increased costs to provide services	34%	29%	28%	38%	39%	30%
Managing customer expectations	25%	31%	34%	32%	30%	31%
Attracting or retaining employees	19%	26%	22%	20%	20%	22%
Increased pressure from market competitors	11%	7%	15%	11%	12%	11%
Other	3%	3%	2%	2%	2%	2%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

Confidence in the future

Confidence about business continuity and growth over the next two years is relatively high. Almost half (47%) of respondents stated they are very confident about the future, with a further 39% being somewhat confident.

Future confidence is highest in South Asia, with 57% being very confident, compared with 30% in East Asia. Just over half (51%) of respondents in Oceania say they are very confident about business continuity and the growth prospects for their organization over the next two years. In South East Asia, the proportion is slightly lower at 43%.

Across economies, there was relative consistency,

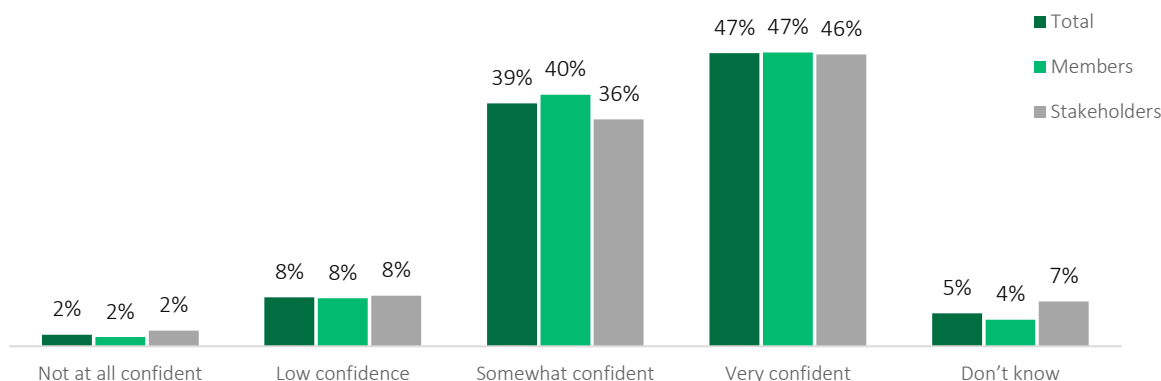
with 49% indicating they are confident about business continuity and growth in LDEs, and 46% in Other economies.

Only 2% of respondents are not at all confident about business continuity and growth within their organization over the next two years. This low percentage was relatively consistent across Members and Stakeholders, and similar across regions and economies.

Internet Services Providers (ISPs) were the most likely to indicate that they are very confident about the prospects for their business over the next two years, at 53%.

Thinking about business continuity and growth of your organization in the next two years, how confident are you about the future?

(All respondents: n=1,621)



	Total	East Asia	Oceania	SE Asia	South Asia	LDEs	Others
Sample size	1621	269	275	454	486	395	1089
Not at all confident	2%	3%	1%	2%	2%	3%	1%
Low confidence	8%	13%	5%	8%	6%	9%	7%
Somewhat confident	39%	47%	39%	41%	31%	32%	41%
Very confident	47%	30%	51%	43%	57%	49%	46%
Don't know	5%	7%	4%	6%	5%	7%	5%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total



What is impacting confidence?

The survey asked participants to provide their reasons for their confidence rating in their own words.

For those who had little or no confidence about business continuity and growth, most expressed a general feeling of uncertainty, saying “because the future is uncertain”, or they were “unsure what the future will bring”. One commented that “seems to me that we are in unprecedented times”, while others were concerned about “too many international and domestic uncertainty.”

Others with low confidence levels cited geo-political issues within their economy and around the world, or economic issues as their reason for little or no confidence. There was mention that “we are still not seeing the end of COVID nor the Russian-Ukraine wars”, or that “because Taliban here ... don't think that we will have better growth in the future”. Another respondent suggested that “... the current political climate in Myanmar, high unemployment and the economic downturn could hurt Internet subscribers”. Economically, issues such as “disruption of economic of my country” and “the worst economic crisis of my country and the global inflation” are damaging business growth and recovery, and therefore impacting levels of confidence.

Those who were more optimistic, expressing some or high levels of confidence in the future were either continuing to experience growth and high demand for their services, or believe that the pandemic had brought about a ‘new era’ in technology and Internet use, and as a result, they were positive about the future. There were many mentions that “we are a space where our services/products are still in high demand” and “the market is the mean reason. We are working in the web hosting industry which is a growing industry here. The market is huge!”.

“The rapid development of the Internet” and “the rise in the development of new networking technologies” were frequently cited as reasons to be confident, as were comments that “technology is evolving, things get smarter, more devices get connected to the Internet ...” and so “demand for network equipment is continuously increasing and people are becoming more interested in the latest technology in this day and age”.

Others believed that their organizations had worked hard and learned to become more agile, thus positioning themselves well for the future, saying “we have successfully navigated a very difficult period, and as other organizations catch up to speed with us we believe we are heading in the right direction.”

“Technology is evolving day by day and most of the things were done by Internet. As we are in technical environment, people are more dependent on technology. So, I believe that we can make better environment for the people in future.”

South East Asia

Future participation in face-to-face events

Survey participants were also asked about their or their organization’s intentions to attend face-to-face events when travel restrictions associated with the COVID-19 pandemic are eased. While results were highly consistent across Members and Stakeholders, there were some differences across regions and economies.

Approximately two out of five (39%) respondents stated they would be likely to attend more face-to-face events when travel returns. This was the same percentage for Members and Stakeholders.

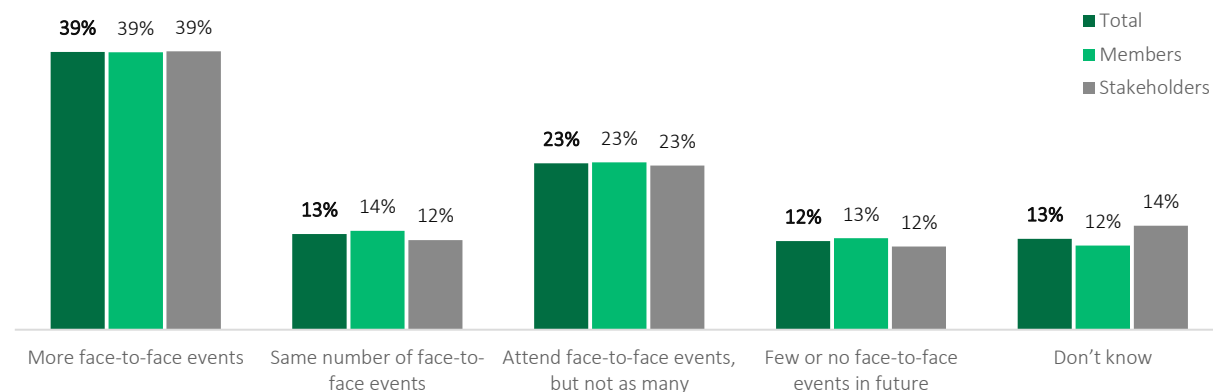
Respondents in LDEs were more likely to attend face-to-face events, at 54%, while those in Other economies were less likely, at 34%. Further, about half (51%) of respondents in South Asia expect to travel more for face-to-face events, compared with 30% in Oceania and 31% in East Asia.

About one-quarter (23%) of Member and Stakeholder respondents indicated they would likely continue to some attend face-to-face events, but not as many, when travel restrictions ease. Respondents in Other economies were more likely to say that they would attend fewer face-to-face events than they had previously, at 26%. The highest percentage of respondents indicating they will attend fewer face-to-face events were from East Asia, at 31%.

Only 12% of respondents indicated that they would attend few or no face-to-face events when travel restrictions ease, with little difference across regions.

When travel restrictions across the region are eased and travel becomes more common, do you think you or your organization will attend face-to-face events as you did before the COVID-19 pandemic?

(All respondents: n=1,623)



	Total	East Asia	Oceania	South East Asia	South Asia	LDEs	Others
Sample size	1,621	269	275	454	485	395	1,089
More face-to-face events	39%	31%	30%	37%	51%	54%	34%
Same number of face-to-face events	13%	17%	14%	11%	12%	10%	14%
Attend face-to-face events, but not as many	23%	31%	21%	28%	16%	15%	26%
Few or no face-to-face events in future	12%	12%	15%	12%	11%	10%	13%
Don't know	13%	9%	20%	12%	10%	10%	13%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

Benefits of in-person events

Survey respondents were asked what they considered to be the main benefits of attending APNIC events in-person. The main benefits identified were networking with other attendees (75%), meeting new people (56%), and ease of participation in discussions or sessions (49%). Only 5% of respondents preferred online events. Each of these percentages was similar for both Members and Stakeholders.

Four out of five (80%) of respondents in South Asia stated that networking with other attendees was the main benefit of attending APNIC events in person, compared with 70% in East Asia. This was also the main benefit for respondents in LDEs, at 79%, compared with those in Other economies, at 74%.

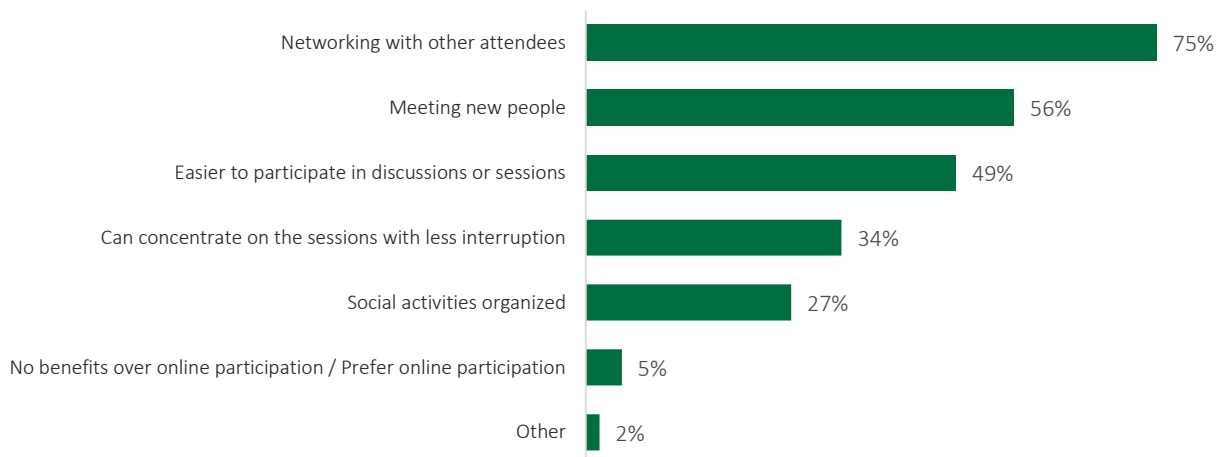
Respondents in Oceania were less likely to indicate that meeting new people was a main benefit, at 46%, compared with 60% in South East Asia, and 59% in South Asia. Further, 61% of those in LDEs chose this benefit, compared with 55% in Other economies.

Across respondents, approximately half (49%) stated face-to-face APNIC events made it easier to participate in discussions or sessions. This percentage was similar across each geographic region and economy.

About one-third (34%) of respondents indicated in-person APNIC events enabled them to concentrate on sessions with fewer interruptions, while 27% stated organized social activities were a main benefit.

What do you think are the MAIN benefits of attending APNIC events in-person?

(All respondents: n=1,623)



	Members	Stakeholders	East Asia	Oceania	SE Asia	South Asia	LDEs	Others
Sample size	1,061	561	269	275	454	485	395	1,089
Networking with other attendees	76%	73%	70%	73%	75%	80%	79%	74%
Meeting new people	56%	57%	56%	46%	60%	59%	61%	55%
Easier to participate	49%	48%	48%	48%	49%	51%	50%	49%
Can concentrate on the sessions with less interruption	32%	37%	30%	38%	32%	35%	31%	35%
Social activities organized	27%	28%	25%	22%	28%	30%	27%	27%
No benefits / Prefer online	5%	4%	5%	8%	5%	3%	3%	6%
Other	2%	2%	1%	2%	2%	1%	2%	1%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total



Internet-related Challenges



To test feedback from Interviews and understand how APNIC can best support the Internet community, the survey always includes a section about the strategic and operational challenges respondents face in providing products and services.

More detailed information about the challenges organizations face in relation to managing network security and scarcity of IPv4 addresses, as well as how respondents believe APNIC can help in these areas, was also canvassed by the survey.



What is the main challenge for you / your organisation in providing Internet-related products, services and activities?

To provide an understanding of the issues faced by Members and other Stakeholders in the Internet community, the survey first asked respondents to identify, in their own words, the main challenge for them or their organization in providing Internet-related products, services and activities.

Many issues were raised, however the most prominent amongst the verbatim comments were related to being able to provide stable Internet services and maintaining quality of service with so many people requiring Internet connectivity to work from home. Respondents talked about “the main challenge is to be able to supply Internet connectivity to everyone and also to assure continuity of service hosted locally to Internet”, or that “in Internet services, Up-time is most important but recently customers are focusing more on latency and speed which is challenging to maintain the KPI.”

Challenges with rising costs were also frequently mentioned, with comments that “the biggest challenge we have is rising costs and delay in shipments”.

Internet security was also top of mind for many, with mentions that “securing our data / services while users are all over the place” and “our main challenge is Cyber Security and mitigating DDOS attack” were concerning for them.



“Quality Assurance. How to ensure the quality of the existing network while supporting massive delivery of services.” (East Asia)

“Ensuring uninterrupted customer service” (South Asia)

“Higher communication quality (broadband, low latency, low loss, high availability) and improved security” (East Asia)

“COST- Being a landlock country, we have to rely on parties in India to provide us either IPLC or IP Transit service which is indeed very expensive. This has a ripple effect on the customer...” (South East Asia)

“Increasing complexity and costs to deliver services.” (Oceania)

“Improving Internet network security so that it is more balanced with the progress or speed of the Internet to maintain trust and provide the best service in the community.” (South East Asia)

“Maintaining continuous service delivery with the increase of 'bad actors' on the Internet. Monitoring and Security are very high on the agenda.” (Oceania)

What are the main challenges for your organization in providing Internet related products, services & activities?

Reliability and Internet service quality

"Internet quality problems. Ensuring the quality of sensitive services such as Internet electronic games" South East Asia

"Last-mile connectivity and connection stability" South Asia

"Limitation of bandwidth to outer islands due to Cable Cut in Tonga causing by the Volcanic Eruptions." Oceania

"Retain the Quality of services at the competitive market." South Asia

"Since Internet peaks its demand, bandwidth congestion is the issue considering some of our employees are living to provinces." South East Asia

Increasing costs

"Nowadays Internet bandwidth rate is too high." South Asia

"Our main challenge is rising costs" East Asia

"Regarding the product price and competition" South Asia

"Supply chain. Competition from other players entering the market or the very large corporate (inflexible) players with big marketing budgets." Oceania

"The main challenge of us is the expensive data packages for going over the activities for the engagement." South East Asia

Internet security

"Detecting piracy programs from corporate devices, employee devices/outsource/guest BYOD." South East Asia

"Database integrity, ensuring legitimate registrations are made by the legitimate organization." Oceania

"Abuse is an ongoing issue, particularly denial of service and spam attacks" Oceania

"Major problem is with security issues. As the financial organization are the most targeted organization by the hacker. And the challenges to combat the vulnerability is somewhat challenging" South Asia

"In my opinion, the biggest challenge in Internet service is Security, DDOS attack / data theft" South Asia

Competition

"There is a price war between ISPs" South East Asia

"The challenge today to the competitive market and demand from customers." South East Asia

"Competition with multiple oversea providers. Weak in local currency, which causing us lost a lot of talent to foreign company" South Asia

"Illegal competition in local market and weak telecom policy by government." South Asia

Staff shortages, lack of skilled people

"Access to adequate resources" South Asia

"Finding and keeping skilled staff especially in IT / networking and security areas" Oceania

"Time to hire and onboard highly qualified employees" South East Asia

"Developing the HR capital and not being able to retain them" South East Asia

"HR issue, unavailability of skilled workers here in this city, and lack of facilities people does not come from other cities." South Asia

“Its been a challenge to maintain network stability when node replacements are taking 6 months to be delivered.

In addition, the no job no job has negatively affected the human resources required to fully support the network & client demands. Client confidence in us providing support & network stability has decreased. We've lost some major clients during this pandemic period, hence loss of revenue.

The expenses in providing a telco service keeps increasing whilst revenue is decreasing. Another main challenge is managing teams working from home, sometimes they're not available as expected, as the Network isn't stable at their place of residence...”

APNIC Member, Oceania

Strategic Challenges

In keeping with previous surveys, and to understand how APNIC can best support the Internet community, a section was included about the challenges organizations face in providing Internet-related services. To better understand the differences between strategic and operational challenges, those in executive positions were first asked the main strategic challenges facing their organizations, and to rank their top three from a list of 12 items.

This year, changes were made to the statements to better reflect the environment after two years of COVID-19, and as a result of the interviews conducted with Members before the online survey. While direct comparisons cannot be made because of this, there has been some shifts in the strategic issues facing organizations.

In 2020, cost control of hardware, software and network investments was the dominant issue for executives, with 17% of respondents rating it as their biggest issue. This year, cost control has dropped to 9%, and the single largest issue is hiring and / or keeping skilled employees (15%). Internet security risks are the second largest strategic challenge, with policymakers and regulators' understanding of the Internet the third most pressing issue.

It should be noted, however, that there was a more even distribution in the ranking of strategic challenges this year than in 2020. This may be because there were three more issues to rank, or that the COVID-19 pandemic has shifted executive's focus, and this should be monitored over time.

Workforce

As with the problems associated with COVID-19, recruiting and maintaining a skilled workforce is the biggest concern for executives, with 15% ranking this as their most pressing issue, and almost one in four (38%) including it within their top three challenges. This is most apparent in Oceania and South East Asia, where 27% and 20% respectively ranked attracting and keeping skilled employees as their main strategic issue.

Staffing issues were also frequently mentioned across the verbatim comments about the effects of COVID-19, and the main challenges organizations faced.

Internet Security Risks

Security risks associated with providing Internet services is the largest challenge for 12% of respondents, and although this is down from 15% in the 2020 survey, it remains in the top three issues for over a third of executives in organizations.

While there are no evident differences between the APNIC regions, those Members running enterprise businesses (19%), in Academia or Research (26%), hardware or software vendors and IXP's (17%) are more concerned about security risks than other industries.

Understanding the Internet

In 2022, two new statements were added to the list of strategic challenges to test opinions about whether policymakers and regulators understand the Internet, and if managing the unintended consequences of regulations were impacting organizations at a strategic level. These two challenges ranked third and fourth in the main strategic issues by executives, at 10% and 9% respectively. Respondents in South East Asia and South Asia (both 13%) were most likely to say this is an issue they face.

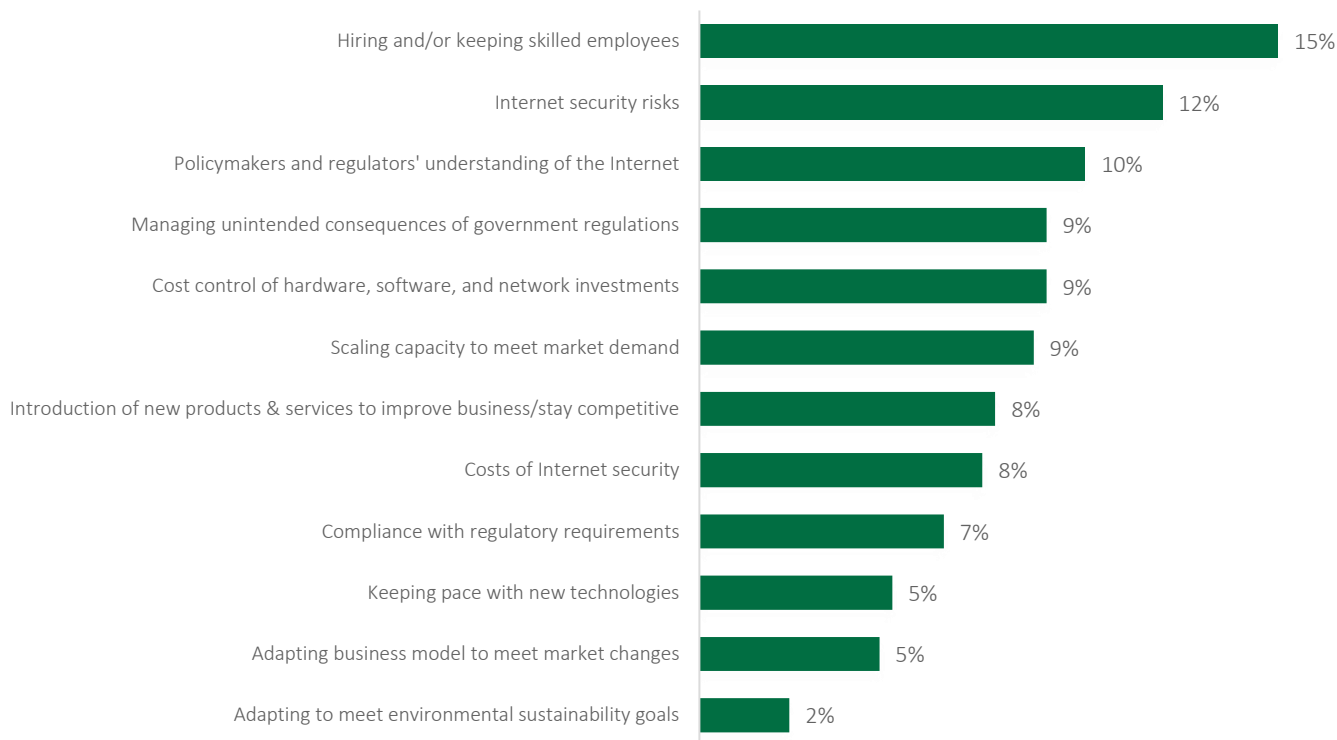
There were many calls in the verbatim comments for APNIC to engage more with governments in the region to provide "more education and probably influence to the policy maker".

Cost Control & Capacity to Meet Demand

Cost control of hardware, software and network investments, and scaling capacity to meet demand were both the top ranked challenge by 9% of executives, with ISPs more concerned than other industry types at 14% and 12% respectively.

Thinking about your Internet-related services, products or activities, what are the MAIN STRATEGIC challenges facing your organization?

(Ranking Question. Respondents holding executive roles asked to rank at least top 3 items, n=291) (% Ranked 1)



	Member	Stakeholder	East Asia	Oceania	South East Asia	South Asia	LDEs	Other
Sample size	219	72	45	64	66	90	72	193
Hiring and/or keeping skilled employees	17%	10%	11%	27%	20%	9%	13%	18%
Internet security risks	12%	13%	7%	13%	14%	14%	8%	14%
Polymakers and regulators' understanding of the Internet	8%	18%	9%	8%	11%	12%	13%	9%
Managing the unintended consequences of government regulations	11%	6%	13%	8%	6%	13%	17%	8%
Cost control of hardware, software, and network investments	11%	6%	7%	8%	8%	14%	14%	8%
Scaling capacity to meet market demand	11%	4%	11%	14%	8%	4%	4%	10%
Introduction of new products and services to improve our business and stay competitive	6%	14%	18%	5%	6%	4%	4%	8%
Costs of Internet security	8%	7%	9%	5%	9%	8%	11%	6%
Compliance with regulatory requirements	6%	7%	4%	5%	6%	10%	10%	6%
Keeping pace with new technologies	5%	7%	9%	2%	8%	1%	3%	5%
Adapting business model to meet market changes	5%	3%	2%	5%	2%	8%	4%	5%
Adapting our organization to meet environmental sustainability goals	1%	7%	0%	3%	5%	1%	0%	3%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significance tests not performed on ranking questions

Operational Challenges

The next question was designed to test the operational challenges organizations face in providing Internet-related services. The question asked respondents to identify the challenges facing their organization, and to rank at least three in order of priority, from a list of 11 items.

This year, the top three operational challenges facing organizations have changed slightly. Internet security remains the major issue for three in ten organizations, up from 23% in 2020. Managing the cost of systems, operations and security is also a challenge, however this has dropped from 18%, ranking this as their biggest issue in 2020, to 14% this year.

Skills shortages and a lack of suitably qualified technical people is the third most ranked issue at 12%. This statement was not asked in in 2020, however, is obviously of concern to many as it was also mentioned frequently in the Interviews conducted before the online survey.

Perhaps positively, while IPv4 scarcity was in the top three most important issues in 2020, it dropped to sixth position this year, with only 7% indicating this was their biggest problem. In addition, despite mentions that deployment of IPv6 was challenging to smaller or LDEs in the qualitative Interviews, this was not ranked highly among survey participants' operational challenges.

Internet Security

Internet security was the most frequently mentioned challenge in the Interviews conducted prior to this survey, and in verbatim feedback from the online survey, and it remains the single biggest issue by respondents in the 2022 survey. Three in ten (30%) participants rank Internet security as their main operational challenge, and this rises to over half (54%) rating it as one of their top three issues.

While there are no major differences in the ranking of Internet security across the APNIC regions, or in economic classification, those working for hardware and software vendors and IXPs (40%), enterprise businesses (41%) or in government or regulatory authorities (52%) are more likely than other business types to be concerned about Internet security. Similarly, there are differences between organizations of different size, with large and corporate organizations (1,000-10,000 or over 10,000 employees) more likely to rank Internet security as their top challenge than smaller organizations (34% and 36% respectively)

Managing the Costs of Systems, Network Operation and Security

From an operational perspective, cost control is of concern for 14% of participants, although this has dropped from 18% in 2020. When examined by the top three operational challenges, over two in five (41%) respondents rank costs of systems, networks and security as one, two or three. Those in LDEs are more concerned about cost control than their counterparts, with 17% ranking this their top priority, compared to 13% in developed or developing economies.

At 17%, the costs of systems, networks and security are also of greater concern to ISPs and telecommunication or mobile providers than other industry sectors. Micro organizations with less than 100 employees are also more likely to say this is their biggest issue (17%).

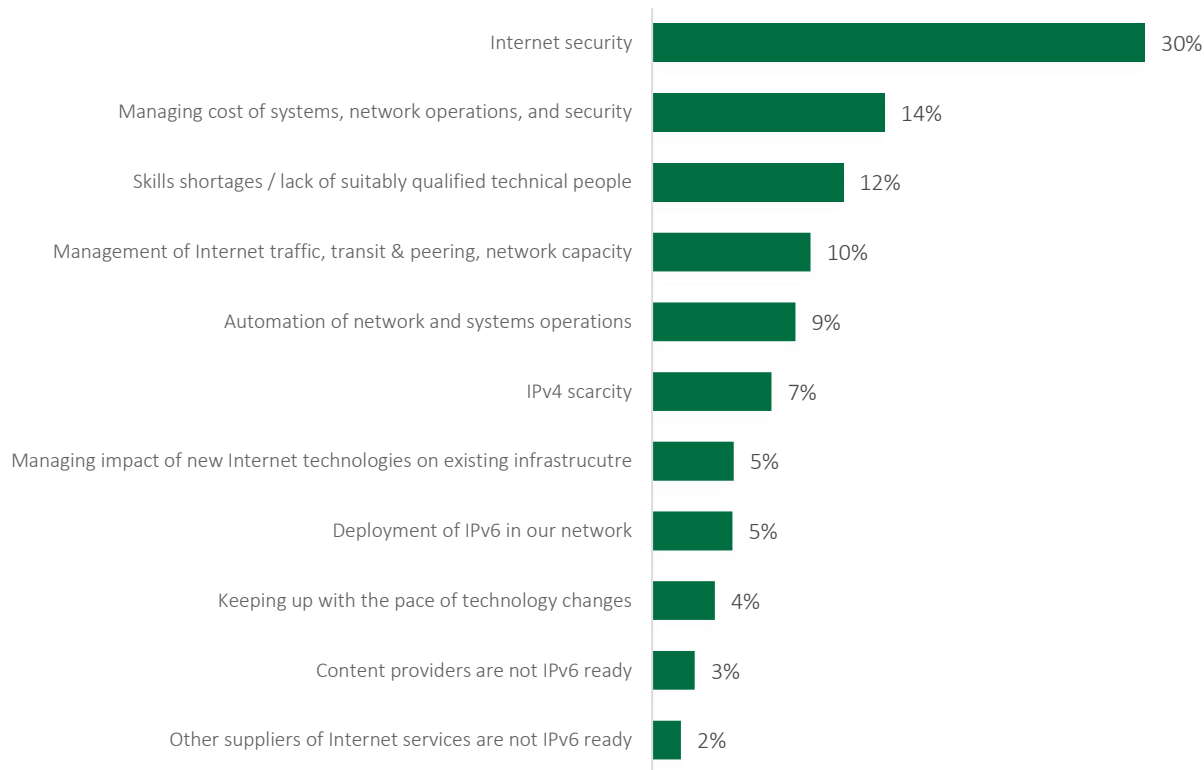
Skills Shortages

This year, based on feedback from the Interviews conducted prior to this survey, skills shortages or a lack of suitably qualified technical people was included in the list of operational challenges facing Members and Stakeholders. The top ranked strategic issue for executives, it is also the third highest operational issue. Twelve percent (12%) of participants ranked this their biggest challenge, while over a third (35%) rated this as one of their top three operational issues.

Verbatim comments also reflect issues with finding and keeping skilled technical people, with comments that "retaining and hiring qualified employees" and "a lack of engineers" or "unavailability of skilled workers here in this city" are causing problems for them.

Thinking about your Internet-related services, products or activities, what are the MAIN operational challenges facing your organization?

(Ranking Question. All Respondents asked to rank at least top 3 items, n=1,300) (% Ranked 1)



	Member	Stakeholder	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample size	1,052	248	223	228	366	399	340	876
Internet security	29%	37%	31%	29%	31%	28%	29%	30%
Managing cost of systems, network operations, and security	15%	12%	10%	15%	15%	16%	17%	13%
Skills shortages / lack of suitably qualified technical people	12%	10%	11%	17%	11%	10%	9%	13%
Management of Internet traffic, transit and peering, and network capacity	11%	6%	13%	12%	8%	8%	10%	10%
Automation of network and systems operations	10%	6%	5%	12%	10%	8%	9%	9%
IPv4 scarcity	7%	9%	9%	4%	8%	7%	6%	8%
Managing the impact of new Internet technologies (for example 5G, Internet of Things (IoT)) on existing infrastructure	5%	6%	6%	4%	5%	6%	4%	5%
Deployment of IPv6 in our network	4%	7%	4%	1%	4%	8%	6%	4%
Keeping up with the pace of technology changes (for example, SDN, NFV, blockchain)	4%	4%	4%	3%	5%	3%	3%	4%
Content providers are not IPv6 ready	3%	2%	3%	1%	3%	4%	4%	2%
Other suppliers of Internet services are not IPv6 ready	2%	1%	3%	1%	1%	3%	3%	1%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significance tests not performed on ranking questions



“The continued services of APNIC particularly on new technology trainings, IPv4/IPv6 resource management, plus online and face to face events helps operators manage their challenges.”

South Asia

How can APNIC best assist with these challenges, if at all?

As in previous surveys, when asked how APNIC can assist with their challenges, overwhelmingly Members talked about continued provision of training and education, from simply ‘training’ to more advanced content on IPv6 and Internet security. Over two in five comments mentioned these as the best form of assistance.

There were also calls for information on best practice, including case studies, videos and in blog posts.

With travel restrictions easing, many want a return to face-to-face meetings, including training, and also for training to be provided in the local language.

Others however, think APNIC is doing all it can already to support with their challenges, or believe that their issues are not within APNIC’s control.



“Expand the content of the APNIC Academy. Offer low-cost but recognised certifications through APNIC Academy. Conduct webinars frequently”. (South Asia)

“APNIC can focus more on Architecture of networks with automation to be put in place. For example, how ISPs build or migrate to include automation in Networks.” (South Asia)

“Continue to offer training material on-line in the form of live presentations but also as self-paced training material. Keep Members informed of new features and facilities available through APNIC. Perhaps partner with major players in the region to provide further insights into future technologies.” (Oceania)

“Providing more detailed material about the Internet” (South East Asia)

How might APNIC best assist you or others with these challenges?

Training, advanced training, Internet security and IPv6 training

"APNIC could first provide some targeted training to our staff Members in overcoming the technical issues in ensuring uninterrupted networking services." South Asia

"Carrying out more trainings and certifications to ensure skillset of the employees are up to a standard." Oceania

"Continuous Product Knowledge/ Services transfer, awareness through informative literature/ used cases...etc. On-demand also very helpful for related webinars." South East Asia

"Hold more online training courses" East Asia

"IPv6 deployment - trainings and seminars" South East Asia

"Internet security, Technical skill development, recourse share etc." South Asia

"Focussed training on IPv6 and related security for not only our organization, but for all companies to increase the knowledge out there" Oceania

"Cyber security training seminar/course is needed." East Asia

"Can help us by providing DDoS protection guidelines, documents and training for further network stability" South Asia

Best practice information, case studies, video's, blog posts

"Provide more video materials that are basic and can be used for introductory IT courses." South East Asia

"Provide dashboard stats and awareness seminars" South East Asia

"It would be very helpful if APNIC can periodically publish some Best Current Practices from Members which we can learn from." East Asia

"Low cost, effective high end devices (firewalls, core network nodes, edge devices) can be discussed on APNIC community, on which would be the best cost effective devices to deploy within telco networks..." Oceania

"More forums for people to share war stories, especially over firewall and security challenges" Oceania

"On Security side, it would be great if APNIC can provide more training / best of practice examples for mid/small companies to follow." East Asia

"Share more blogs and following new plans and procedures." South Asia

Education and collaboration with governments and the community

"To promote rural Internet and sustainable development of Internet-related workforce I think APNIC can sit with BTRC or Telecommunication Regulatory Body to ensure special incentives for rural/regional/territorial companies." South Asia

"More non-technical training to support the education of non-technical resources (such as managers, administration, product managers, marketing staff, accountants, etc) in our industry." Oceania

"Providing regulators and authority bodies information/knowledge on the use/capabilities of the Internet" Oceania

"APNIC can assist with training in cybersecurity knowledge, can lobby the government for a number of cybersecurity policies so that users can be more open to Internet services as well as some other freedoms." South East Asia

"APNIC can act as a bridge in b/w organization like us and govt authorities so that there is a common platform where in all ISP can share their feedback to APNIC regarding challenges in terms of govt policies and APNIC can further raise concern with concern govt authority. South Asia

APNIC is doing all it can

"APNIC doing great so far." South Asia

"I think APNIC does what it does well through its services and provides excellent thought leadership in the realm of Internet engineering." Oceania

"None, APNIC is already doing a lot" South East Asia

Internet Security

As in previous years, the survey next asked respondents to select the main Internet security challenges facing their organization. This provides a better understanding of the specific issues concerning the Internet community.

While the results are not directly comparable due to the addition of one statement in 2022, comparison to the 2020 results are shown below.

Overall, there is little change in the Internet security challenges faced by Members. As in 2020 and 2018, DDoS attacks, phishing, spam, malware and ransomware remain the major challenges in dealing with Internet security, with over two in five participants indicating these are concerning.

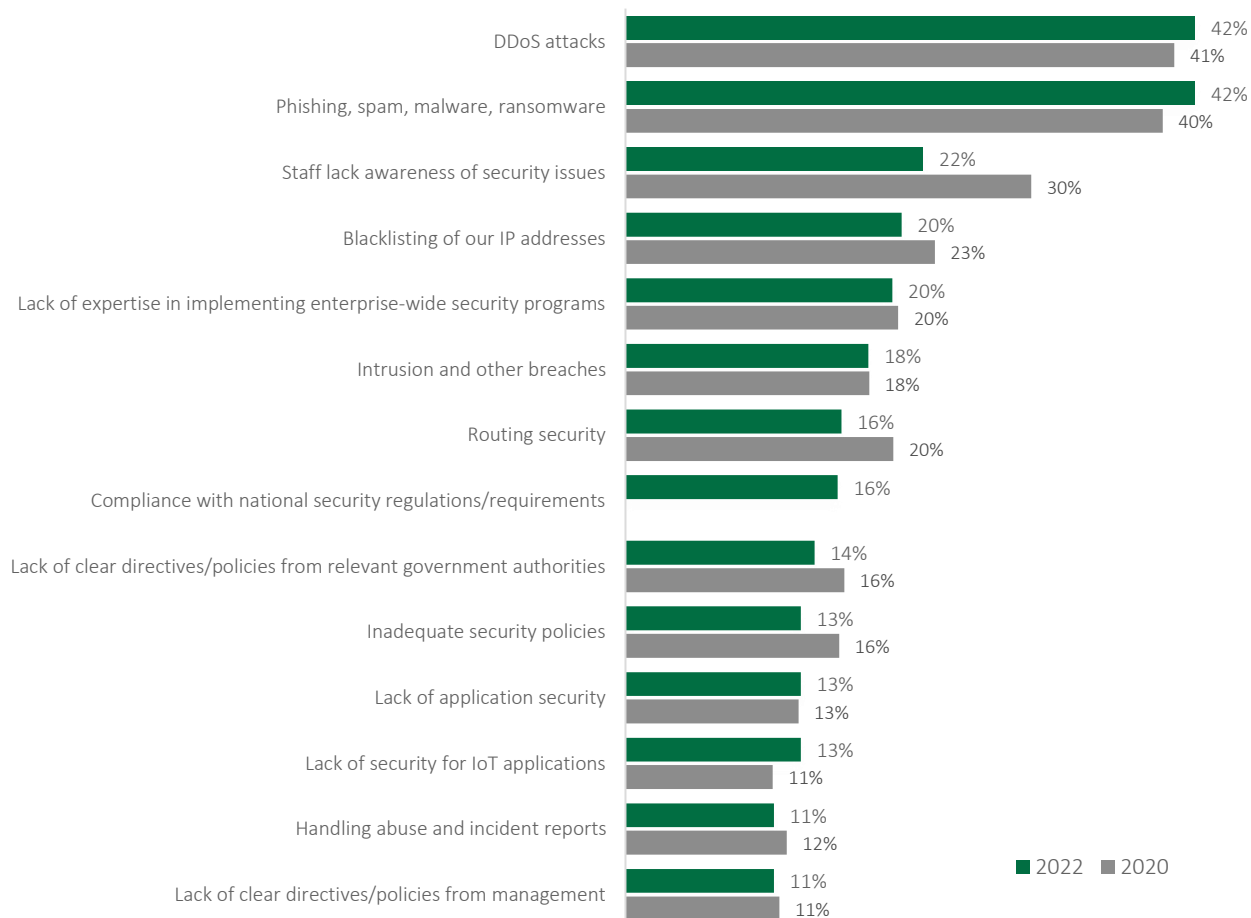
This is consistent with feedback in the qualitative Interviews, where almost half of participants mentioned Internet or network security as the biggest challenge they are facing, including one in three mentioning that the rise of cybercrime, and in particular ransomware, was concerning for them.

Staff lacking awareness of security issues is still the third biggest challenge, however, this has fallen from three in ten (30%) respondents in 2020 to 22% in 2022.

Compliance with national security regulations or requirements is a new issue in the 2022 survey, and 16% of respondents included this among the three main challenges they face.

Thinking about Internet security, what are the MAIN challenges facing your organization?

(All Respondents. Select up to 3. Base n=1,310.)



When examined across regions, it appears DDoS attacks are a greater issue in South Asia with half of respondents in this area including this within their three main challenges. DDoS attacks are also a much greater problem for those in ISPs, with 56% identifying this as a challenge for their organization. Conversely, those in Oceania (32%) and in Academia and Research (30%) perceive this to be less of an issue for their organization.

Blacklisting of IP addresses are also a bigger issue in South Asia (26%) and ISPs (32%) than for other regions or organizations, with those in East Asia significantly less likely to include blacklisting of IP addresses as a concern. In South East Asia, a lack of expertise in implementing enterprise-wide security (25%) and handling abuse and incident reports (15%) are more challenging for respondents than for their regional counterparts.

A lack of clear directives or policies from governments (22%) is the fourth most concerning Internet security challenge for LDEs, however this is of much lower concern to developed or developing economies, where just over one in ten indicate lack of direction as a problem. On the other hand, developing and developed economies are more concerned about intrusion and other security breaches (22%) than those in LDEs (11%).

Similarly, Infrastructure organizations (60%) are significantly more concerned about intrusion or other breaches than other organization types.

Thinking about Internet security, what are the MAIN challenges facing your organization?

(All Respondents. Select up to 3. Base n=1,310)

	Members	Stakeholders	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample size	1,061	249	228	228	370	400	345	881
DDoS attacks	44%	33%	49%	32%	37%	50%	47%	40%
Phishing, spam, malware, ransomware	43%	38%	43%	46%	38%	45%	37%	45%
Staff lack awareness of security issues	22%	23%	18%	26%	24%	21%	20%	23%
Blacklisting of our IP addresses	22%	16%	13%	15%	24%	26%	26%	19%
Lack of expertise in implementing enterprise-wide security programs	18%	26%	17%	20%	25%	17%	20%	20%
Intrusion and other breaches	18%	20%	21%	25%	17%	15%	11%	22%
Routing security	17%	15%	19%	14%	17%	14%	18%	15%
Compliance with national security regulations/requirements	16%	16%	18%	20%	16%	13%	15%	16%
Lack of clear directives/policies from relevant government authorities	14%	15%	11%	10%	17%	17%	22%	11%
Lack of security for IoT devices/applications	13%	15%	12%	12%	11%	15%	12%	13%
Inadequate security policies	12%	17%	16%	15%	11%	12%	14%	12%
Lack of application security	12%	14%	10%	11%	13%	15%	15%	12%
Handling abuse and incident reports	11%	10%	11%	9%	15%	8%	9%	12%
Lack of clear directives/policies from management	10%	12%	9%	14%	10%	11%	13%	10%
Other	2%	2%	2%	4%	1%	1%	1%	2%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

The survey then asked how APNIC could assist with the Internet security issues. This year three additional activities were included for respondents to consider, so there is no direct comparison to the 2020 or 2018 results, however increased security-focussed training (30%) and collaboration with others (28%) remain the most useful APNIC activities to help with Internet security issues.

This is also evident in the verbatim comments provided, with many mentioning “training and more online resources on network and Internet security challenges” or “collaboration and security sessions” are the best forms of assistance.

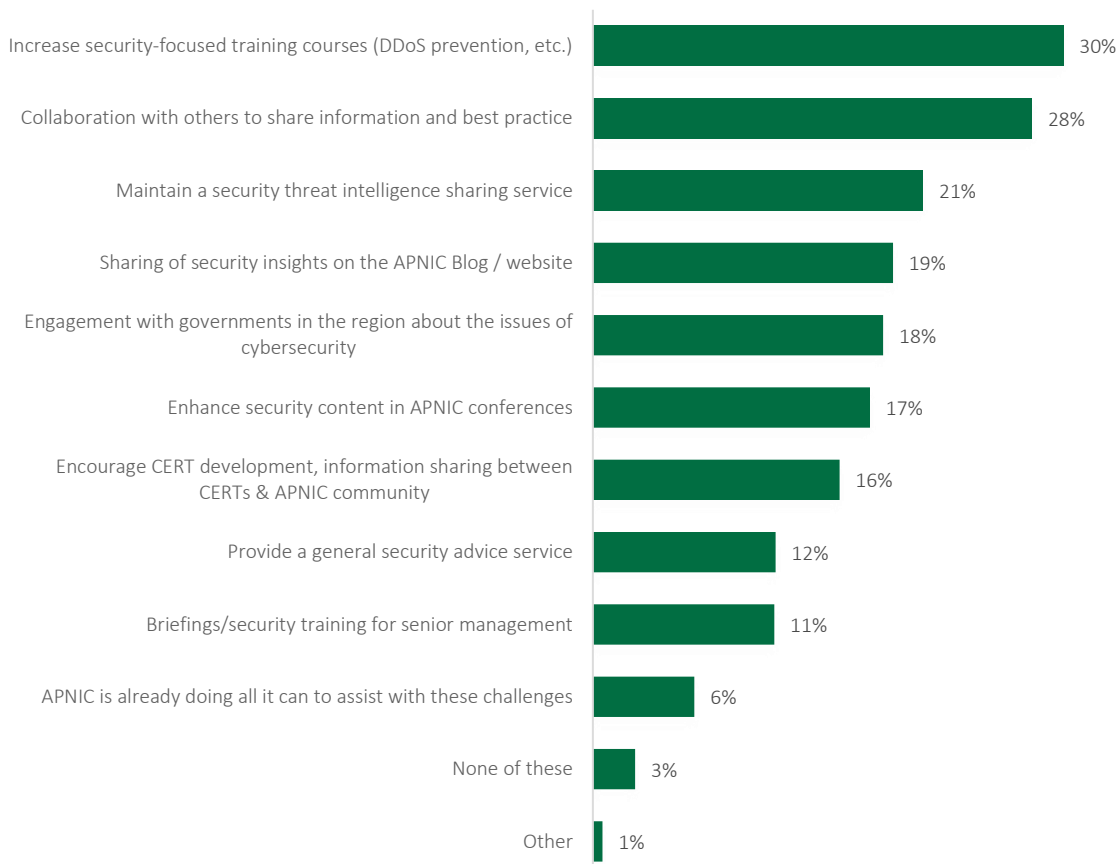
Although there are no differences across regions or economy types, ISPs (37%) were significantly more likely than other organization types to identify increased security-focused training courses like DDoS prevention and security policy development as useful to them.

Maintaining security threat intelligence sharing services was one of the additional activities included in the 2022 survey, and 21% of respondents believe this would also help them manage their Internet security issues. Sharing experiences and issues was also mentioned in the verbatim comments, with some calling for APNIC to “start a separate SIG (for Internet Security) , and this group can work on various points, including starting threat intelligence sharing program among APNIC Members”.

Sharing security experiences and insights on the APNIC Blog and website is also appealing to around one in five respondents, and this was also apparent in the verbatim comments with mentions for APNIC to “provide information on the blog about Internet security” or to “create a Open Source tools review blog for security related tools”.

How could APNIC assist with these Internet security issues?

(All Respondents. Select up to 2. Base n=1,310.)



“I definitely think that sharing security-related information is the most important thing. As IoT or network equipment (switches, routers) is vulnerable to security threats and the botnet continues to grow, it would be great if you could receive guidance on how to respond to DDoS attacks using botnets.”

East Asia

How might APNIC best assist you or others with network security challenges?

(All Respondents. Select up to 2. Base n=1,310)

	Members	Stakeholders	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample size	1,061	249	228	228	370	400	345	881
Increase security-focused training courses (DDoS prevention, security policy development and so forth)	30%	30%	29%	24%	26%	35%	35%	27%
Collaboration with other technical security organizations to share information and best practice	28%	26%	29%	27%	30%	27%	30%	28%
Maintain a security threat intelligence sharing service	21%	20%	27%	20%	19%	19%	16%	23%
Sharing of security insights on the APNIC Blog and website	20%	14%	18%	19%	19%	18%	18%	19%
Engagement with governments in the region about the issues of cybersecurity	18%	20%	19%	18%	14%	22%	22%	17%
Enhance security content in APNIC conferences	17%	18%	17%	11%	17%	20%	20%	16%
Encourage CERT development and information sharing between CERTs and the APNIC community	14%	23%	14%	17%	19%	14%	12%	18%
Provide a general security advice service	12%	10%	11%	10%	14%	11%	10%	12%
Briefings/security training for senior management	11%	15%	9%	12%	13%	13%	13%	11%
APNIC is already doing all it can to assist with these challenges	7%	4%	6%	8%	7%	6%	6%	7%
None of these	3%	2%	1%	7%	2%	2%	1%	3%
Other (Please specify)	1%	0%	0%	1%	1%	0%	0%	1%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region
*Translated

Significantly higher / lower than total



Do you have any other ideas about how APNIC can assist with network and Internet security challenges?

Around a quarter of respondents either did not know how APNIC could assist with security challenges, or thought that APNIC couldn't do anything.

Of those who did have suggestions, most continued to call for training, particularly on Internet and cybersecurity.

As with assistance with Internet-related challenges, some also mentioned greater education of government, authorities and the community about Internet security to help them understand the risks.

Others called for an app or community forum where they could share information and ideas about Internet security and ways to mitigate the security breaches and intrusion.

A few wanted information about open-source tools or technologies to help them manage Internet security.

"I am not sure what other network security APNIC would provide." South East Asia

"I have no clear idea; maybe more offline and online training is needed" South Asia

"APNIC can assist with network and Internet security challenges by providing more training, providing information of the latest security threat and advise how to prevent those threats..." South Asia

"Provide more webinar/training on network security" East Asia

"Specific sector related security training and discussion would help" South Asia

"We need advice & skillset assistance on how to identify and correct the abuse flagged against our IP addresses. The abuse has been continuous for quite some time and has not been addressed." Oceania

"Yes, making senior management aware of security affecting business." South Asia

"Local governments should be required to pay attention to information security issues, and local enterprises should be required to obtain iso2700 series." East Asia

Do you have any other ideas about how APNIC can help with Internet security issues in the region?

Training

“Advance hands-on training on Security topics.” South Asia

“DNS SEC related seminars and webinars” East Asia

“More APNIC training concerning security and actions.” East Asia

“Telecom Operator Security Framework and security best practices will help. Training will also help.” South East Asia

“Yes, I want APNIC to help us to fight against cyber security by providing training and implementation of various open-source products.” South Asia

“Yes, It can assist by providing in depth training on Internet security for Network Engineers in [Economy]” Oceania

Information sharing

“Provide online discussion forum and more and more local face to face meetings” South Asia

“More discussions on what operators are encountering” South East Asia

“Sharing of regular security incidents and network failure issues” East Asia

“I am happy to feed APNIC with IDS/IPS information. And shared it among the industries.” South East Asia

“For APNIC member, providing special centre and portal where threat intel are shared and member can aware to protect themselves with suitable solution.” South Asia

Working with government and the wider community

“MOU with educational institutions to develop or align existing teaching and learning materials. Accreditation of program so that students qualification are work ready.” Oceania

“Regularly conduct Internet security training for the customers. Liaison with local regulators and engage large service providers and start awareness on the Internet security, best practices to manage Internet security infrastructure, etc.” South Asia

“Conduct more training for staff government and private sector organizations so all are aware of the real security threats as the technologies are evolving” Oceania

“Cooperation with the ministry that has jurisdiction over communications, as it may be through the NIR of each country.” East Asia

“Increase engagement with governments to spread awareness of cybersecurity.” South East Asia

Tools or reports

“Apnic give their Members free DDOS Protection” South Asia

“APNIC and NIR need to work together to provide Anti DDOS that can be used together, so users don't have to invest expensively” South East Asia

“Developing open source tool to monitor end to end IT infrastructure and security issues.” South Asia

“A general analysis and report across all APNIC address space might highlight some general practices that aren't being undertaken very well at present (with the particular address space anonymised) but the results shared everywhere with tips on how to check for yourself (ROA and RPKI for instance).” Oceania

“I'm not sure if APNIC already have a security check and vulnerability list on certain make/model firmware etc...? And broadcast out monthly report to all groups?” Oceania

IPv4 Scarcity

As in previous years, the survey also asked about the challenges relating to the availability of IPv4 addresses, with a list of seven potential challenges for respondents to select from.

As in 2018 and 2020, the cost of buying IPv4 addresses, finding available IPv4 addresses and deployment of IPv6 remain the three most pressing issues, although the order of these has changed slightly.

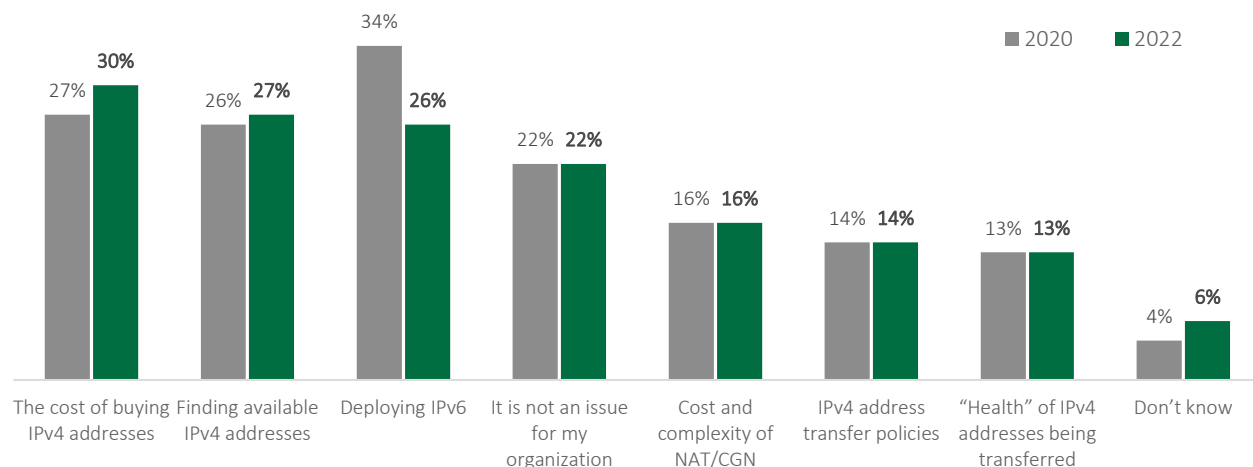
In 2020, deploying IPv6 was the main challenge for 34% of respondents, however this year, the cost of purchasing IPv4 is the biggest issue, with three in ten (30%) including cost in their top two challenges. Deploying IPv6 remains an issue for 26% of participants, with finding available IPv4 (26%) the third largest concern.

As in 2020, those in Oceania or from developing or developed economies are significantly more likely than other regions or LDEs to indicate that IPv4 availability is not an issue for their organization, at 38% and 24% respectively.

ISPs are significantly more likely than other organization types to say that the cost of IPv4 (37%) and finding available addresses (33%) are issues for them. For Members and Stakeholders in management roles the cost of addresses (38%) is their biggest challenge, while those in technical positions are more likely to say that deploying IPv6 is an issue for them, at 29%.

Thinking about the availability of IPv4 addresses, what are the MAIN challenges facing your organization?

(Members only: Select up to 2. Base n=1,061)



	East Asia	Oceania	SE Asia	South Asia	LDEs	Others
Sample size	168	206	287	334	302	693
The cost of buying IPv4 addresses	32%	22%	31%	33%	33%	29%
Finding available IPv4 addresses	22%	18%	30%	31%	30%	25%
Deploying IPv6	23%	19%	31%	26%	29%	24%
It is not an issue for my organization	18%	38%	18%	16%	16%	24%
Cost and complexity of NATs	18%	13%	14%	16%	15%	15%
IPv4 address transfer policies	17%	6%	15%	14%	18%	12%
"Health" of IPv4 addresses being transferred	13%	12%	13%	16%	13%	14%
Don't know	7%	7%	6%	5%	6%	6%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

IPv4 Historical Resources

Recently, the APNIC EC announced changes to APNIC’s fee structure, related to historical IPv4 resources that were delegated before to the establishment of APNIC. The changes are designed to improve the fairness of APNIC’s fee structure, and also to help identify unused resources and return them to the free pool of addresses for reallocation.

APNIC wanted to test Members, agreement that historical addresses should be subject to the same fees as current resources allocated by APNIC.

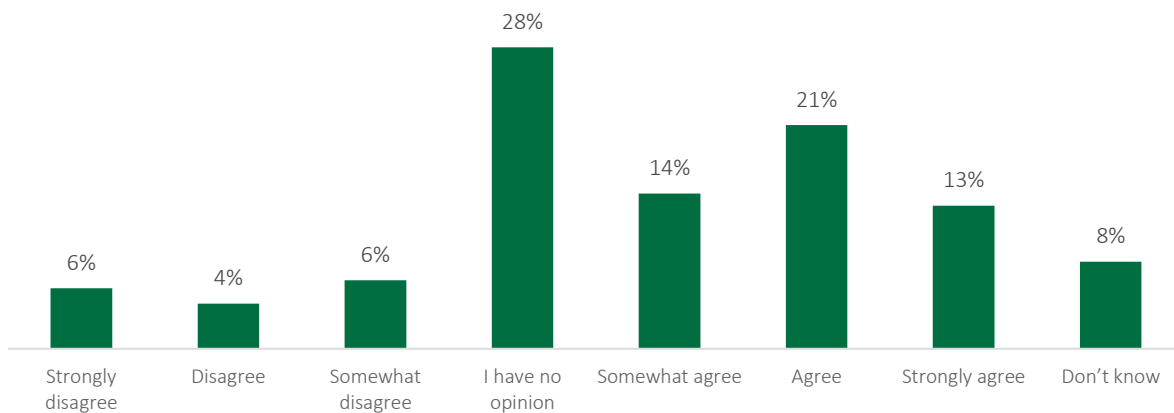
Overall, Members appear largely in favour of the changes, with 48% indicating some form of agreement that

historical addresses should be subject to the same fees, and only 16% disagreeing. Of note, 28% have no opinion, and a further 8% don’t know if they agree or not.

Members in Oceania (23%) and those in management positions (25%) are significantly more likely than other regions or roles to strongly agree that historical addresses should be treated the same as current resources.

How much do you agree that historical addresses should be subject to the same fees as current resources (that is, those resources allocated by APNIC)?

(Members only: n=1,061)



	Total	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	1,060	168	206	287	334	302	693
Strongly disagree	6%	2%	6%	5%	7%	8%	5%
Disagree	4%	8%	2%	4%	4%	4%	4%
Somewhat disagree	6%	8%	4%	6%	6%	5%	6%
I have no opinion	28%	33%	22%	29%	28%	29%	27%
Somewhat agree	14%	12%	12%	16%	14%	12%	15%
Agree	21%	20%	22%	22%	19%	22%	20%
Strongly agree	13%	8%	23%	10%	13%	13%	13%
Don't know	8%	9%	9%	7%	8%	7%	9%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total



Technology Adoption



More detailed information about the challenges organizations face in deploying IPv6, as well as the activities APNIC could offer that might encourage IPv6 adoption across the region was canvassed in the survey.

This section also tested deployment of Resource Public Key Infrastructure (RPKI) or Route Origin Validation (ROV) among Members, and the biggest barriers facing organizations in implementation of RPKI or ROV. It also highlights what APNIC can do to assist with implementation of these technologies for routing security.

IPv6 Deployment

To understand the ongoing issues preventing organizations deploying IPv6 across the region, the survey asked about the barriers to implementing IPv6.

As a result of the feedback in the qualitative Interviews, the wording of the question was changed this year from 2020 and 2018, and two of the options were also worded slightly differently, so direct comparison cannot be made to previous surveys.

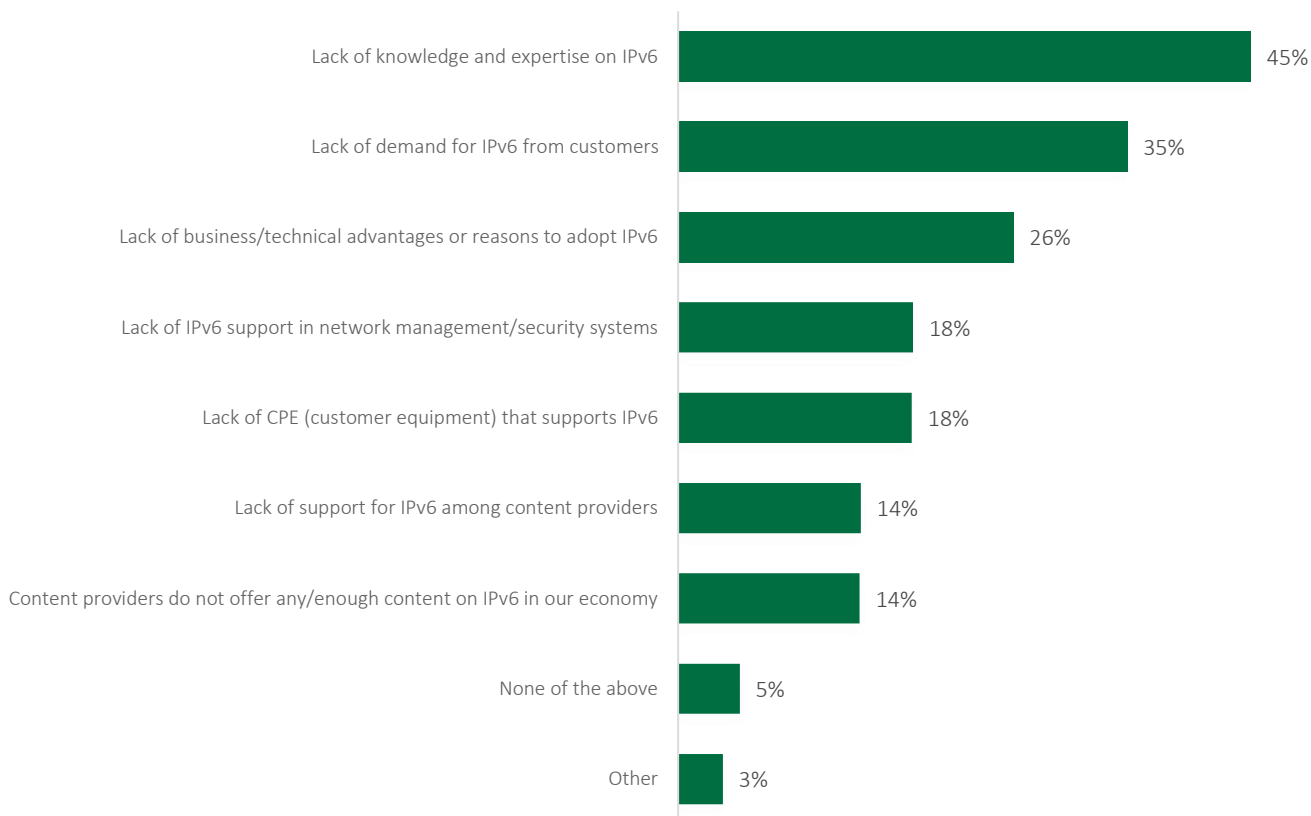
Overall, the main issue preventing deployment of IPv6 in the region is a lack of knowledge and expertise, with 45% indicating this is a barrier to implementation. Little or no customer demand for IPv6 (35%) or a perceived lack of business or technical advantages or reasons to adopt IPv6 (26%) round out the three

biggest issues in IPv6 deployment.

Although not directly comparable, it is interesting to note that in 2020, 53% of respondents said that the lack of customer demand was preventing deployment, while only 31% cited a lack of knowledge and expertise on IPv6. This should be monitored in future to assess if these current results remain consistent.

Lack of support in network management and security systems and a lack of CPE that supports IPv6 (both 18%), and a lack of IPv6-enabled content in the economy or a lack of support among content providers (both 14%), are other reasons preventing implementation.

Thinking about IPv6, in your opinion, what are the main issues preventing IPv6 deployment across the region?
(All respondents : n= 1,060)



When the issues preventing IPv6 deployment are examined by region and economic development status, there are some differences.

Respondents in South Asia (54%) are significantly more likely than others to indicate a lack of knowledge and expertise on IPv6 is the biggest barrier to deployment. Those in East Asia (32%), however, are significantly less likely to cite lack of expertise as the main issue in IPv6 deployment.

Similarly, LDEs are much more likely to identify a lack of skills and expertise as the main issue in deployment of IPv6 than other economy types. This reflects the feedback from the qualitative Interviews, where smaller economies and those in LDEs mentioned that transitioning to IPv6 was a challenge because of a lack of skilled resources.

Respondents from Oceania (37%) or in developed or developing economies (30%) are significantly more likely than others to say that there are no advantages or good business or technical reasons to adopt IPv6.

There was little difference in opinions between organization type or size, although ISPs were more likely than others to indicate that content providers in their economy do not offer any or enough IPv6 enabled content.

Thinking about IPv6, in your opinion, what are the main issues preventing IPv6 deployment across the region?

(All : n= 1,061)

	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample size	168	206	287	334	302	693
Lack of knowledge and expertise on IPv6	32%	43%	43%	54%	56%	39%
Lack of demand for IPv6 from customers	33%	36%	39%	31%	33%	35%
Lack of business/technical advantages/reasons to adopt IPv6	33%	37%	26%	17%	17%	30%
Lack of IPv6 support in network management/security systems	20%	17%	16%	21%	22%	18%
Lack of CPE (customer equipment) that supports IPv6	17%	14%	14%	25%	22%	16%
Lack of support for IPv6 among content providers	20%	16%	14%	11%	12%	15%
Content providers do not offer any/enough content on IPv6 in our economy	19%	4%	12%	19%	15%	14%
None of the above	2%	5%	7%	4%	3%	6%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

Encouraging IPv6 Deployment

As in 2020, the survey next asked the most important activities APNIC could undertake to encourage greater IPv6 adoption in the region.

Perhaps surprisingly, fewer selected basic and advanced training this year, with almost three in ten (29%) indicating this was the most important activity, compared to 36% in 2020. This is despite many calls for training on IPv6 deployment among the verbatim comments.

Slightly more respondents indicate that promotion of IPv6 to hardware, software and content providers is important this year, with just over a quarter (up 5% from 21%) including this among the main activities that would encourage IPv6 adoption.

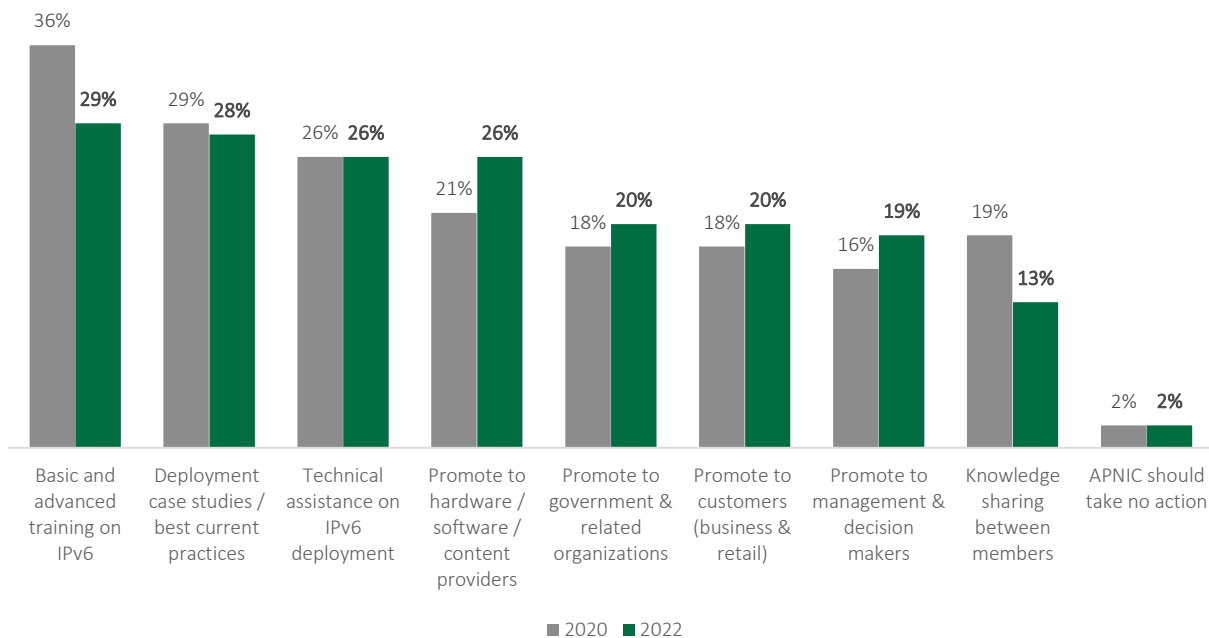
This is consistent with the qualitative Interviews, where

there were more comments that content providers and/or CDNs are not motivated to provide content via IPv6. They suggested that “APNIC will need to create more awareness on these areas to try to encourage the vendors to move on to supporting IPv6 as part of the standard features ...”. In the verbatim comments in the survey, there was also mention that “some large content provider should take the plunge and offer content only on IPv6” as a way to encourage greater uptake.

Case studies, best current practices and technical assistance from APNIC are the other primary activities respondents feel would assist to encourage IPv6 adoption.

Which of the following APNIC activities do you believe are the most important to encouraging IPv6 adoption in the APNIC region?

(Members only: Select up to 2. Base n= 1,060)



While there is little differences between regions and economies about the activities APNIC could consider to encourage adoption of IPv6 in the region, those in East Asia (30%) are more likely to support promotion to government and other related organizations than their regional counterparts.

LDEs are also significantly more likely than other economy types to believe that facilitating knowledge sharing between Member organizations on IPv6 deployment experiences is most important to encouraging IPv6 adoption.

There were no differences in the opinions of different organization types or roles.

Which of the following APNIC activities do you believe are the most important to encouraging IPv6 adoption in the APNIC region?

(Members only. Select up to 2. Base n= 1,060)

	East Asia	Oceania	SE Asia	South Asia	LDEs	Other
Sample size	168	206	287	334	302	693
Providing basic and advanced training on IPv6	21%	31%	32%	31%	32%	28%
Sharing deployment case studies and best current practices about IPv6	34%	22%	28%	28%	24%	29%
Providing technical assistance on IPv6 deployment	26%	25%	28%	27%	29%	26%
Promoting IPv6 to hardware, software and/or content providers	24%	24%	23%	30%	30%	24%
Promoting IPv6 to government and related organizations	30%	20%	17%	19%	19%	21%
Promoting IPv6 to customers (business and retail)	21%	19%	20%	20%	17%	21%
Promoting IPv6 to management and/or decision makers	15%	17%	21%	19%	20%	18%
Facilitating knowledge sharing between Member organizations on IPv6 deployment experiences	12%	14%	15%	12%	19%	11%
APNIC should take no action to promote or assist with the deployment of IPv6	2%	3%	1%	2%	1%	3%
Other	2%	3%	2%	0%	1%	2%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

RPKI/ROV

In 2022, Members and Stakeholders were asked whether their organization had already deployed, or is ready for deployment of RPKI or ROV.

Almost one-quarter (23%) of respondents indicated their organization had already deployed RPKI and ROV, with a fairly even split across Members and Stakeholders. At 29%, respondents in South Asia were significantly more likely to have already deployed RPKI and ROV, while those in Oceania were less likely to have deployed, at 16%.

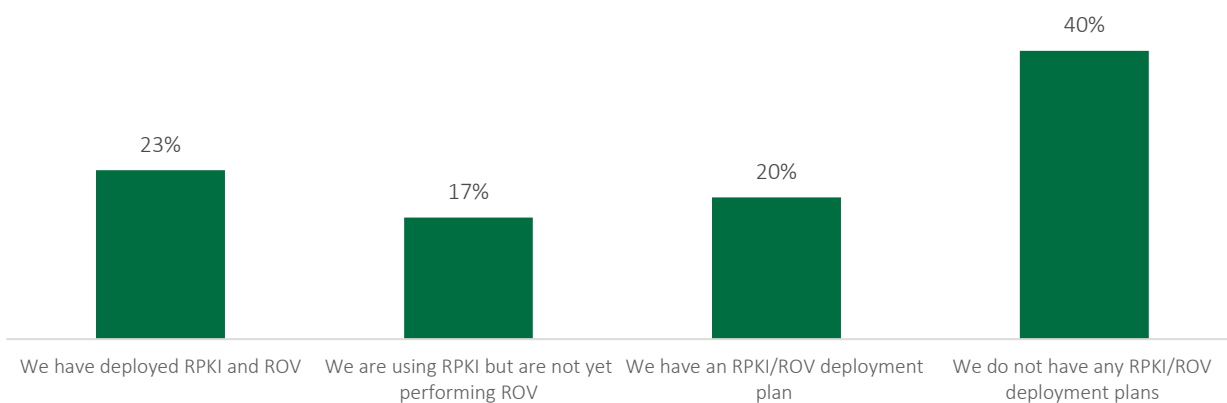
A further 17% of respondents indicated their

organization was already using RPKI, but not yet performing ROV, while 20% have an RPKI/ROV deployment plan.

In contrast, 40% of both Members and Stakeholders stated their organization did not have any RPKI/ROV deployment plans, with 48% of Oceania respondents and 46% of South East Asia respondents being significantly more likely to have selected this category. Further, respondents in South Asia were significantly less likely to have chosen this option, at 33%.

Has your organization already deployed or are you ready for deployment of RPKI or ROV?

(All respondents. Base n= 1,310)



	Member	Stakeholder	East Asia	Oceania	South East Asia	South Asia	LDE	Others
Sample Size	1,061	249	228	228	370	400	345	881
We have deployed RPKI and ROV	23%	25%	23%	16%	22%	29%	27%	22%
We are using RPKI but are not yet performing ROV	17%	15%	19%	21%	14%	15%	14%	17%
We have an RPKI/ROV deployment plan	20%	20%	21%	16%	17%	23%	24%	18%
We do not have any RPKI/ROV deployment plans	40%	40%	37%	48%	46%	33%	36%	43%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies in the APNIC region

Significantly higher / lower than total

Survey respondents that had not fully deployed RPKI/ROV were then asked what was preventing their organization from doing this.

At 38% across Members and Stakeholders, the main reason given for not deploying RPKI/ROV was that their organization did not have the required knowledge or expertise. This proportion was 45% for respondents in LDEs, compared with 36% for those in Other economies.

The second most frequent reason for non-deployment was not being aware of other networks deploying RPKI/ROV, at 18%. In both South Asia and South East Asia, 23% of respondents stated this was a reason, around twice as many respondents as in Oceania (12%) and East Asia (11%).

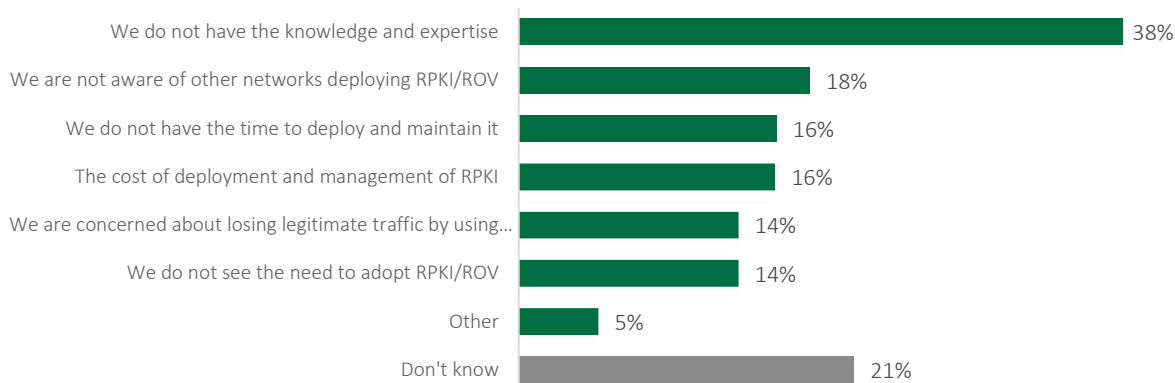
Not having time to deploy and maintain RPKI/ROV was a reason provided by 16 of respondents, including 23% in Oceania, compared with 9% in South Asia.

RPKI deployment and management costs was a non-deployment reason stated by 16% of respondents, including 22% in East Asia, compared with 7% in Oceania.

Furthermore, 21% of respondents did not know what was preventing their organization from deploying RPKI/ROV.

What is preventing your organization from deploying RPKI/ROV?

(All respondents. Base n= 1,004)



	Member	Stakeholder	East Asia	Oceania	South East Asia	South Asia	LDE	Others
Sample Size	821	188	228	228	370	400	345	881
We do not have the knowledge and expertise	36%	44%	34%	32%	41%	43%	45%	36%
Don't know	22%	18%	21%	22%	20%	21%	23%	20%
We are not aware of other networks deploying RPKI/ROV	18%	20%	11%	12%	23%	23%	23%	17%
We do not have the time to deploy and maintain it	17%	13%	17%	23%	17%	9%	10%	18%
The cost of deployment and management of RPKI	15%	22%	22%	7%	18%	15%	14%	16%
We are concerned about losing legitimate traffic by using RPKI/ROV	14%	14%	15%	7%	13%	16%	17%	12%
We do not see the need to adopt RPKI/ROV	13%	15%	13%	14%	12%	15%	10%	15%
Other	5%	2%	4%	12%	3%	2%	2%	6%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significantly higher / lower than total



Training and Internet Development Priorities

● ● ●

Training is a valuable component of APNIC services, and this repeatedly praised in the Interviews held with Members and Stakeholders before the quantitative survey as one of the best aspects of APNIC's service offering.

With all training having to be conducted online as a result of COVID-19, the survey examined training attendance, seeking to understand the primary reasons for not attending any training, and ideas for training topics that APNIC could make available that would be useful.

Expanding on a question asked in the 2020 APNIC Survey, and arising from discussions with Members in the qualitative Interviews, the final section of the survey asked participants where APNIC could direct any additional resources to strengthen or improve Internet development. There were four broad categories for participants to rank the most important areas for APNIC to focus on, followed by more specific activities within each category for investment or improvement.

Training Attendance

In 2022, almost three out of 10 (29%) respondents stated they had not attended APNIC Academy training courses because they were not aware of the opportunities that were available. Pleasingly though, this was down from 40% of respondents in 2020. Further, only 21% of respondents in Oceania were unaware of available training, compared with 33% in South East Asia, and 32% in South Asia.

Approximately one-quarter (26%) of respondents indicated they did not have the time to attend training, with this figure at 15% for those in LDEs, compared with 30% for respondents in Other economies. Further, 36%

of respondents in East Asia stated they had time constraints, compared with 12% in South Asia.

A preference for face-to-face training, which has not been available, was stated by 24% of respondents as a reason for not attending any APNIC courses. This figure was 40% for LDE respondents, and 18% for those in Other economies.

Training not offered in the local language prevented attendance for 22% of respondents in LDEs, and 26% in East Asia.

Earlier, you indicated you had not attended any APNIC Academy training in the past two years. Can you tell us why you haven't attended any training?

(All respondents: n=646)



	Member	Stakeholder	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	493	88	137	117	165	180	163	436
I didn't know about the training	28%	30%	30%	21%	33%	32%	31%	29%
I don't have time	26%	26%	36%	33%	26%	12%	15%	30%
I prefer face-to-face training	25%	23%	15%	19%	19%	39%	40%	18%
The courses are not suited to my role/job	14%	18%	18%	17%	15%	9%	7%	17%
Not offered in my local language	16%	15%	26%	1%	12%	19%	22%	13%
I couldn't get management approval	10%	13%	7%	8%	15%	9%	11%	10%
APNIC Academy training courses are not certified	7%	9%	4%	4%	8%	7%	9%	6%
The topics are too basic	5%	2%	5%	6%	4%	4%	6%	4%
Other	8%	2%	3%	12%	8%	7%	6%	8%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significantly higher / lower than total



“Server Administration, Security Operation Centre (SoC) Management, Network Operation Centre (NoC) Management, Data Science for Network monitoring”

South Asia

Are there any training topics you would like APNIC to make available?

As would be expected given the Internet-related challenges, the majority of comments about training topics that would interest APNIC Members and Stakeholders were related to IPv6 deployment and Internet security.

Many called for more advanced training, saying “advanced IPv6 deployment and security configurations” and “advanced Linux” would be useful.

Others included multiple topics for APNIC to consider, with comments that they want “SDN technologies, datacentre technologies, enterprise technologies, security trainings, load balancer trainings. Training on automation like python, ansible, json etc.”.

There were also comments that APNIC is already providing quality content, or that they didn’t know what other topics could be made available, saying “I already see great content on APNIC academy, so not at present that I can think of” or that they “can’t think of any at the moment.”

“Transition to / deploying IPv6 basics, to advance step by step guide” (Oceania)

“Internet security and how to promote IPv6 Adoption .” (South Asia)

“Infrastructural topics are crucial for countries like us. We need more knowledge and more training on the topics related to the efficiency and enhancement of our infrastructure such as the use of root servers, advanced mediums, and advanced tools to boost the performance of our infrastructure with minimum cost.” (South Asia)

“I’m hoping that recorded sessions for previous trainings are available on top of live attendance on the same training. Sometimes, a refresher course helps to revitalize the ideas/technology.” (South East Asia)

“Topics for IPv6, DDOS Attacks, and Increasing Information Security.” (East Asia)

Internet Development Priorities

APNIC Members and Stakeholders were asked what they considered to be the most important areas to focus on for Internet development.

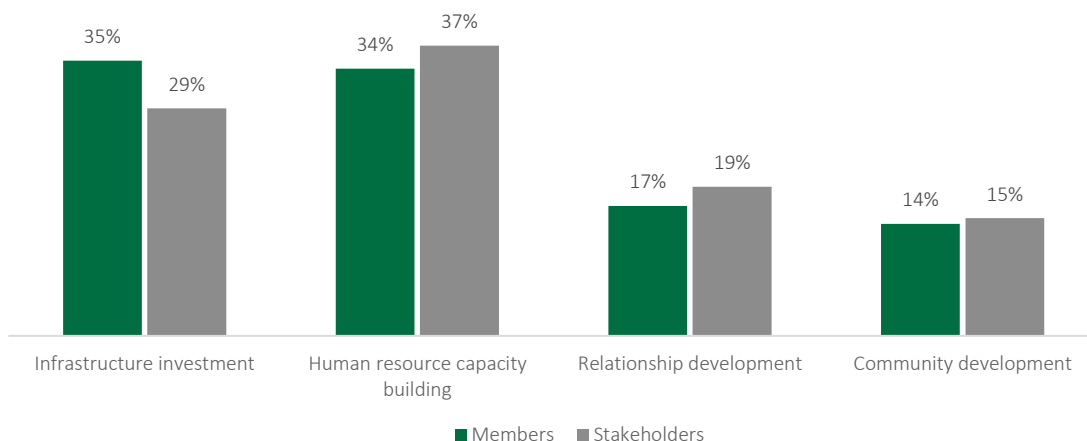
At 35%, infrastructure investment was selected by Members as the main area APNIC should focus its development activities, compared with 29% of Stakeholders. These percentages were relatively similar across regions and economies.

Similarly, 34% of Members stated that human resource capacity building should be prioritized, compared with 37% of Stakeholders. Again, these percentages were relatively similar across regions and economies.

Around half as many respondents chose relationship development as an area the APNIC Foundation should focus on, at 17% for Members, and 19% for Stakeholders. This was followed by community development, at 14% and 15%, respectively, across Members and Stakeholders.

Through the APNIC Foundation, APNIC has been able to expand Internet development activities in the region. In the next two years, what would you say is the MOST important area for APNIC to focus its development activities?

(All respondents. Base n= 1,623)



	Member	Stakeholder	East Asia	Oceania	South East Asia	South Asia	LDE	Others
Sample Size	1,061	312	269	275	454	486	395	1,089
Infrastructure investment	35%	29%	38%	36%	35%	33%	34%	36%
Human resource capacity building	34%	37%	29%	33%	35%	37%	36%	33%
Relationship development	17%	19%	15%	18%	19%	15%	17%	17%
Community development	14%	15%	17%	13%	11%	15%	13%	14%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significance tests not performed on ranking questions

Infrastructure Development

For respondents that selected infrastructure development as an important area for Internet development, almost half (46%) of respondents selected development support for backbone networks (undersea and/or satellite) as the main priority. This included 44% of Members, and 50% of Stakeholders. By region, 50% of applicable respondents in South East Asia selected this as a priority, compared with 40% in South Asia.

Peering was selected by 45% of applicable Members, and 40% of Stakeholders as a main priority area. This included 50% in South East Asia, and 39% in South Asia, with a relatively even split across economies.

While 37% of applicable respondents stated neutral

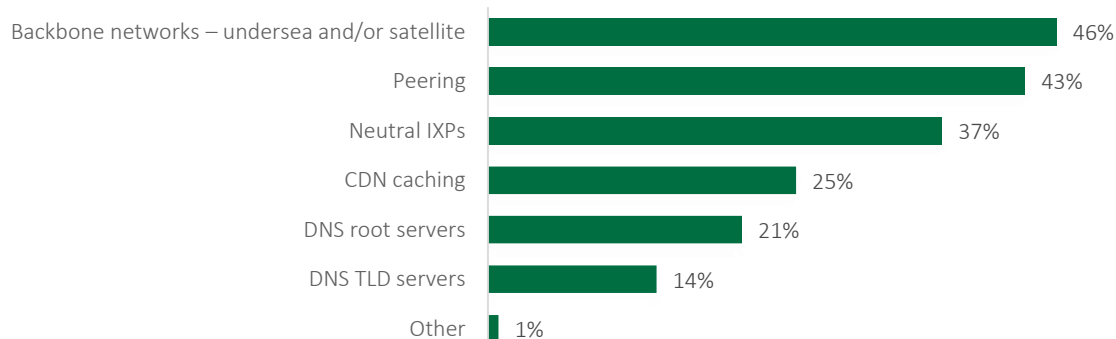
IXPs as a priority, with an even split across Members and Stakeholders, there were some significant differences across regions and economies.

Respondents in Oceania were significantly more likely to choose neutral IXPs as a development priority, at 47%. In contrast, respondents in South Asia (and those in LDEs) were significantly less likely to choose this option, at 28%.

Applicable respondents in South Asia, and LDEs, were significantly more likely to choose CDN caching as a priority, at 35% and 37%, respectively. Those in Other economies were less likely to choose CDN caching as a priority, at 22%.

You ranked infrastructure development as an important area for Internet development. What aspects of infrastructure development support should be the main priority?

(All respondents: n=940)



	Member	Stakeholder	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	637	302	161	156	267	280	230	634
Backbone networks – undersea and/or satellite	44%	50%	42%	48%	50%	40%	42%	46%
Peering	45%	40%	47%	41%	50%	39%	43%	45%
Neutral IXPs	37%	36%	43%	47%	33%	28%	28%	39%
CDN caching	27%	20%	22%	17%	25%	35%	37%	22%
DNS root servers	19%	24%	21%	21%	18%	23%	18%	21%
DNS TLD servers	13%	15%	11%	13%	10%	18%	19%	11%
Other	1%	1%	1%	1%	1%	1%	0%	1%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significantly higher / lower than total

Human Resource Capacity Building

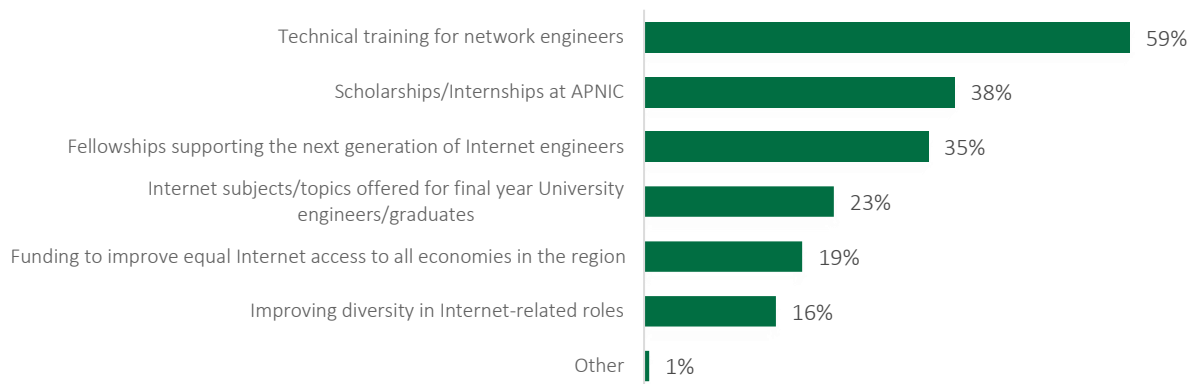
For respondents that ranked human resource capacity building as an Internet development priority, almost three out of five (59%) selected technical training for network engineers as the main area. This high percentage was consistent across Members and Stakeholders, and across regions and economies.

Although 38% of applicable respondents selected

scholarships/internships at APNIC as a priority, there were some significant differences across segments. For example, those in South Asia and LDEs were significantly more likely to select this as a development priority, at 46% and 48%, respectively. In contrast, applicable respondents in East Asia were less likely to choose this, at 27%.

You ranked human resource capacity building as an important area for Internet development. What aspects of capacity building should be the main priority?

(All respondents: n=966)



	Member	Stakeholder	East Asia	Oceania	South East Asia	South Asia	LDE	Others
Sample Size	614	351	156	162	268	301	246	641
Technical training for network engineers	60%	57%	59%	60%	58%	58%	61%	58%
Scholarships/Internships at APNIC	36%	42%	27%	30%	44%	46%	48%	36%
Fellowships supporting the next generation of Internet engineers	35%	34%	40%	34%	31%	32%	33%	34%
Internet subjects/topics offered for final year University engineers/graduates	23%	24%	24%	28%	21%	22%	19%	25%
Funding to improve equal Internet access to all economies in the region	18%	22%	14%	17%	23%	21%	20%	19%
Improving diversity in Internet-related roles	17%	15%	23%	19%	15%	13%	13%	18%
Other	1%	1%	0%	1%	0%	1%	0%	1%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significantly higher / lower than total

Relationship Development

Many respondents chose relationship development as a key area for Internet development. Of these, 63% chose education and training for government regulators about the Internet ecosystem as the main priority, including 60% of Members, and 70% of Stakeholders.

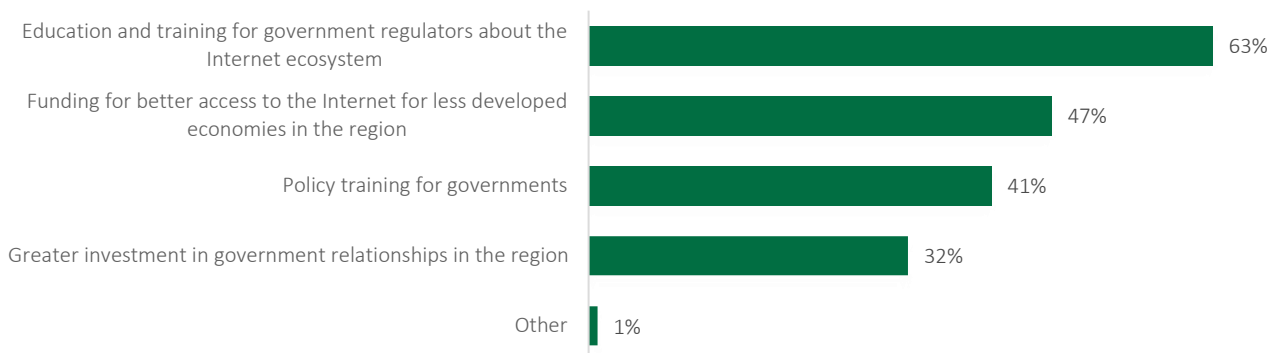
Almost half (47%) of applicable respondents selected funding for better access to the Internet for LDEs in the region as a priority, including 55% for those in LDEs.

However, respondents in Other economies were significantly less likely to have selected this as a priority, at 42%.

Policy training for governments and greater investment in government relationships in the region were the main two priority areas, at 41% and 32%, respectively.

You ranked relationship development as an important area for Internet development. What aspects of relationship development should be the main priority?

(All respondents: n=674)



	Member	Stakeholder	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	442	233	113	132	197	181	157	466
Education and training for government regulators about the Internet ecosystem	60%	70%	68%	61%	59%	65%	62%	63%
Funding for better access to the Internet for less developed economies in the region	46%	48%	35%	40%	53%	48%	55%	42%
Policy training for governments	40%	43%	46%	41%	41%	43%	43%	42%
Greater investment in government relationships in the region	34%	29%	27%	33%	37%	28%	27%	34%
Other	1%	1%	0%	2%	1%	1%	1%	1%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significantly higher / lower than total

Community Development

Among respondents that identified community development as an important area for Internet development, 57% selected NOGs, with a fairly even split across Members and Stakeholders, and across regions and economies.

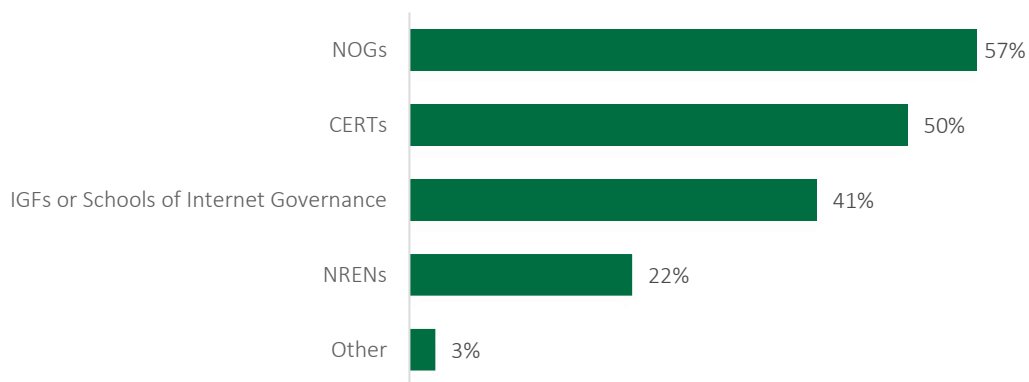
Further, half (50%) of respondents selected CERTs as a priority area. However, at 39%, applicable respondents in LDEs were significantly less likely to choose this as a priority, while those in Other economies were more

likely, at 54%.

Internet Government Forums (IGFs) or Schools of Internet Governance were considered a priority by 41% of applicable respondents, including 39% of Members, and 44% of Stakeholders. However, those in East Asia were significantly less likely to consider this a priority, at 25%, along with respondents in Other economies, at 36%

You ranked community development as an important area for Internet development. What aspects of community development support should be the main priority?

(All respondents: n=662)



	Member	Stakeholder	East Asia	Oceania	SE Asia	South Asia	LDE	Others
Sample Size	427	235	107	100	175	209	155	436
NOGs	58%	54%	64%	60%	54%	57%	63%	56%
CERTs	51%	48%	49%	52%	55%	45%	39%	54%
IGFs or Schools of Internet Governance	39%	44%	25%	36%	45%	44%	48%	36%
NRENs	21%	24%	22%	13%	23%	24%	28%	20%
Other	3%	3%	3%	4%	2%	2%	2%	3%

Note: Segments exclude respondents from non-APNIC regions included in the 'Total'; 'Other' segment includes developed and developing economies

Significantly higher / lower than total

Appendix

APNIC Definitions of Sub-regions

East Asia	
CN	China
KP	Democratic People's Republic of Korea
HK	Hong Kong Special Administrative Region of China
JP	Japan
KR	Republic of Korea
MN	Mongolia
MO	Macao Special Administrative Region of China
TW	Taiwan

South Asia	
AF	Afghanistan
BD	Bangladesh
BT	Bhutan
IN	India
IO	British Indian Ocean Territory
LK	Sri Lanka
MV	Maldives
NP	Nepal
PK	Pakistan

South-East Asia	
BN	Brunei Darussalam
CX	Christmas Island
ID	Indonesia
KH	Cambodia
LA	Lao People's Democratic Republic
MM	Myanmar
MY	Malaysia
PH	Philippines
SG	Singapore
TH	Thailand
TL	Timor-Leste
VN	Viet Nam

Oceania	
AS	American Samoa
AU	Australia
CK	Cook Islands
FJ	Fiji
PF	French Polynesia
FM	Federated States of Micronesia
GU	Guam
KI	Kiribati
MH	Marshall Islands
MP	Northern Mariana Islands
NC	New Caledonia
NF	Norfolk Island
NR	Nauru
NU	Niue
NZ	New Zealand
PF	French Polynesia
PG	Papua New Guinea
PW	Palau
SB	Solomon Islands
TK	Tokelau
TO	Tonga
TV	Tuvalu
VU	Vanuatu
WF	Wallis & Fortuna Islands
WS	Samoa

Definitions of Economies*

Developed/Developing Economies	
AS	American Samoa
AU	Australia
IO	British Indian Ocean Territory
BN	Brunei Darussalam
CN	China
CX	Christmas Island
CC	Cocos and Keeling Islands
CK	Cook Islands
KP	Democratic People's Republic of Korea
FJ	Fiji
PF	French Polynesia
TF	French Southern Territories
GU	Guam
HK	Hong Kong Special Administrative Region of China
IN	India
ID	Indonesia
JP	Japan
MO	Macao Special Administrative Region of China
MY	Malaysia
MV	Maldives
MH	Marshall Islands
FM	Federated States of Micronesia
MN	Mongolia
NR	Nauru
NC	New Caledonia
NZ	New Zealand
NU	Niue
NF	Norfolk Island
MP	Northern Mariana Islands
PK	Pakistan
PW	Palau
PG	Papua New Guinea
PH	Philippines
PN	Pitcairn
KR	Republic of Korea
WS	Samoa
SG	Singapore
LK	Sri Lanka
TW	Taiwan
TH	Thailand
TK	Tokelau
TO	Tonga
VN	Viet Nam
WF	Wallis and Fortuna Islands

Least Developed Economies	
AF	Afghanistan
BD	Bangladesh
BT	Bhutan
KH	Cambodia
KI	Kiribati
LA	Lao People's Democratic Republic
MM	Myanmar
NP	Nepal
SB	Solomon Islands
TL	Timor-Leste
TV	Tuvalu
VU	Vanuatu

*United Nations Classifications of Economies can be found at <http://unstats.un.org/unsd/methods/m49/m49regin.htm>

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 organizations understand their value proposition - what is important to respondents, how the organization 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.

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ACKNOWLEDGEMENTS

In conclusion, we would like to take the opportunity to thank all respondents for participating in the 2022 APNIC Survey. Your input is extremely valuable.

The robust sample size of 1,622 provides APNIC with clear direction on the preferences and opinions of the Internet community.

The 2022 Survey highlighted many of the challenges facing the Internet community, particularly after two years of the COVID-19 global pandemic. It also provides the APNIC EC and Secretariat with insights and information to continue to assist the Internet community in providing a global, open, stable and secure Internet in the Asia Pacific region.

We trust this information forms a solid basis upon which the APNIC EC and Secretariat 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.



APNIC

2022 Member & Stakeholder Survey
Results

survey matters.

 **APNIC**

Methodology



Consultations



2022 Interview Locations	
Australia	Macau Special Administrative Region of China
Bangladesh	Nepal
Bhutan	New Zealand
Cambodia	Pakistan
China	Papua New Guinea
Fiji	Philippines
Hong Kong Special Administrative Region of China	Republic of Korea
India	Sri Lanka
Indonesia	Taiwan
Japan	Thailand
Kiribati	Vanuatu
Malaysia	Viet Nam
Mongolia	

- A total of 37 IDIs were conducted spanning 25 economies.
- A majority of the interviews were conducted with APNIC Members or Account Holders
- Six conducted with Stakeholders within the region.
- All seven of the APNIC NIR Members were consulted.

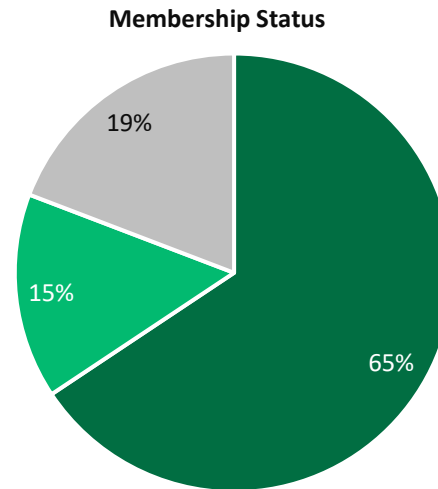
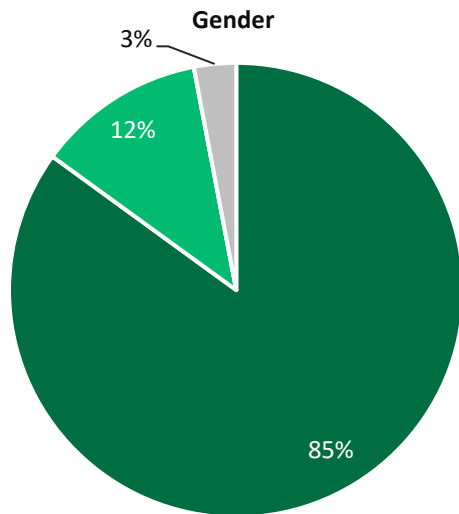
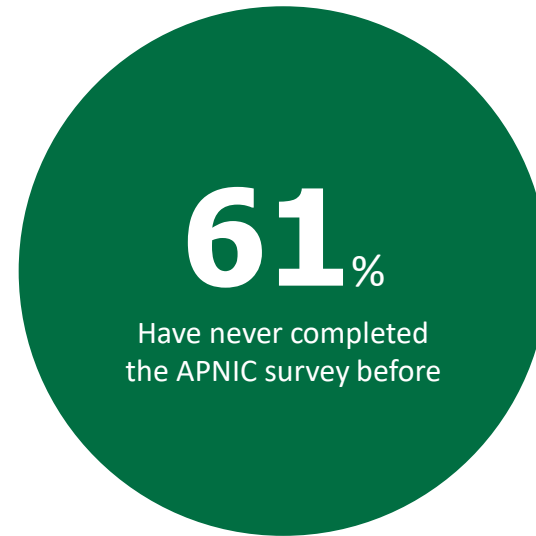
Key Interview Findings

- COVID-19 affected demand, supply chains and workforce
- Internet security, and deploying IPv6 were the major challenges mentioned
- Online meetings, training, conferences, and other forums are no substitute for the “real thing”.
- APNIC is consistently described as being highly regarded, trusted, reliable, and professional.
- Equal access to the Internet for small and LDE, and educating the ‘next generation’ about the Internet are important issues

Quantitative Sample



Region	Count	%
East Asia	269	17%
Oceania	275	17%
South East Asia	454	28%
South Asia	486	30%
Non-APNIC Region	137	8%
Total	1,621	100%



■ Male ■ Female ■ Other ■ Prefer not to say

■ APNIC Member ■ Member of NIR in APNIC Region ■ Other Stakeholder

Key Findings





1 Members' ratings of the quality and value of APNIC services and membership have improved

2 COVID-19 has had a significant impact on organizations, although confidence about the future is high

3 Despite lower usage of almost all APNIC's services, satisfaction with these has been maintained

4 Lack of skilled Internet engineers and Internet security are the biggest challenges

5 Increased security-focused training courses, collaboration with others, and maintaining a security threat intelligence sharing service are the best ways APNIC can assist

6 Investment in infrastructure and human resource capacity building are the priority areas for Internet development in the region

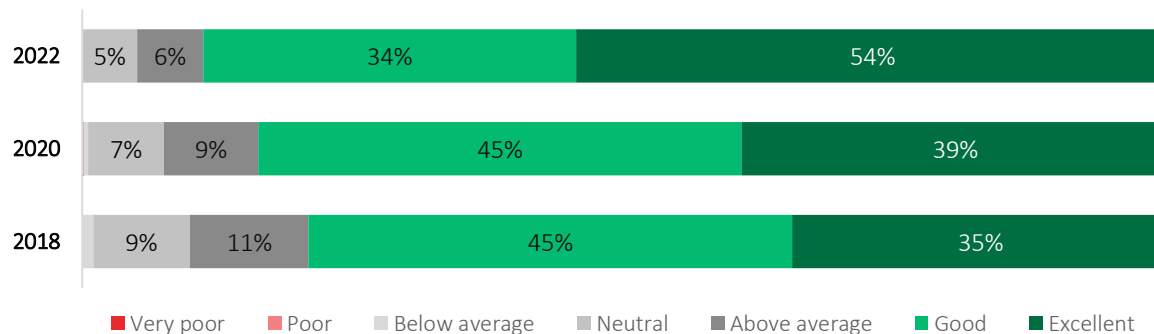
Results



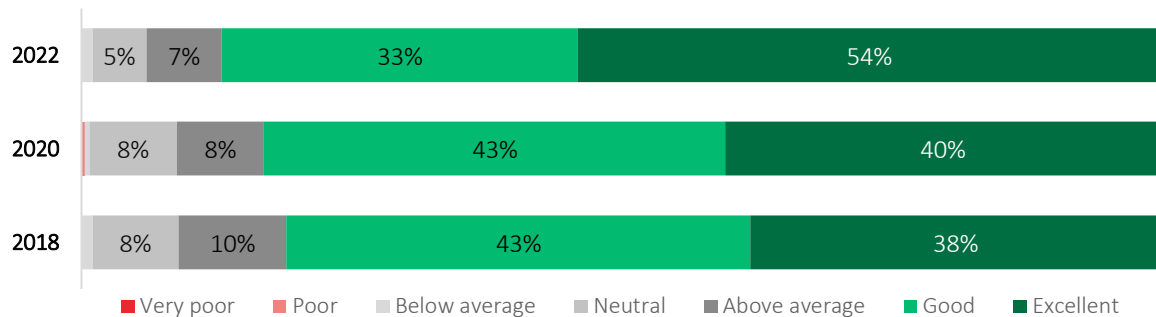


Service Satisfaction

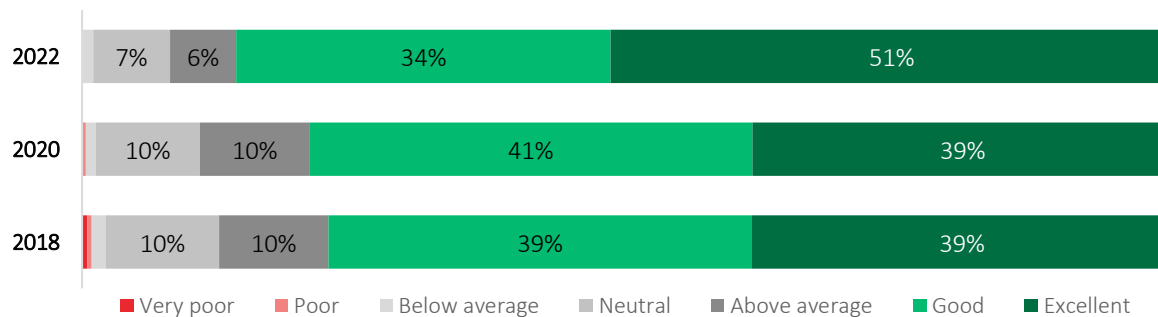
Quality of services



Value of services



Value of membership



Thinking about APNIC overall, how would you rate:

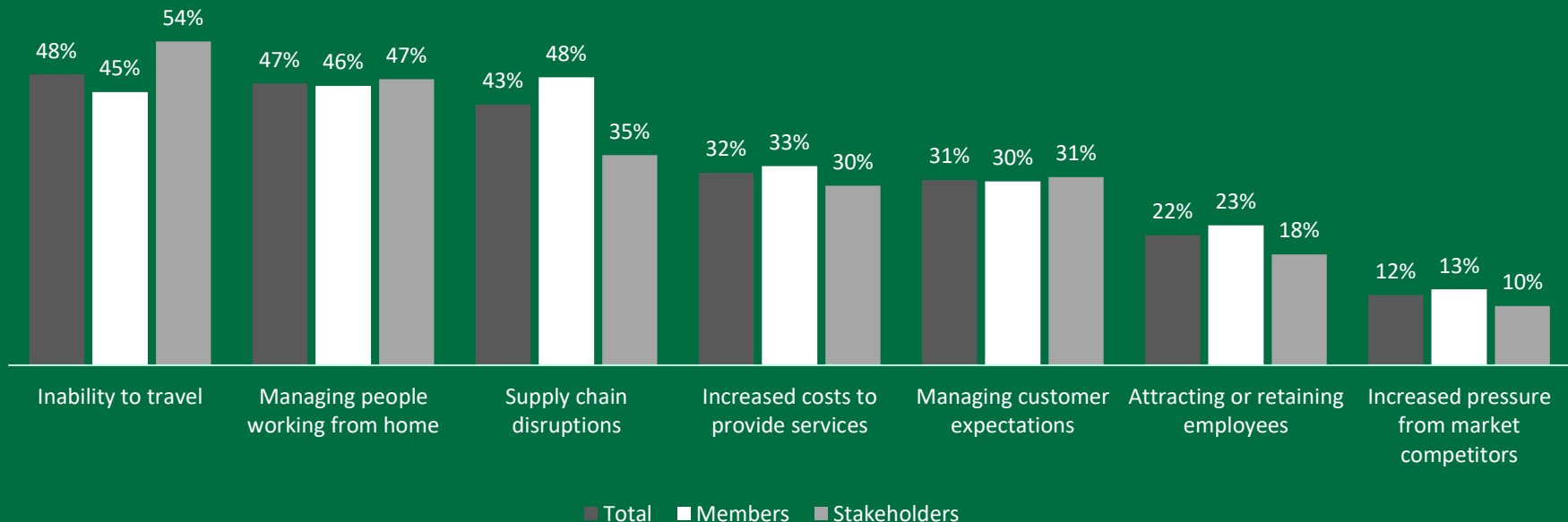
Impacts of COVID-19

49%

of respondents say demand for services **increased**

30%

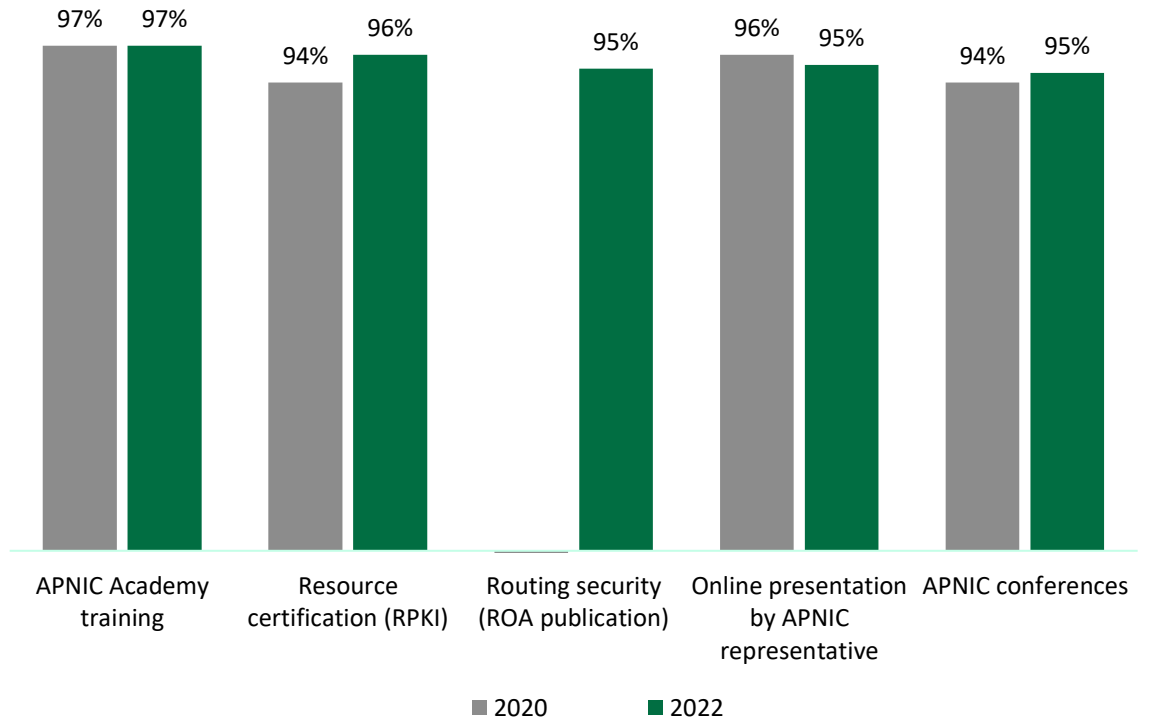
of respondents say demand for services **decreased**



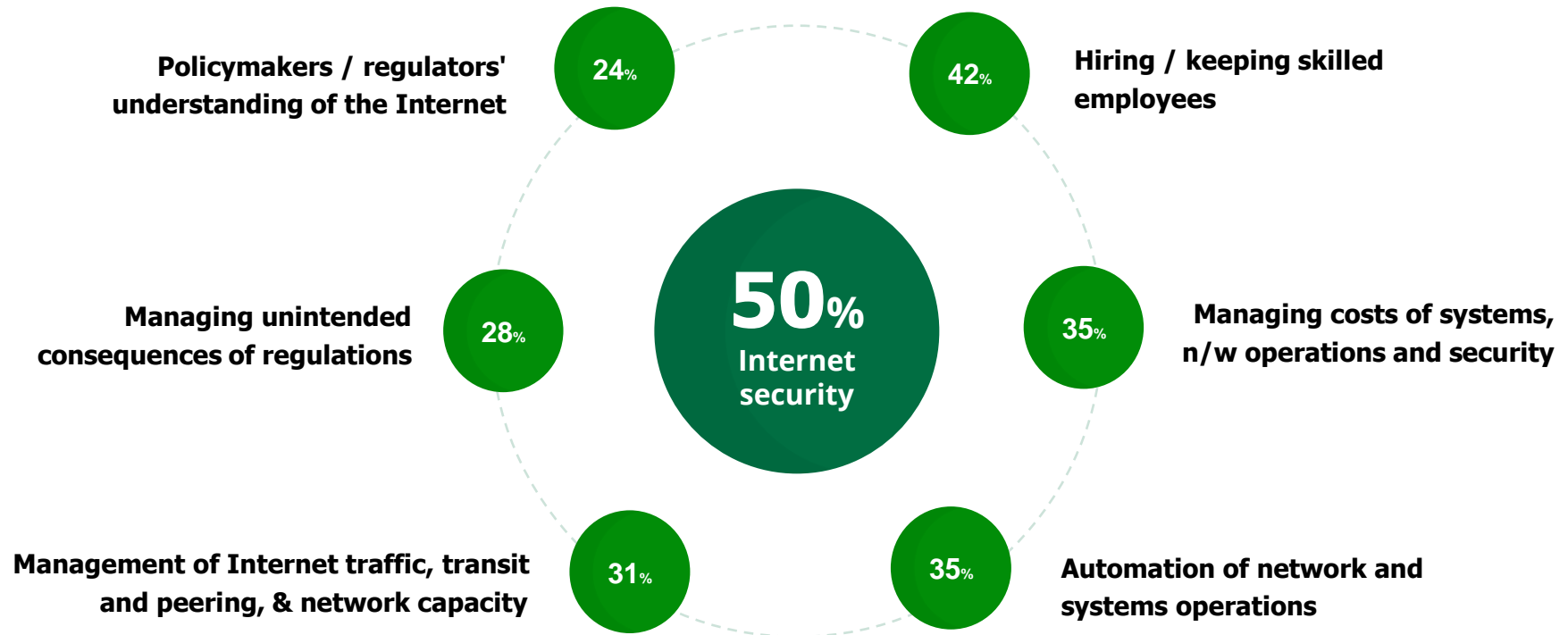
Thinking about the impacts of COVID-19, which of the following had the MOST impact on your organisation?

Top rated APNIC Services

Despite lower usage across some services due to COVID-19, satisfaction remains high



Biggest strategic and operational challenges



How can APNIC Help?

Overwhelmingly Members talked about continued provision of training and education as the best form of assistance



Training

35% mentioned training, including advanced training in IPv6

Security

8% mentioned Internet security training, including how to mitigate against attacks

Case studies

11% want case studies, best practice videos and blogs

Awareness

6% called for better education / awareness to governments about the Internet

Internet Development Priorities for Investment

Investment in internet infrastructure, particularly in backbone networks or undersea cables is important to many.

Technical training for new or emerging network engineers is also important to Members



35%

Infrastructure Investment

Of those, 46% want to see investment in backbone networks (undersea/satellite), while 43% prioritise peering, and 37% neutral IXPs



34%

Human Resource Capacity Building

Investment in more technical training for network engineers is the priority for 59% of Members. Others would prefer scholarships or internships at APNIC (38%) or fellowships for the next generation of network engineers (35%)



Conclusion



- In a difficult two years, Members and Stakeholders satisfaction with the quality and value of services remains very high
- Members challenges have become more complex, and will need monitored over time
- Ability to provide QoS management of capacity and bandwidth are issues for many with the increased demand for Internet access
- A lack of skilled IT resources in the region is also problematic
- Continued training, including more advanced training, and hands-on workshops or forums is desired
- Expanding training to include the 'next generation' of network engineers will also help

Agenda Item 16
APIDT update



APIDT Update

APNIC EC Meeting – September 2022

APIDT Update

- Funding Activities
- Investments
- Operations
- Financial Performance

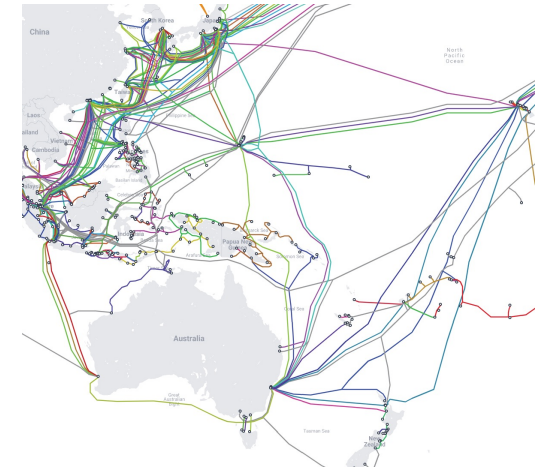
Funding Activities

IRU Agreements

- IRU – Tokyo -> Guam Live
- IRU – Guam -> Singapore Live
- IRU - Guam -> Indonesia, Signed in Bali– awaiting activation
- IRU - Guam -> Philippines, currently in negotiations, expected to be signed in September
- Equipment Purchase - Guam/Philippines/Indonesia
 - Purchase order in place since December 2021
 - Significant delays in equipment deliveries to date, first deliveries expected in September

APNIC Foundation Grants

- Foundation Grant request for 2022 - \$14,357,603 USD
- Tranche 1 - \$8,614,562 USD paid in April
- Latest Forecast for 2022 (August 2022) - \$10,313,138 USD
- Tranche 2 Estimate (October 2022) - \$1,698,576 USD



Investments

Investments

- Established a default “Yield” portfolio similar to the APNIC Investment Fund profile for the initial investment but in USD
- Final amendments are being completed to the Investment Policy Statement
- Since the end of April 2021, \$396M USD transferred to the Fund
- Purchase of Property \$15,242,000 AUD – Approx. \$11,200,000 USD
 - Funded from the USD Account (\$1.43M AUD GST refund received)
 - Master plan for the site completed
 - Current tenant has leaseback until 31 December 2022

Investment Fund Performance



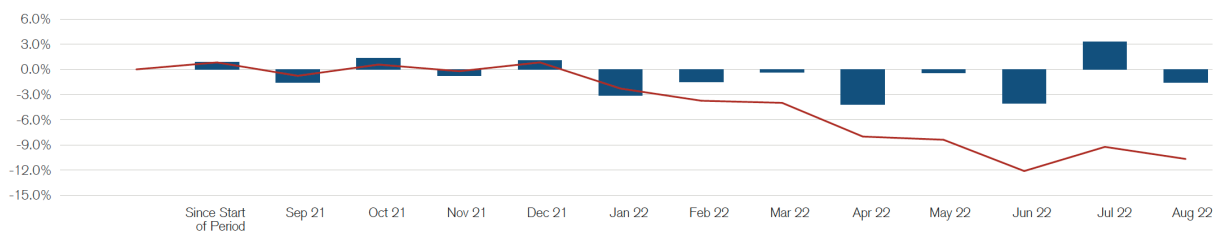
Investment Report 1.8.2022 – 31.8.2022
 APIDTT PTY LTD ATF ASIA PACIFIC
 INTERNET DEVELOPMENT TRUST
 Portfolio: 2003288-70
 Reporting Currency: USD

2. Analyses

2.1. Performance

Performance Details
 Period 1.8.2021 - 31.8.2022

	Since Start of Period	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22
Ending Market Value	405,932,603	399,459,735	404,845,104	401,682,475	405,886,995	393,321,100	387,502,534	386,454,043	370,261,958	368,754,831	353,684,316	365,276,325	359,506,226
Beginning Market Value	402,592,424	405,932,603	399,459,735	404,845,104	401,682,475	405,886,995	393,321,100	387,502,534	386,454,043	370,261,958	368,754,831	353,684,316	365,276,325
Asset Flows including	0	-26,067	0	0	-26,790	0	0	-26,993	0	0	-25,305	0	0
Inflows	0	0	0	0	0	0	0	0	0	0	0	0	0
Outflows	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Non-Investment Flows	0	0	0	0	0	0	0	0	0	0	0	0	0
Taxes	0	-26,067	0	0	-26,790	0	0	-26,993	0	0	-25,305	0	0
Flow Adjusted Value Change	3,340,180	-6,446,801	5,385,369	-3,162,629	4,231,309	-12,565,895	-5,818,566	-1,021,498	-16,192,085	-1,507,127	-15,045,209	11,592,009	-5,770,098
■ Portfolio Return – net	0.83%	-1.59%	1.35%	-0.78%	1.05%	-3.10%	-1.48%	-0.26%	-4.19%	-0.41%	-4.08%	3.28%	-1.58%
— Cumulative Portfolio Return	0.83%	-0.77%	0.57%	-0.22%	0.83%	-2.29%	-3.74%	-3.99%	-8.01%	-8.39%	-12.12%	-9.24%	-10.68%



Operations

- KPMG will complete second external audit (01-Jul-2021 to 31-Dec-2022)
 - Planning meetings completed in August with EY & KPMG
- Second ACNC (Australian Charities and Not-for-Profit Commission) annual Information statement due 30 June 2023
 - In line with ACNC approval for APIDT to move to calendar year reporting in line with Foundation and APNIC reporting periods
- EY provide ongoing financial services and preparing for Statutory Reporting, GST reporting and the ACNC annual information statement
- Irene Chan assisting 1 day per week since February, will move to 2 days from October
- Logo design and CI complete
- Master Plan concept development completed, design and documentation will commence in September when final contract agreed with Architects
- APIDT Retreat – Singapore
- Budget planning for 2023 underway

YTD Financial Performance



Consolidated Statement of Profit or Loss Asia Pacific Internet Development Trust and its controlled entity 1 January 2022 to 30 June 2022

Income	Total		Budget USD Jan - June 22	Var to Budget Jan - June 22	% Variance
	Jan - June 22 USD				
Investment Income					
Interest Income	10,738	42,690	(31,952)	-75%	
Investment Dividend Income	1,181,862	1,535,598	(353,936)	-23%	
Unrealised Foreign Currency Gain	-	-	-	0%	
Realised Foreign Currency Gain	540,855	-	540,855	0%	
Gain from Market Value Adjustment	-	9,355,374	(9,355,374)	-100%	
Less: Investment Management Fees	(522,983)	(558,903)	35,919	-6%	
Total Investment Income after fees	1,210,271	10,374,759	(9,164,488)	-88%	
Other Income					
Outgoing Recoveries Income	16,234	-	16,234	0%	
Other Income	7	-	7	0%	
Total Other Income	16,241	-	16,241	-	
Total Income	1,226,512	10,374,759	(9,148,247)	(1)	
Expenses					
Funding Expenses					
Grants - APNIC Foundation	8,390,156	8,614,562	(224,406)	-3%	
APIIDT Infrastructure - IRU Operating & Management Fees	68,289	140,281	(71,992)	-51%	
APIIDT Infrastructure - IRU Amortisation of Investments	68,793	321,439	(252,645)	-79%	
Depreciation Expenses - ARENA-PAC Equipment	-	81,250	(81,250)	-100%	
Total Funding Expenses	8,527,238	9,157,532	(630,294)	-7%	
Operating Expenses					
Accounting Fees	59,033	53,832	5,201	10%	
Staffing & Professional Fees	87,840	143,670	(55,830)	-39%	
Insurance Expenses	11,900	7,602	4,298	57%	
Legal Fees	40,620	53,478	(12,858)	-24%	
Travel expenses	1,666	75,000	(73,334)		
Membership Fees	7,232	7,121	111	2%	
Depreciation	530	750	(220)	-29%	
Other Operating Expenses	5,109	12,488	(7,389)	-59%	
Total Operating Expenses	213,929	353,951	(140,022)	-40%	
Total Funding and Operating Expenses	8,741,167	9,511,483	(770,316)	-8%	
Surplus/(Deficit) - Investing, Funding and Operating	(7,514,655)	863,277	(8,377,931)		
Other Expenses					
Direct Recoverable Expenses	17,197	-	17,197	0%	
Loss from market value adjustment	52,751,075	-	52,751,075	0%	
Unrealised Foreign Currency Loss	137,452	-	137,452	0%	
Realised Foreign Currency Loss	-	-	-	0%	
Loss on Sale of Intangible Asset	-	-	-	0%	
Total Other Expenses	52,905,725	-	52,905,725	0%	
Total Expenses	61,646,892	9,511,483	52,135,409		
Surplus/(Deficit)	(60,420,380)	863,277	(61,283,656)		

The specific purpose for which the special purpose financial information has been prepared is to provide information relating to the performance and financial position of the Trust that satisfies the information needs of the Board. No audit or review has been performed and accordingly no assurance is expressed. The financial information was prepared exclusively for the Trustees.

Statement of Financial Position

Consolidated Statement of Financial Position Asia Pacific Internet Development Trust and its controlled entity As at 30 June 2022

	30-Jun-22 USD
Assets	
Bank	
Business One	1,063,915
Westpac USD	6,963,124
Total Bank	8,027,039
Current Assets	
Cash on Hand	168
Accounts Receivable	-
Other Receivables	-
Prepayments	26,549
Other Receivables	-
Total Current Assets	26,717
Non - Current Assets	
Right-of-Use Assets - JGA-N	1,470,041
Right-of-Use Assets - Guam-SG	516,753
Total Non - Current Assets	1,986,794
Fixed Assets	
Plant & Equipment	3,866
Less Accumulated Depreciation on Plant & Equipment	(530)
Total Fixed Assets	3,336
Investment Property	
Acquisition costs	720,133
Purchase price	10,711,930
CAPEX - Professional Fees	28,533
Total Investment property	11,460,596
Investment portfolio	
Investment Portfolio	397,084,823
Market Value Adjustment	(43,400,507)
Total Investment portfolio	353,684,316
Total Non - Current Assets	367,135,041,95
Total assets	375,188,798
Liabilities	
Current Liabilities	
Accounts Payable	7,656
Accrued Expenses	99,825
GST	(808,613)
PAYG Withholdings Payable	5,639
Provision for Annual Leave	10,297
Provision for Long Service Leave	2,073
Superannuation Payable	559
Total liabilities	(682,565)
Net Assets	375,871,363
Trust Funds	
Capital Contributed	440,716,493
Accumulated Surplus/(Deficit)	(64,845,199)
Settlement Sum	69
Total Trust Funds	375,871,363

Building purchase and acquisition costs

Investment write-down

GST Refunds due

Notes:

1. Figures converted into United States Dollar using the following rate:

0.689474 USD United States Dollar per AUD. Rate provided by XE.com on 30 June 2022.

The specific purpose for which the special purpose financial information has been prepared is to provide information relating to the performance and financial position of the Trust that satisfies the information needs of the Board. No audit or review has been performed and accordingly no assurance is expressed. The financial information was prepared exclusively for the Trustees.

- Questions



Agenda Item 15
APNIC Foundation update

Foundation Update

EC meeting

(Singapore Hybrid)

11 September 2022

Duncan Macintosh, CEO

Key Points

- 1 New Singapore Board candidate process ongoing**
- 2 Q3 Board meeting on 16 September (including risk register and fund raising strategy)**
- 3 Trust Interim report submitted (as of 30 June)**
- 4 Foundation activity at APNIC 54**
- 5 Three new donors confirmed**

[Confidential information redacted]



[Confidential information redacted]



Q3 Board Meeting

- Friday, 16 September, third meeting of the year
- Concurrent meeting of AFA and AFHK
- First FtF meeting since 2019 (Sharad will be remote)
- [Confidential information redacted]

Q3 Board meeting – Morning Agenda

1. Welcome and introductions
2. CEO report | Duncan Macintosh
3. 2023 New donors and project update | Duncan Macintosh
4. Finance and budget update | Ann Kerrison-Liu, Finance Manager
5. Review and discussion of Board initiatives including a Foundation in India (Sharad) and continued investment in R&E networks (Jun)
6. Discussion and consideration of sanctions for Afghanistan and Myanmar | Jeremy Harrison, APNIC's Senior Legal Counsel
7. Discussion and consideration of Board position for China replacing Edward Tian: Danish
8. CEO performance review: Danish Lakhani

AFHK AGENDA ITEM | Resignation of Edward Tian

Q3 Board meeting – Afternoon Agenda

- **Risk Register workshop (90 mins)**
APNIC's Finance manager Nathan Harvey will facilitate a discussion and breakout session to allow the Board to identify risks and mitigation strategies for a risk register
- **Fund raising workshop (90 mins)**
Foundation CEO Duncan Macintosh will facilitate a discussion and breakout sessions to allow the Board to identify key fund raising strategies and opportunities

Interim report to the Trust

Key Points (as of 30 June)

- Project underspend in APNIC's M-root, training delivery and Academy projects and Keio university's AI3-SOI Asia project
- Some good progress in terms of projects achieving their goals
- Continuing development of AFA in terms of financial reporting (quarterly) and monitoring and evaluation

Interim report financial report

Project Expenditure Summary (USD)

Projects	Full Year Budget	Actual (Jan - Jun 2022)	YTD (Full Year Forecast)	Forecast vs. Budget		2023
				\$	%	
New Projects:						
Training delivery & Community Trainers	1,378,000	409,768	1,133,469	-244,531	-18%	Unchanged
Research: Internet Measurement	250,000	7,906	187,683	-62,317	-25%	Unchanged
Cybersecurity HoneyNet	57,000	16,581	57,000	0	0%	Unchanged
Foundation Grants	250,000	30,769	350,000	100,000	40%	100K up
Afghanistan Training & Mentoring	240,000	61,185	240,000	0	0%	Unchanged
SEA Gender & Diversity	1,096,080	151,028	1,030,466	-65,614	-6%	Unchanged
New Projects Subtotal	3,271,080	677,236	2,998,619	-272,461	-8%	
Continuing Projects:						
ISIF Asia (incl. IPv6)	2,748,000	178,647	2,728,000	-20,000	-1%	Unchanged
M-Root Anycast Instance Deployment Support	1,366,000	62,437	606,117	-759,883	-56%	500K down
APNIC Academy Platform and Curriculum Development	1,170,000	226,079	616,597	-553,403	-47%	200K down
AI3 & SOI Asia	3,782,267	1,760,509	1,823,564	-1,958,703	-52%	1.5 mill down
Sponsorships	250,000	200,332	350,000	100,000	40%	100K up
Continuing Projects Subtotal	9,316,267	2,428,004	6,124,277	-3,191,990	-34%	
Project Expenditure Grand Total	12,587,347	3,105,239	9,122,896	-3,464,451	-28%	

Highlights

- **APNIC Training delivery** organized 79 instructor-led tutorials/workshops beating their six-month target of 50 and 19 instructor-led IPv6 deployment tutorials/ workshops beating their six-month target of 8
- **APNIC Academy** achieved its six-month availability target of at least 99.95%
- **APNIC Honeynet** achieved its six-month target of deploying 80 new sensors

Highlights

- **SOI Asia** launched the Asia Pacific Internet Engineering Course (APIE) with the APNIC Academy as a collaborating partner
- **Switch!** confirmed 140 participants from Cambodia, Laos, Thailand, The Philippines, Timor Lest and Viet Nam. Professional Development Plans approved. Mentoring cycles started in August. Course enrollments in progress
- **Afghanistan training and mentoring project** completed a community consultation, finalizing participant selection and reviewing strategy based on community consultation input

Highlights: ISIF Asia

- 60% increase in eligible applications received (beating its six month target of 10%)
- 19 proposals selected for 2022 funding
- This includes proposals from five economies not supported before, increasing by 18% (from 27 to 32, out of the 56 economies covered)
- Four IPv6 deployment grants confirmed (due diligence in process)
- Two 2022 Awards allocated
- 2021 grant reports in progress

[Confidential information redacted]



Sponsorships

- **Internet Protocol Journal:** (USD 25,000)
- **Cybergreen Institute:** Website updated and information events conducted (USD 100,000 for three years)

Renewals in planning Q4:

- **Asian Institute of Technology:** AINTEC + AP* conference support
- **PeeringDB**
- **Island Bridge Network Limited:** IXP Manager
- **IXP Database**
- **Shadowserver**

Foundation activities at APNIC 54

Foundation presence

- 6 operational staff
- 7 project staff
- 2 ISIF Asia Award winners
- 8 current/former ISIF Asia grantees
- 8 Switch project participants
- 6 Foundation grantee representatives
- 3 Sponsored organizations representatives

Events

- **Foundation conference session** – including presentation of 2022 ISIF ASIA Awards and Gender and Diversity project update
13 Sept
- **ISIF Asia 2022 Awards cocktail**
Temasek Shophouse
14 Sept
- **Foundation partners breakfast** with representatives from all Foundation funded activities
15 Sep

Foundation activities at APNIC 54

- **Foundation Board meeting**
Grand Hyatt
16 Sep | 10:00 – 17:00 (UTC +8:00)
- **Joint Foundation Board EC dinner**
Madam Fan Restaurant
16 Sep | 18:30 - 20:00 (UTC +8:00)

New donor: KDDI Foundation

- Founded in 2009 under KDDI Corporation (60 years as a pioneer of international telecommunications)
- A public interest incorporated foundation with the philosophy of “giving back the benefits of information and communication to society both inside and outside Japan”
- The Foundation’s philosophy is in line with the SDGs and the dissemination and utilization of ICT, “a social infrastructure similar to water and electricity”

Funding for network security and incident handling training

- Dec 14-16, 2022
- Lao Telecommunications Regulatory Authority, Ministry of Technology and Communication
- **Workshop cost: USD 29,900**
- **Overhead: USD 2,990**
- **Total: USD 32,890**

Will continue and expand next year

New donor: USAID BEACON project

USAID launched the **Better Access and Connectivity (BEACON) project** in October 2021 to promote economic growth through better information and communications technology helping bridge the digital divide in the Philippines:

- Five-years
- USD 33 million
- Main areas of work:
 - Improve ICT and logistics infrastructure
 - Strengthen regulatory, business, and innovation environment
 - Bolster cybersecurity
 - Assist the government in automation and digitization efforts
 - Support community networks to expand low-cost internet access for underserved communities

Funding to focus on technical training for three workshops:

- Jan 2023: Workshop 1 - Internet Routing with Multihoming and RPKI
- Feb 2023: Workshop 2 - IPv6 Deployment & DNS/DNSSEC
- Mar 2023: Workshop 3 - MPLS Deployment

- **Workshop cost: USD 29,900**
Overhead: USD 2,990
Total: USD 32,890

- **Project total: USD 98,670**

Will continue and expand

[Confidential information redacted]



[Confidential information redacted]



Questions?

Stay tuned for more news!



<https://apnic.foundation>



@ApnicFoundation



APNICFoundation



apnic-foundation



<https://bit.ly/3A8qDJD>



<https://isif.asia>



@ISIF_Asia



ISIF.Asia

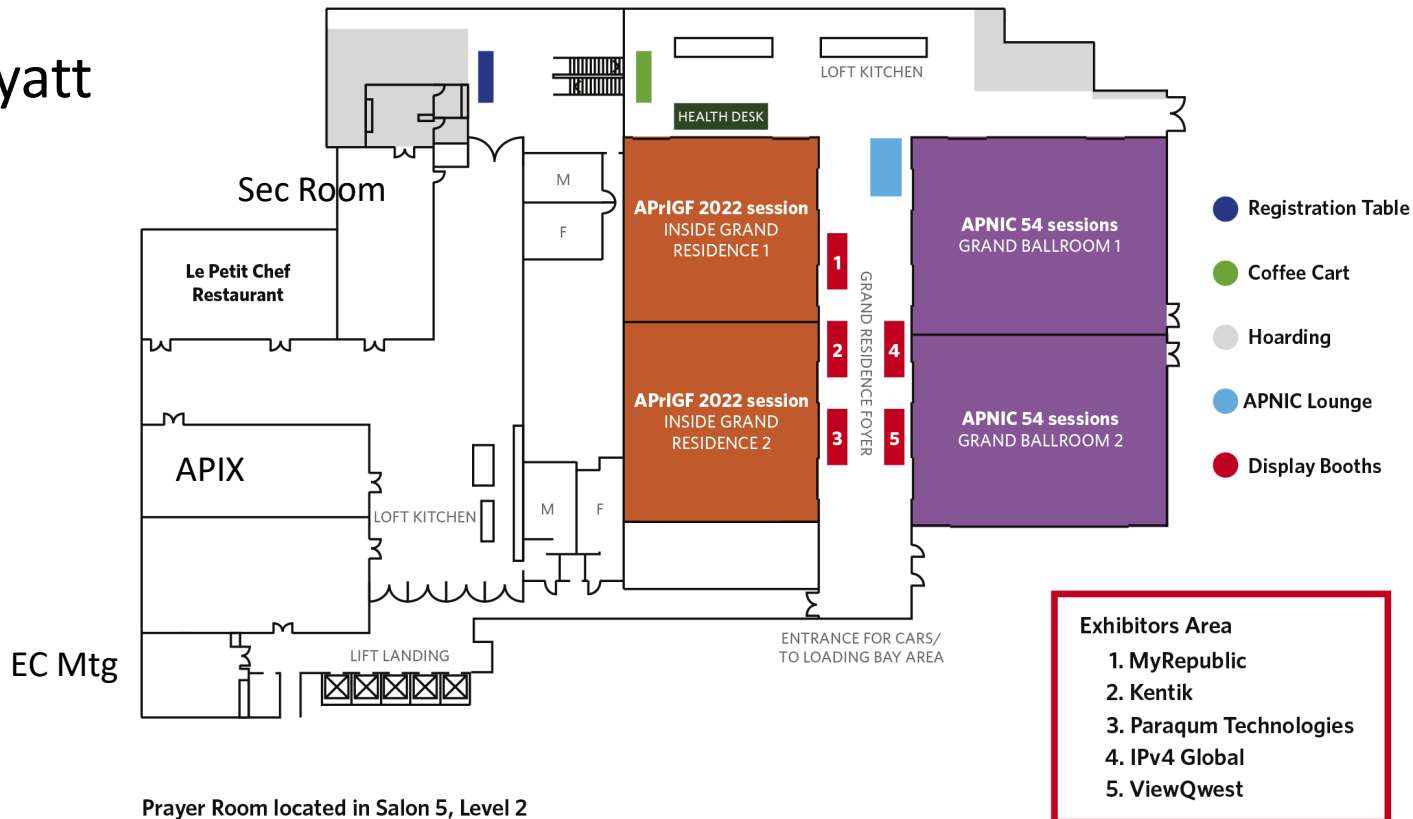
Agenda Item 20
AOB

APNIC 54 Hybrid Setup

September 2022

Venue layout

Grand Hyatt Level 3



In room Setup

One large screen – can be blended

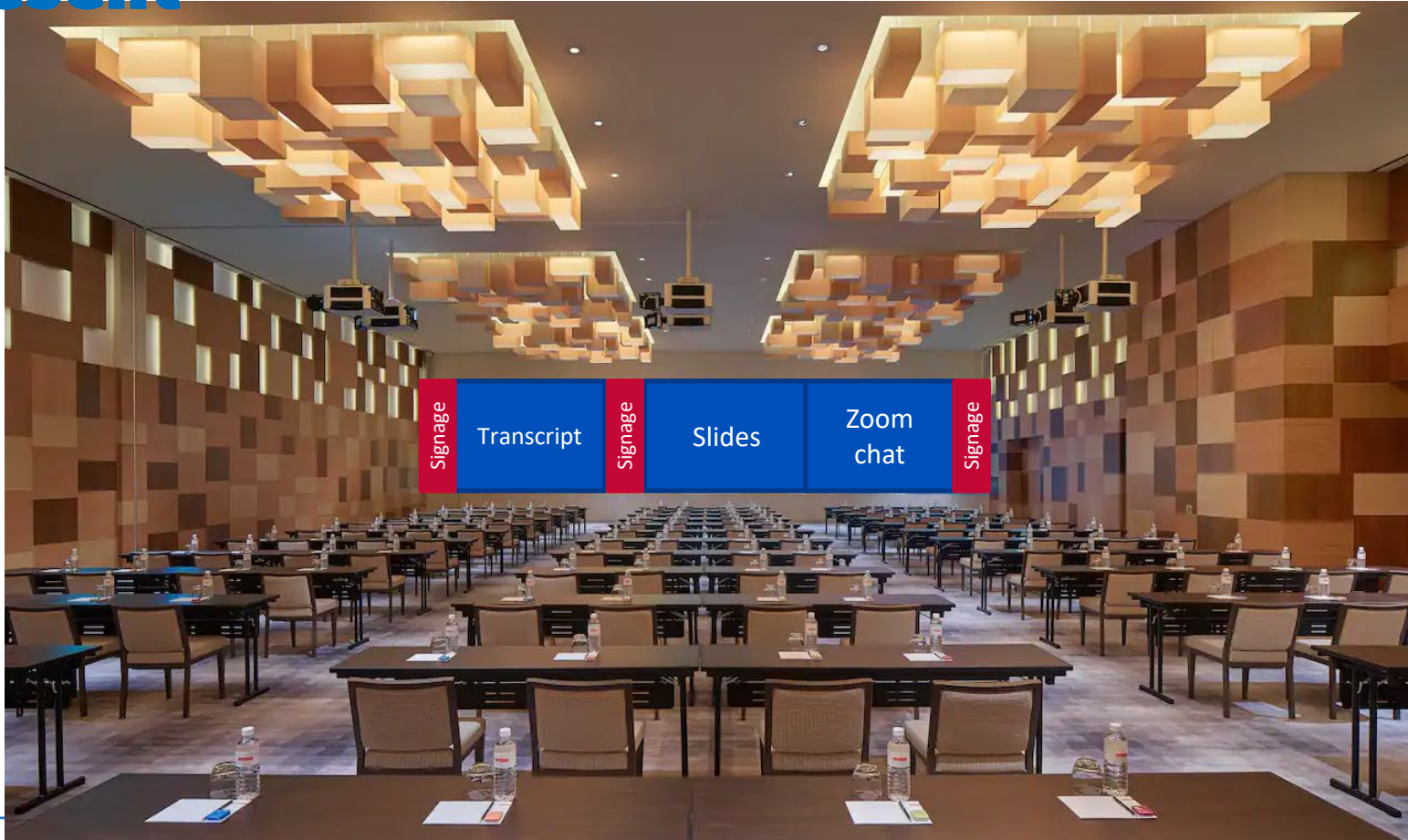
Q&A from remote participants

Sponsor logos, event messages during breaks

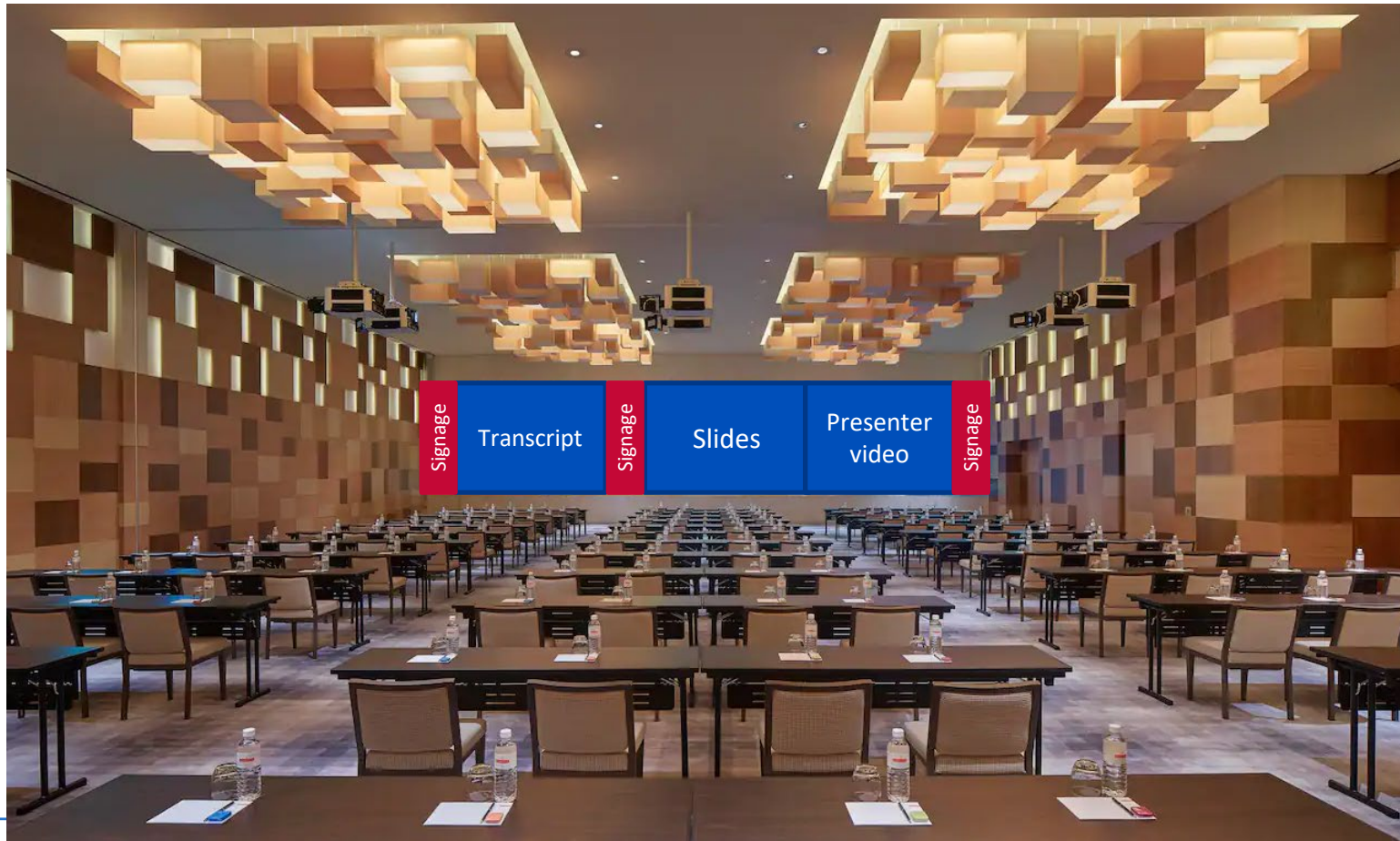
Signage Transcript Signage Slides Zoom chat Signage

Video of remote presenter

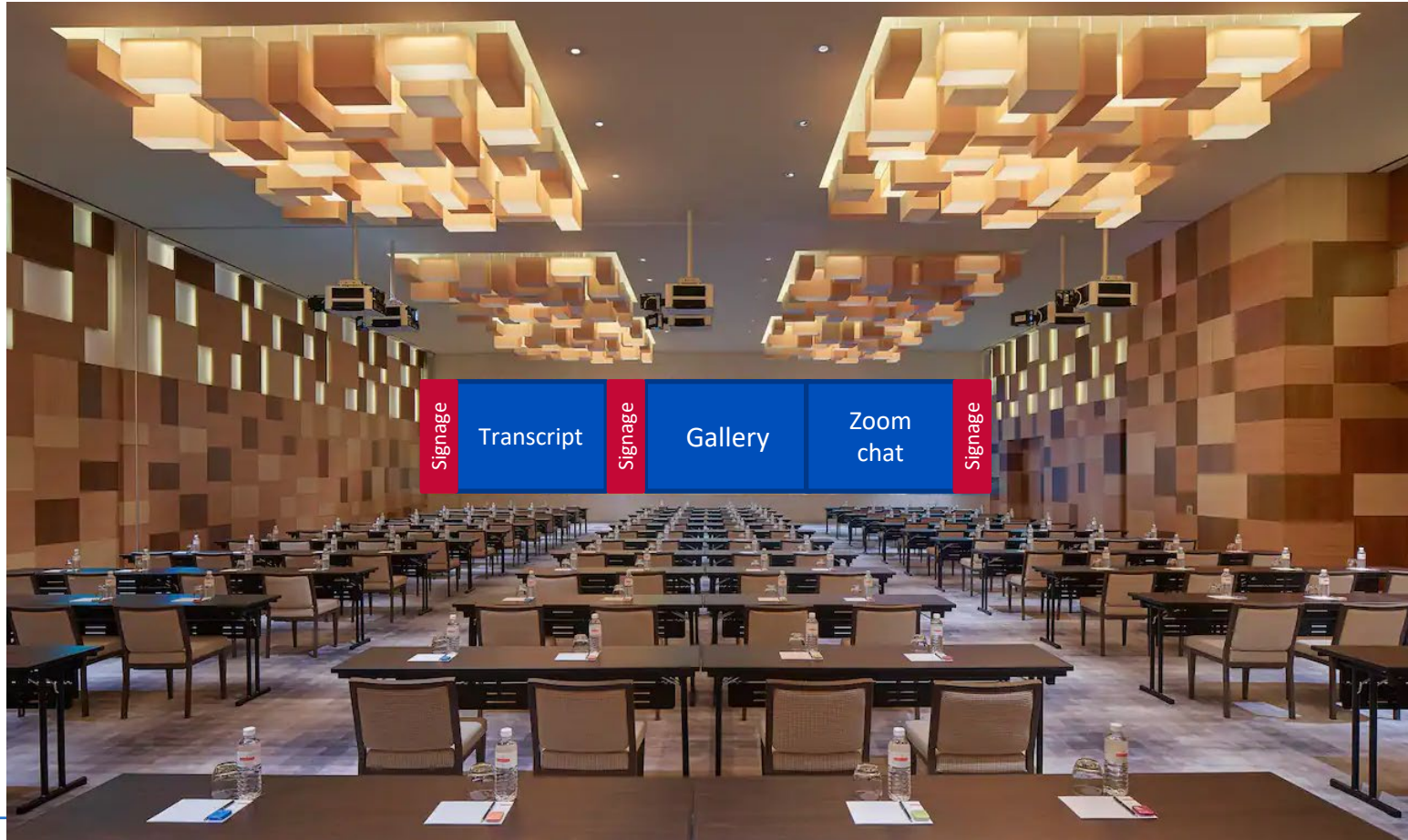
Scenario 1: Standard presentations, all present



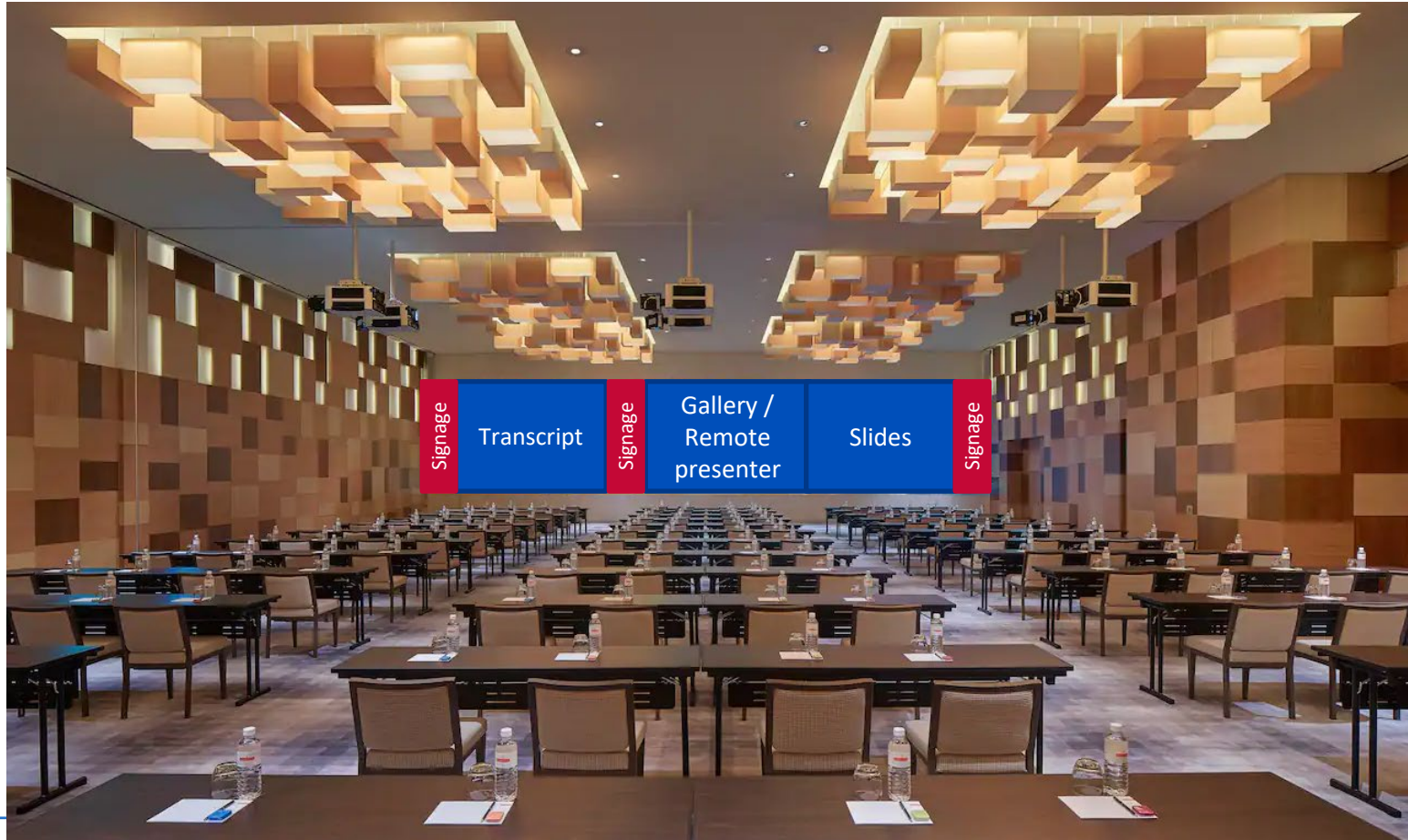
Scenario 2: Remote presenter



Scenario 3: Panel - no presentation

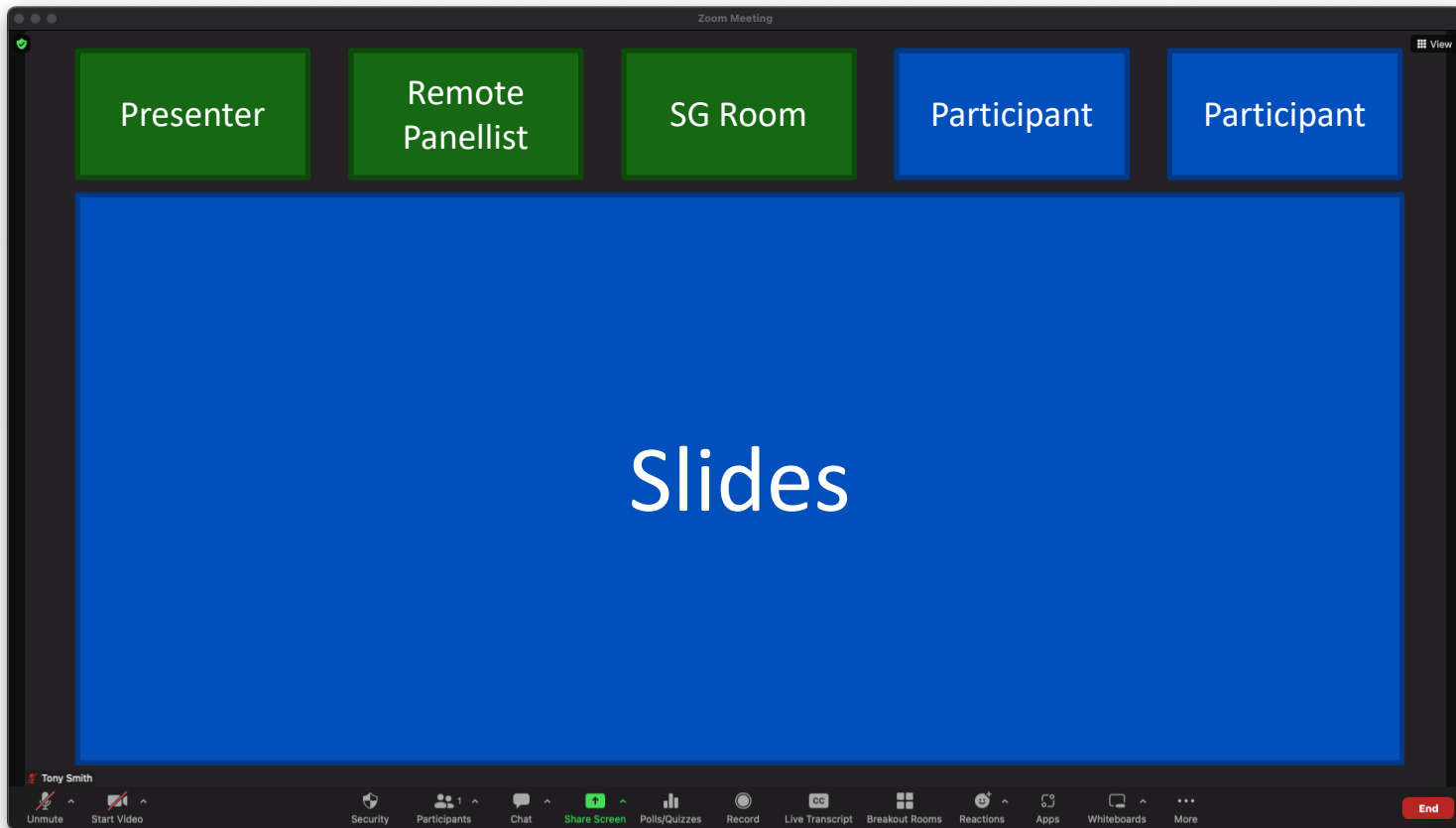


Scenario 4: Panel – with presentation



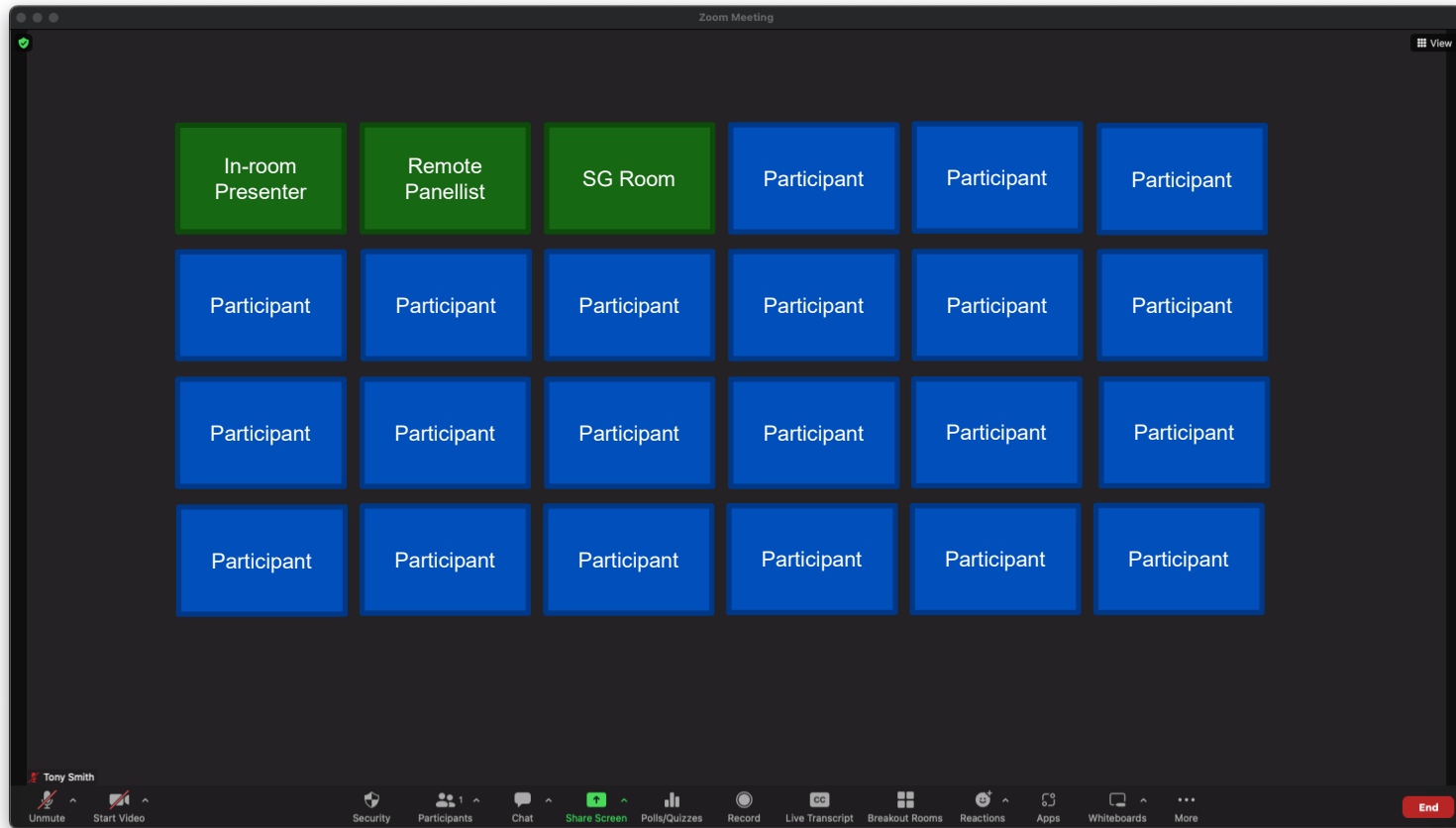
Zoom view - Slides on

- Chat and transcript also available
- Remote users can control their view setup
- More panellists can be added
- Remote Q&A also appears as normal



Zoom view - Gallery, no slides

- Chat and transcript also available
- Participant video will be turned off
- Participants can pin video or switch to presenter only



AMM

- Gaurab chair remotely
- EC will use online chat group to coordinate
- Slack group for logistics (Gaurab-Paul-Tony-Sunny-Craig-Connie)
- Open mic
 - Room camera will be focused on room microphone during open mic
 - Other questions may come online via chat or raised hand

General hybrid set up

- Q&A will be moderated together – line up at microphone or hands up online
 - Any written questions in chat will be read by moderator
- Zoom session chat will be viewable on screen, both remote and in person delegates can participate
 - Cometchat will be available throughout conference
- Mix of online and in-person presenters, but majority will be in Singapore
- An online social quiz will run daily in the afternoon tea break – everyone can play

APNIC 54 Hybrid Setup

September 2022

APNIC 54 – Annual Member Meeting – Agenda

Time (UTC +8)	Topic	Speaker
AMM (1): 13:30 – 14:30		
13:30	EC Chair welcome, introductions, and opening remarks	Gaurab Raj Upadhaya
13:35	APNIC Activity Report	Paul Wilson
13:55	APNIC Survey 2022	Brenda Mainland
14:10	APNIC EC Treasurer Report	Kenny Huang
14:20	Open Mic	

AMM (2): 15:00 – 16:00		
15:00	NRO NC and SIG Election Results	Election Chair (Anju Mangal)
15:10	APNIC EC Report	Gaurab Raj Upadhaya
15:20	IANA/PTI Update	Kim Davies
15:25	Policy SIG Report	Bertrand Cherrier
15:35	NIR SIG Report	Oanh Nguyen
15:40	Cooperation SIG Report	Joy Chan
15:45	Routing Security SIG Report	Aftab Siddiqui
15:50	NomCom BoF Report	Aftab Siddiqui
15:55	Open Mic	

AMM (3): 16:30 – 17:30		
16:30	Internet Association Leaders Forum BoF Report	Muhammad Arif
16:35	APSIG 2022 Report	Satish Babu
16:40	APriGF 2022 Report	Anju Mangal
16:45	APIX Report	Katsuyasu Toyama
16:50	Open mic	
17:00	APRICOT 2023/APNIC 55 Host Update	Philip Smith
17:10	Vote of Thanks	Paul Wilson
17:20	APNIC EC Closing Remarks	Gaurab Raj Upadhaya

APNIC Executive Council Chair

Delegation for Meeting Chair Position

The Chair of the APNIC Executive Council is a position designated by the APNIC bylaws.¹

The APNIC bylaws describe the role, duties and responsibilities of the APNIC EC Chair. The duties of the APNIC EC Chair include presiding at all meetings of the APNIC EC.

It has been the practice of the APNIC EC that the APNIC EC Chair periodically delegates the role of chairing APNIC EC meetings to various APNIC EC members, on a rotational basis, at their discretion. When the APNIC EC Chair delegates this role for a meeting, the person delegated this role will be described as the **Meeting Chair**, during the course of the meeting.

This document sets out the APNIC EC Chair's intentions and expectations in relation to this delegation.

Intention

The intention and objective behind this delegation is to facilitate succession planning, and to engage APNIC EC members by providing them with the experience and opportunity of chairing APNIC EC meetings.

Delegation Limit

For clarity, it is the APNIC EC Chair's prerogative as to whether such delegation is made at each APNIC EC meeting. The APNIC EC Chair may withdraw such delegation at any time, even during the course of a meeting.

Unless the APNIC EC Chair advises otherwise, the APNIC EC Chair will retain the right and authority to declare an APNIC EC meeting opened, suspended, adjourned, resumed or closed at any time.

Meeting Chair's Role

The Meeting Chair's role is to preside over an APNIC EC meeting, commencing after the APNIC EC Chair formally:

- declares the meeting opened; and
- hands over the conduct of the APNIC EC meeting to the Meeting Chair,

until the earlier of the following events:

- the APNIC EC Chair advises the meeting and the Meeting Chair (verbally, at any time) that they will resume the chairing of the APNIC EC meeting; or

¹ APNIC Bylaws, paragraphs 38 and 39.

- at the end of the scheduled agenda items where it is indicated that the role of the Meeting Chair will conclude.

If the APNIC EC Chair cannot be present at an APNIC EC meeting, the APNIC EC Chair may delegate the role of Meeting Chair for that particular meeting to a member of the APNIC Executive Council, who will preside over that entire APNIC EC meeting.

Guide to Chairing Meetings

The APNIC EC Chair offers the following as a guide to the Meeting Chair, in performing the role of meeting chair:

Before the meeting:

- Work with APNIC Secretariat and the APNIC EC Chair to plan and finalise agenda before the meeting
- Receive briefing from APNIC Secretariat and the APNIC EC Chair, including updates on action items arising from previous meeting

During the meeting:

- Ensure full participation of all APNIC EC members; drawing out quieter members and discouraging members from monopolising the meeting
- Ensure that everyone understands what is being discussed
- Keep an open mind and listen to the opinion of others; avoid dominating the proceedings
- Impartially summarise contributions made by members at the end of an agenda item; try to seek consensus if there is disagreement
- Try to focus and steer members to the issue being discussed, if discussions have wandered off topic
- Consider whether a decision needs to be made by a resolution or an action item (including person responsible, and timing)
- Keep to the agenda and time allocation, but allow flexibility and freedom of expression

[23 June 2020]