

RIPE NCC Survey 2016

October 1, 2016

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1 Introduction from Managing Director of the RIPE NCC

It is with great pleasure I present to you the final report from the RIPE NCC Survey 2016, produced by the Oxford Internet Institute (OII). The OII provided objective, independent analysis of the survey data, having no connection with the RIPE NCC. Equally critically, they provided absolute anonymity to respondents, removing identifying information before providing any material to the RIPE NCC.

This project to gain feedback from the RIPE NCC membership and other interested parties began in November 2015 with consultation groups and interviews to determine the issues that would be raised in the survey. The consultations were carried out by an independent consultant separately from the OII survey analysis and reporting.

RIPE NCC members and other interested parties responded in numbers far in excess of that for any survey the RIPE NCC has conducted in its history. There were 4,344 responses to our requests to participate, giving us not only a fantastic response in terms of numbers but also in terms of diversity and reach. This diversity in response is also reflected in the statistics provided for industry type and length of time as a RIPE NCC member. A large proportion of those who responded joined the RIPE NCC since the last survey was conducted in 2013. So it is great to see that we are hearing from new members and from those we have not heard from in some time, as well as from those who are involved with the RIPE NCC frequently.

The large number of responses and their geographic diversity determine how this report is presented. As we usually see in our surveys, most of the subject areas surveyed bring a common response from all regions and from most respondent types. However, the wide range of issues means that opinion can sometimes vary by region, by industry and by length of time as a RIPE NCC member. For this reason, the survey covers all areas by overall results. From the table of contents, we hope you will be able to easily find the results relating to your own region and industry, as well as those issues of most concern to you.

The regional breakdowns are listed along the following lines: Western Europe, Eastern Europe, South East Europe, the Eurasia Network Operators Group (ENOG) region, the Middle East and responses from outside the RIPE NCC service region. Similarly, the concerns and opinions of RIPE NCC members can often differ from those of non-RIPE NCC members, so statistics from each of these groups is presented separately where necessary.

Where the results for region, industry or length of RIPE NCC membership do not differ greatly from the overall results, no breakdown is provided. In most cases, the overall results matched the breakdowns closely.

The survey report includes appendices that provide every single piece of information received in the survey. All statistics from every question as well as every

open response is included. We hope you will let us know if you have feedback. We are aware that not everyone has time to read through hundreds of pages of statistics and comments, so with this in mind we provide an Executive Summary that outlines concisely the reasons the RIPE NCC carries out these surveys, how the survey was conducted, the findings from each area surveyed and the plans to follow through on the feedback received.

The findings from the survey that were identified by the OII are outlined in the Executive Summary and in the main report on each section. In general, we are delighted that the satisfaction rating for the RIPE NCC and its services and activities scored highly and that there were many constructive comments in all areas.

Some notable points that arose throughout the survey were:

- There was a very high level of approval and satisfaction for the RIPE NCC's services and activities in the statistical results
- Lack of awareness about services and their benefits was a common reason given for not using them
- People indicated that they often did not have time to use our services or read information we provide; they also indicated that they would appreciate efforts to reduce the amount of time they need to spend dealing with the RIPE NCC
- The lack of available IPv4 space was a noted issue across the survey

We will publish a further report on the actions taken by the RIPE NCC that will update you on the progress resulting from your survey feedback. The findings from this survey also feed into the RIPE NCC Activity Plan and Budget 2017, which we hope you will also read and comment on to the RIPE NCC Executive Board.

Finally, I wish to thank those who took the time to participate in this survey. The survey has provided the largest source of feedback from the RIPE NCC membership and other parties interested in the Internet since the formation of the RIPE NCC. This means the RIPE NCC has a huge repository of data that it can use to improve and develop in the coming years. For this we are truly grateful.

Axel Pawlik
Managing Director
RIPE NCC

2 RIPE NCC Survey 2016: Executive Summary

The RIPE NCC is an independent, non-for-profit membership organisation that supports the infrastructure of the Internet through technical coordination in its service region and through collaboration globally with the other Regional Internet Registries. The most prominent activity of the RIPE NCC is to act as the RIR providing global Internet resources and related services (IPv4, IPv6 and AS Number resources) to members in the RIPE NCC service region. The RIPE NCC also provides services for the benefit of the Internet community at large.

2.1 Background to the RIPE NCC Survey 2016

The RIPE NCC Survey 2016 is the seventh of its kind that the RIPE NCC has commissioned since 2002 and it is the third to ask the opinions of both RIPE NCC members and non-members. While the survey asked these groups to rate and comment on the current RIPE NCC service offering, the main focus of the survey was to get more qualitative feedback from respondents on how to improve service provisioning.

To ensure the anonymity of respondents and the neutral analysis of results, the RIPE NCC re-commissioned an independent organisation with experience in the Internet industry and with conducting analysis. The Oxford Internet Institute (OII) was asked to administer the 2016 survey on the RIPE NCC's behalf. Desiree Miloshevic, Visiting Research Associate alumna, together with Dr Scott Hale and Ginette Law led the OII analysis team.

The RIPE NCC Senior Management and Executive Board tasked the OII with

- Getting feedback from RIPE NCC members and stakeholders on the performance of the RIPE NCC
- Providing feedback from RIPE NCC members and stakeholders on the direction the RIPE NCC should take in the coming years
- Identifying key areas in which the RIPE NCC should concentrate its efforts
- Getting feedback on the improvements of the RIPE NCC service offerings
- Examining the requirements of members and stakeholders in the different geographical areas of the RIPE NCC service region

2.2 Methodology

The survey was formulated following the consultations that were conducted with RIPE NCC members and other interested parties in the RIPE NCC service region to identify the issues that concerned them and to get the right focus of the survey, which this time was on overall improvements.

The survey questions were grouped in the following sections:

1. General RIPE NCC services
2. Corporate Governance
3. Resource Registration Services
4. Resource Certification (RPKI)
5. Training Services
6. RIPE Policy Development Process (PDP)
7. RIPE NCC Outreach and External Relations
8. RIPE Database
9. IPv6 Deployment
10. RIPE Atlas and RIPEstat
11. Data and Statistics
12. Additional Comments

The online survey was launched on 27 May 2016 and closed on 30 June 2016. The third party SurveyMonkey tool was used to collect responses. From May 27 the OII had sole access and control of the SurveyMonkey account and for the duration of the survey.

During the five-week survey period, the OII team randomized entries of all respondents that week to choose a single iPad winner and forward the relevant respondent contact details to the RIPE NCC staff to send the award.

In the 2016 survey, both older and newer RIPE NCC members participated as well as non-members.

While some survey questions were mandatory, most questions were open-ended and asked both members and non-members to rate their satisfaction, make a selection, and rank an awareness or an opinion on a scale from 1 (Low) to 7 (High). Non-members entered the survey questionnaire at the sections that were relevant for non-members only, such as RIPE Policy Development Process (PDP). Although some questions or answers in later sections might not be relevant or known to non-members, respondents were able to choose Not Applicable or No Comment if they wished. Answers on specific questions from respondents represented in the graphs include a number of members-only that answered a particular question. For both transparency and accountability reasons, the Appendices to the survey report contain all questions charts and all the comments made by respondents exactly as entered. All individual comments are anonymised.

It should be noted that qualitative data and comments collected through this online survey may at times be biased or not fully represent the RIPE NCC's membership and community. Many people who took the survey may not have sufficient

English skills or knowledge about their organisation to feel inclined to leave comments. Nonetheless, the data collected through this survey, both qualitative and quantitative provides rich information and assists the RIPE NCC in meeting its objectives set out in the survey.

2.3 Survey Participants

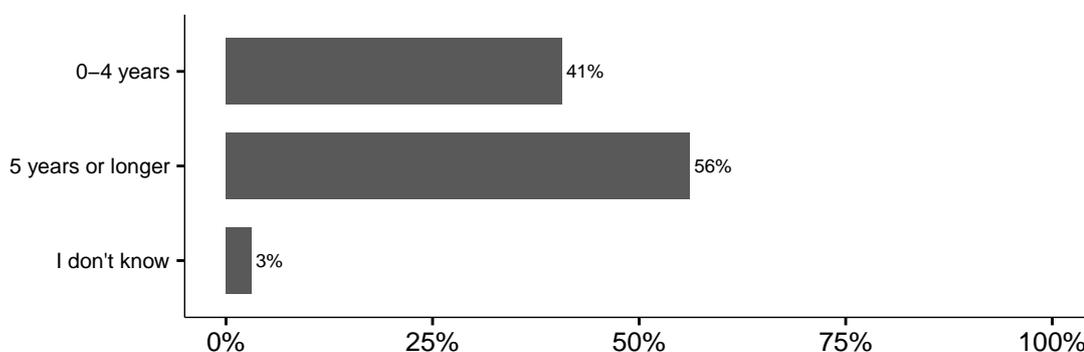
The survey received a high number of responses, a total of 4,344 responses, from members and non-members. It is worth noting that the current size of RIPE NCC membership is over 14,000 RIPE NCC members.

This is a large increase in the number of responses received, almost four times the number of responses of collected in 2011 and some 713 more responses than the 2013 survey where 3,631 responses were collected. Out of 4,344 respondents, some 3,056 or 70% fully completed the survey.

Overall 88% indicated that they are members of the RIPE NCC while 12% represented non-members or stated that they are not part of the RIPE NCC, while in 2013, some 20% represented the non-members or other interested parties.

New and old members alike participated in the survey, although the percentage of older members (with a membership of five years and more) was 15 percentage points higher than younger members (Figure 1).

Figure 1: Length of RIPE NCC membership

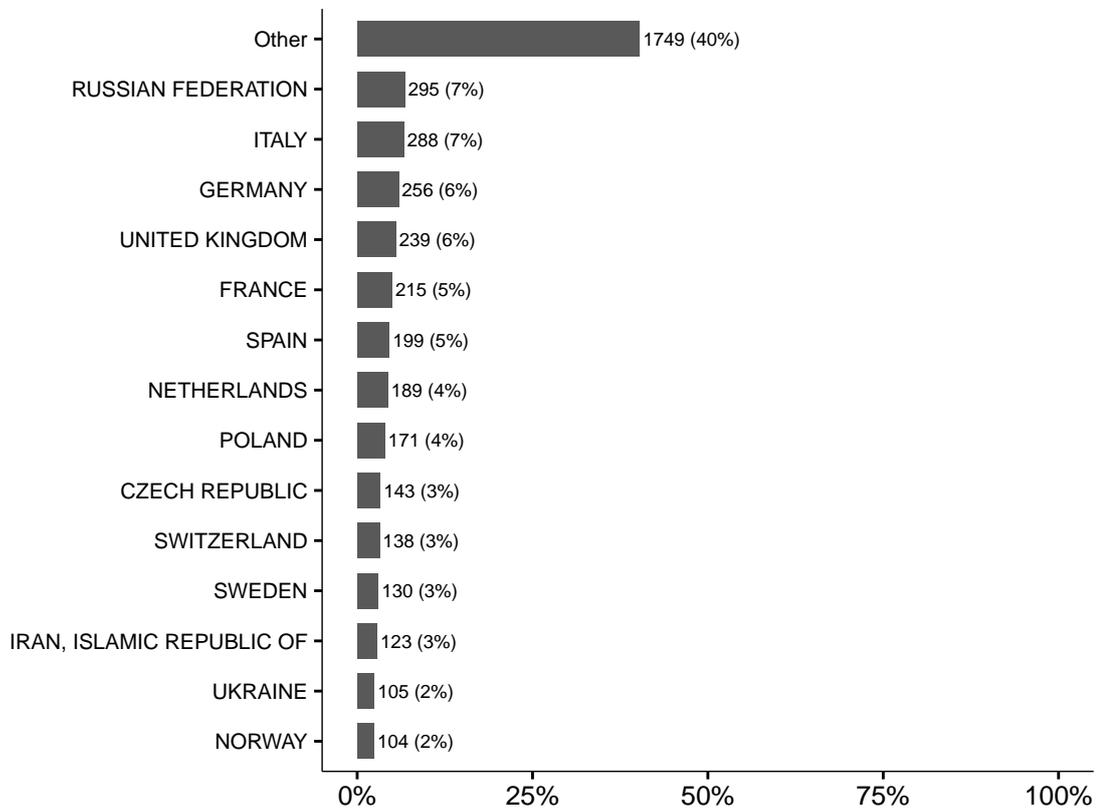


N=3483 (Members and other interested parties)

2.4 Respondents' Organisational Types and Profiles

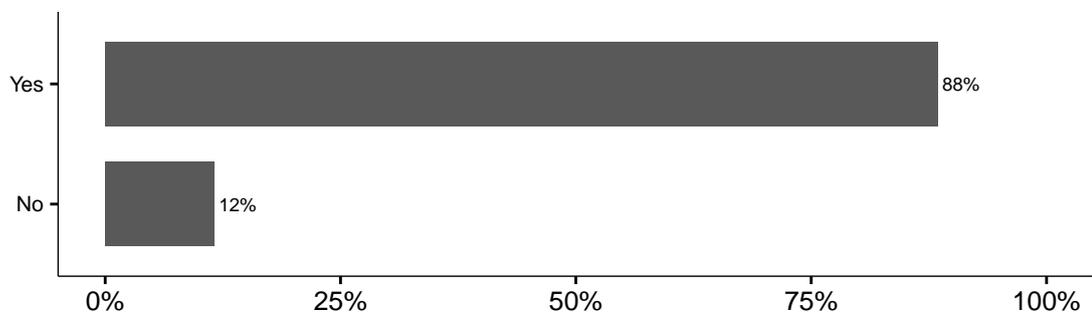
Over 4,000 people (N=4,344) participated in this year's online RIPE NCC survey, with just over 70% (N= 3,056) fully completing the survey. Responses were collected from over 80 different countries with a large majority mostly based in the RIPE NCC service region (Figure 2). (See Appendix 4 for a more detailed country breakdown.) 12% of participants stated they were not part of the RIPE NCC (Figure 3).

Figure 2: Country of residence



N=4344 (Members and other interested parties)

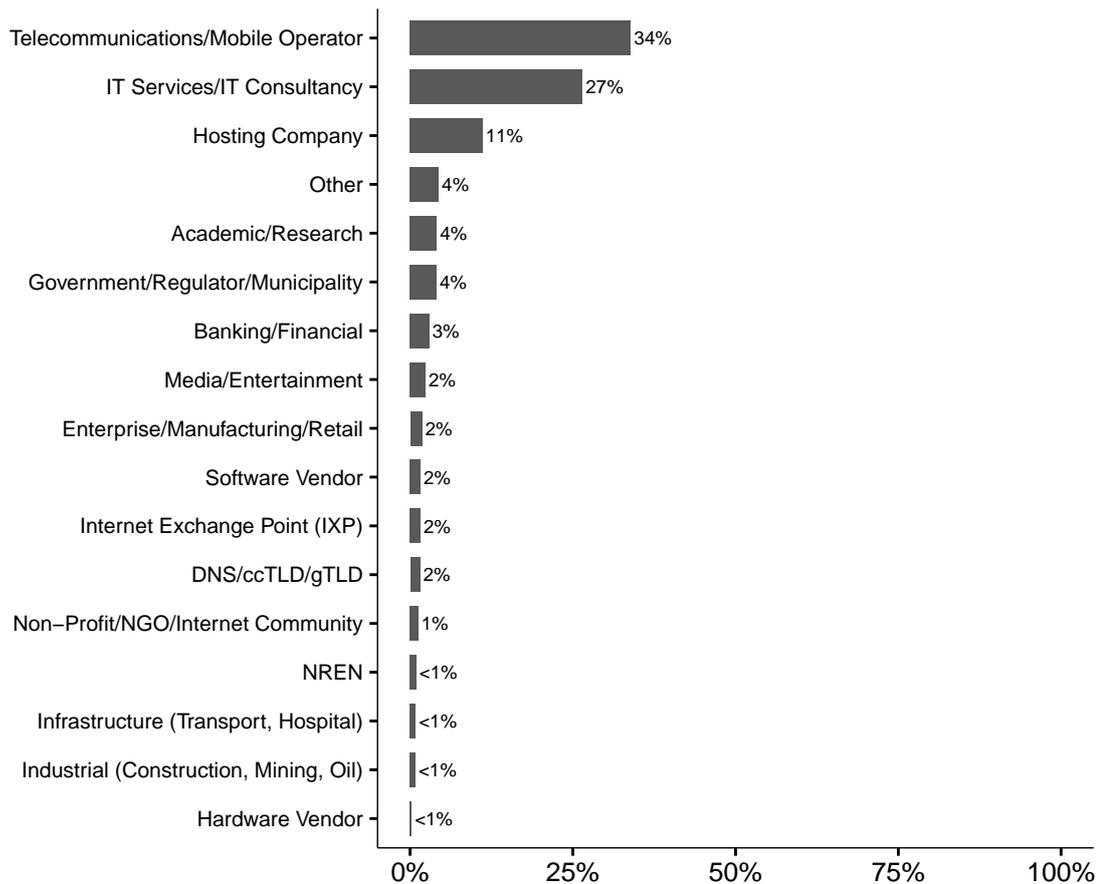
Figure 3: RIPE NCC member?



N=4344 (Members and other interested parties)

Roughly a third of respondents were telecommunications or mobile operators, while 27% were from IT services or consultancies and 11% from hosting companies (Figure 4). The rest (around 28%) were from a broad range of sectors including academic, government, banking and media/entertainment.

Figure 4: Industry



N=4344 (Members and other interested parties)

3 Overview of Findings

3.1 Overall

The main statistical results were extremely positive in all sections. Over 95% of members indicated that the membership fee offered value for money. Three issues that occurred throughout the survey were: demand for more IPv4 space; lack of time to use services or read documentation (they also indicated that they would appreciate efforts to reduce the amount of time they need to spend dealing with the RIPE NCC); and lack of awareness about services.

3.2 Finance and Billing

4% of respondents requested improvements, and these related mainly to local payment options. There were some requests to reduce the fees for smaller companies.

3.3 Corporate Governance

There was a positive reaction to work conducted by the RIPE NCC and its Executive Board in this area. Many comments indicated a lack of time to become more aware of issues in this area.

3.4 Communications

The majority of respondents (87%) indicated they were satisfied with the level of information they received from the RIPE NCC.

3.5 LIR Portal

The majority (75%) of respondents were unaware of developments with the portal. Many of the comments requested further simplification and usability improvements.

3.6 Registration Services

There was good satisfaction with the quality of services provided. Respondents indicated: a need for simpler tools and processes; having tools in one place; some support for checks by the RIPE NCC on LIRs' data quality.

3.7 RPKI

Many said they lacked awareness about RPKI and/or its benefits. Those who used RPKI tended to be very positive about it. Some were concerned about how the technology might be misused.

3.8 Training Services

Comments highlighted a positive response to Training Services, with requests for more educational video content and courses on BGP and Security being common.

3.9 Policy Development Process (PDP)

The most common request for improvement in this area was to have better PDP webpages.

3.10 Internet Governance

Two thirds supported RIPE NCC engagement with governments, with many noting that it was important governments know how things work but technical matters should be left to experts. Education on resource management was seen as the most important way the RIPE NCC should interact with governments.

3.11 IPv6

Only 18% indicated they did not have plans to implement IPv6. Lack of customer demand and lack of technical knowledge were seen as two key factors preventing deployment, while many indicated in open comments that lack of time was a key factor in preventing them from deploying.

3.12 RIPE Atlas and RIPEstat

Many were either unaware of the services or how they could be of benefit. Many requests for improvements asked for better documentation and usability. There were many specific suggestions for feature improvements.

3.13 Data and Analysis

The most popular choice of the respondents regarding what the RIPE NCC could provide was historical comparative data, followed by country profiles, new tools to help analyse and compare data, and market analyses.

4 General RIPE NCC Services

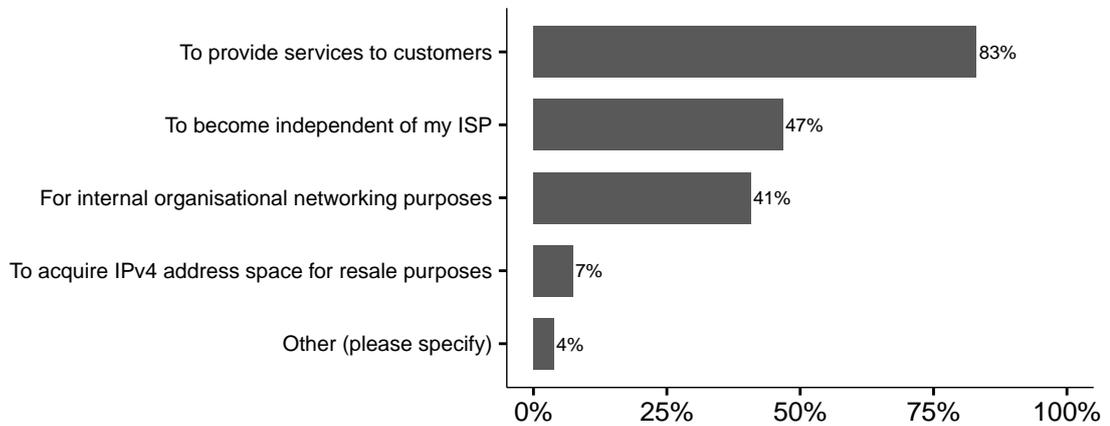
The survey began with some general questions to allow the RIPE NCC to better understand its membership.

The main purpose for an organisation to request address space from the RIPE NCC was to provide services to their customers (83% of respondents) (Figure 5). Survey participants also frequently cited requesting address space to become independent of their ISP (47%) as a reason, as well as for internal organisational networking purposes (41%).

A large majority of respondents (94%) indicated that they managed their own LIR account (Figure 6). Less than 5% said they had a third party or consultant manage their LIR account for them, and less than 1% said they either managed their own but got assistance from a third party, or that they managed their own accounts and also helped others manage theirs.

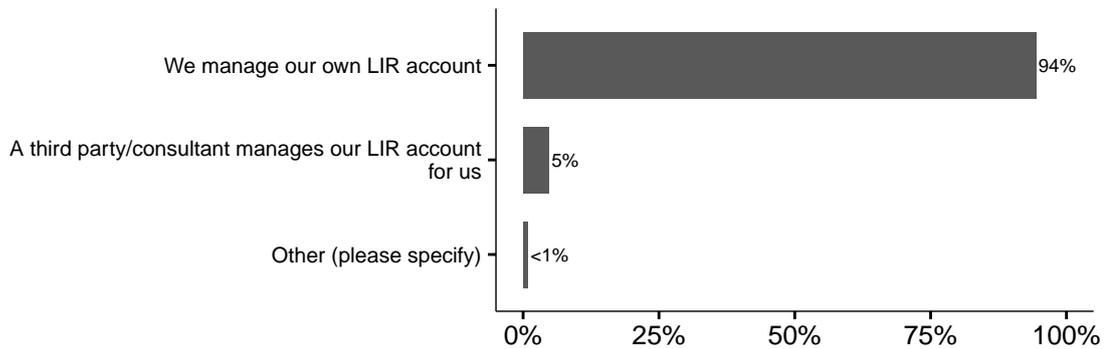
Overall, an overwhelming majority of responding members (95%) thought that the RIPE NCC provided good value for the service fee they paid (Figure 7). Out of those respondents who left comments though (5%), some felt that RIPE NCC

Figure 5: For what purposes did your organisation request address space from the RIPE NCC? (Choose multiple)



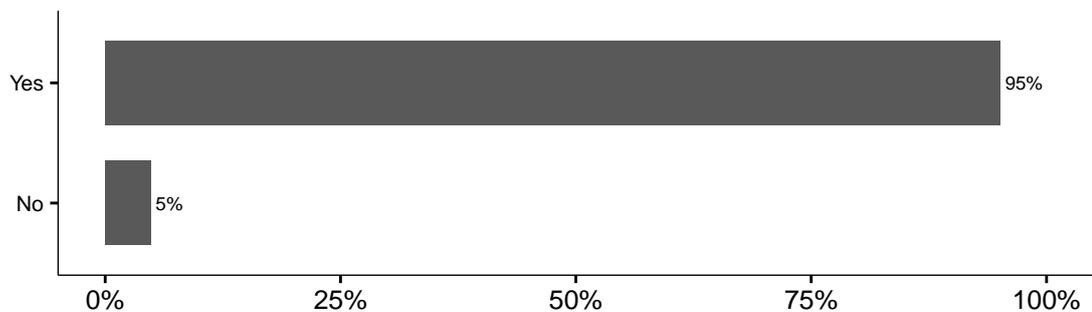
N=3483 (Members and other interested parties)

Figure 6: Administration of LIR account outsourced?



N=3483 (Members and other interested parties)

Figure 7: Good value for money?



N=3483 (Members and other interested parties)

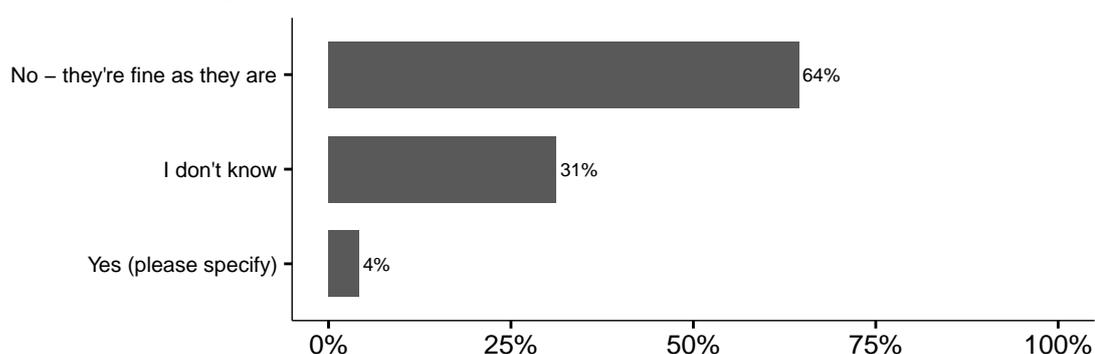
fees were expensive, especially for smaller companies. While some who left comments thought that the service offering justified the price tag, others felt that they were paying too much, especially for unnecessary services and organisational bureaucracy. Some believed that the fees were unfair for newer members and small organisations, who had less access to IPv4 addresses or used fewer resources. Apart from these particular fee-related comments, the respondents, in general, were very satisfied with the way that the RIPE NCC provided and delivered services.

Just under two thirds of respondents (64%) said that they were fine with the RIPE NCC’s current billing and payment process (Figure 8). 31% said that they didn’t know if the process could be improved. Those who replied yes (4%) gave very similar and informative answers.

The main themes that surfaced from these answers related to more billing options (e.g., multi-year, annual, quarterly or monthly billing, or pay by IP resources used), more payment options (e.g., credit card, debit, purchase order and other online gateway options besides PayPal), a better reminder system (with advance email, phone and mail reminders), as well as more flexible billing administration, which would allow members to choose invoicing dates, see invoicing details and history, in addition to the ability to change billing information during an invoicing cycle.

Out of these comments, many also asked for invoices and payment options that considered and were more adapted to country policies and regulations in order to make payments easier for members, notably in Iran, Russia and the Ukraine.

Figure 8: Could billing/payment be improved?

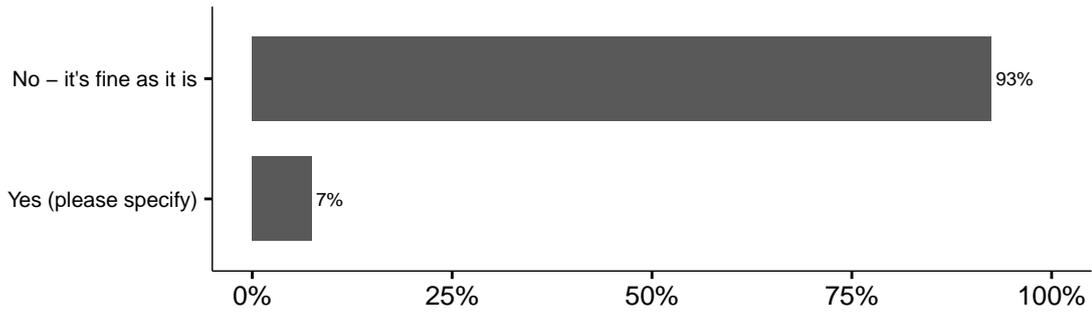


N=3323 (Members and other interested parties)

A large majority of responding participants (93%) also said that the LIR Portal was fine as it was (Figure 9). Roughly 7% of respondents gave suggestions to improve the portal (see Q9 in Appendix 4 for more details), and many of these related to improving the usability of the portal.

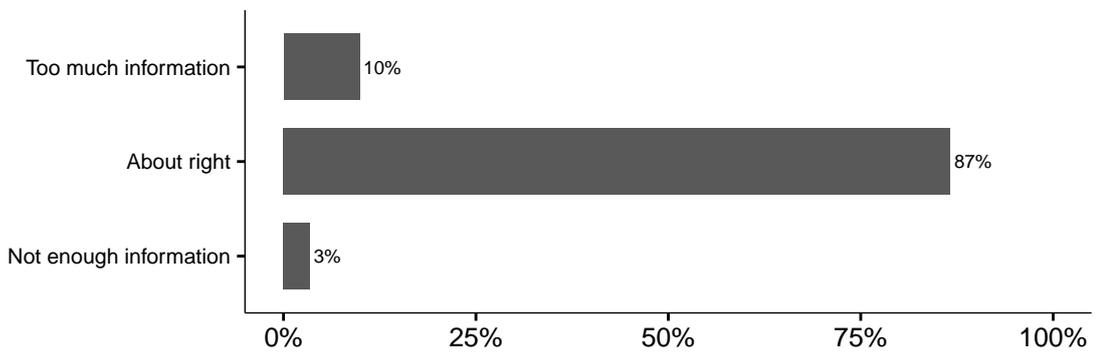
Most respondents (87%) thought that the level and detail of information they received from the RIPE NCC was about right, while 10% felt it was too much and 3% thought it wasn’t enough (Figure 10).

Figure 9: LIR Portal suggestions/comments



N=3352 (Members and other interested parties)

Figure 10: Level/detail of information

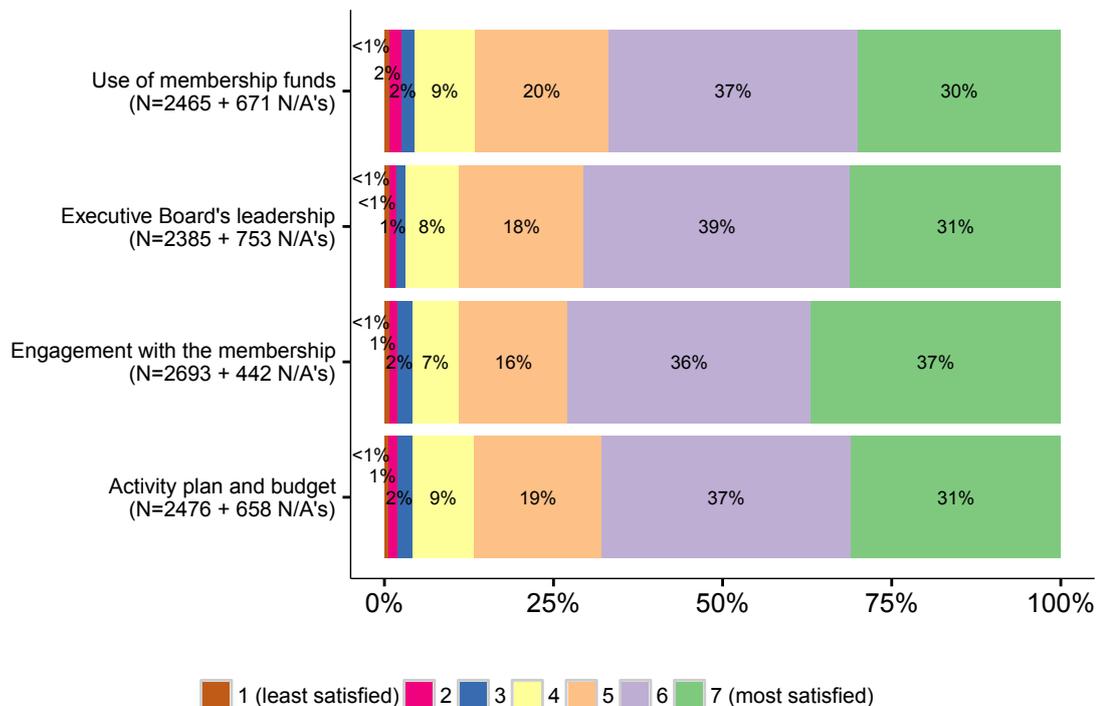


N=3352 (Members and other interested parties)

5 Corporate Governance

Overall, respondents seemed generally satisfied with all points related to the RIPE NCC’s corporate governance (Figure 11). Levels of satisfaction were highest with the RIPE NCC’s engagement with the membership. 89% gave a score of 5 or higher out of a possible 7. Respondents seemed generally satisfied also with matters relating to the organisation’s corporate governance. 88% of respondents gave a 5 or higher for their level of satisfaction with the RIPE NCC Executive Board’s leadership. Levels of satisfaction for the use of membership funds and for the RIPE NCC Activity Plan and Budget were identical (87% gave a score of 5 or higher out of a possible 7).

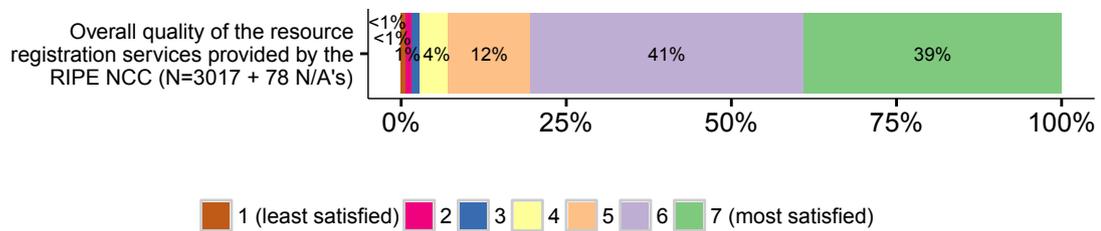
Figure 11: Satisfaction: Corporate Governance



6 Resource Registration Services

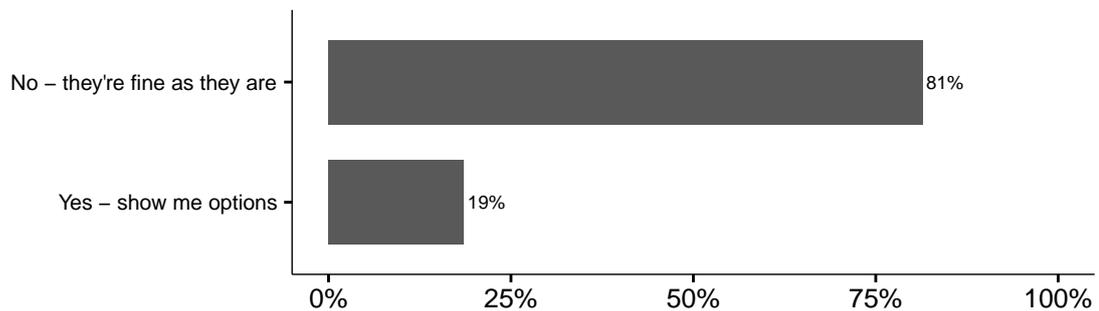
Respondents answered very favourably when asked about their level of satisfaction with the overall quality of the resource registration services provided by the RIPE NCC (80% gave a 5 or higher out of a possible 7 to the question) (Figure 12).

Figure 12: Overall quality of the resource registration services provided by the RIPE NCC



While the vast majority of respondents (81%) said that the RIPE NCC's resource registration services were fine as they were, almost 20% thought that the resource registration services could be improved (Figure 13).

Figure 13: Aspects of the RIPE NCC's resource registration services that could be improved?



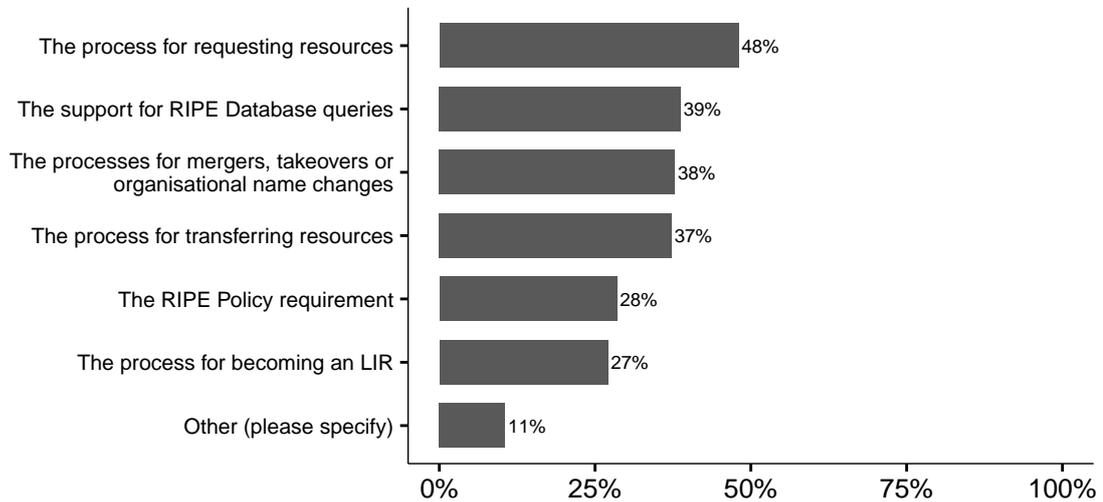
N=3095 (Members only)

The breakdown on how these respondents thought these services could be improved are found in Figure 14. The process for becoming an LIR was selected most often (48% of those who thought services could be improved, followed almost equally by the support for the RIPE Database queries (39%), the processes for mergers, takeovers or organisational name changes (38%) and the process for transferring resources (37%).

The breakdown of responses by industry (Figure 15) and membership (Figure 16) types showed very similar trends. The only exceptions were perhaps in the processes for mergers, takeovers or organisational name changes as well as the process for becoming an LIR.

Here, respondents from hosting companies seemed to differ somewhat from the other industries, with fewer respondents saying that the processes for mergers etc. needed to be improved (29% of hosting company respondents versus 42%, 32% and 44% from other industries) (Figure 15). Hosting company respondents in-

Figure 14: Which aspects of the RIPE NCC’s resource registration services do you think could be improved? (Choose multiple)

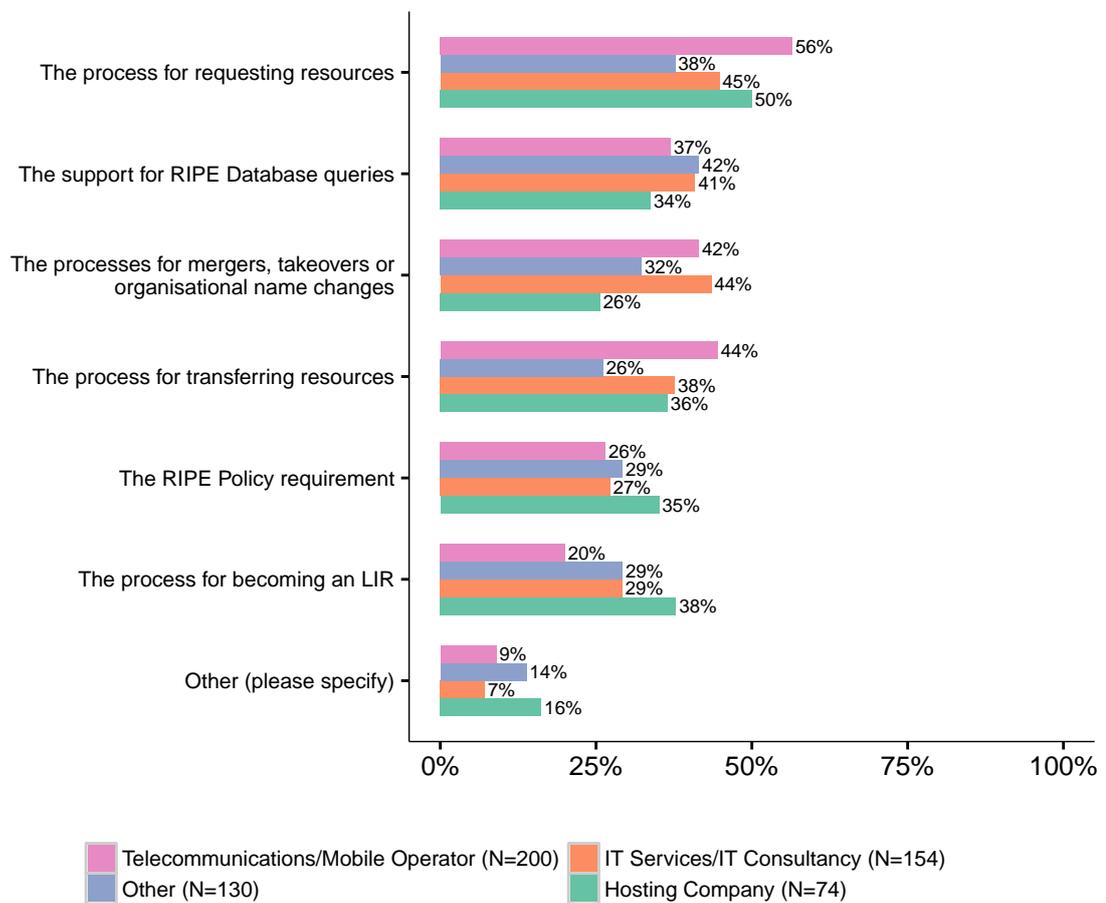


N=558 (Members only)

stead seemed more inclined than their counterparts to think that the process for becoming an LIR needed to be improved (38% of hosting company respondents indicated this versus 20% respondents from the Telecommunication/Mobile Operator industry, and 29% respondents from the IT Services/IT Consultancy group and Other group inclusive). It is important to note that since the sample (N) size for Hosting Companies is roughly 50% smaller than other industry groups, it should be interpreted with caution.

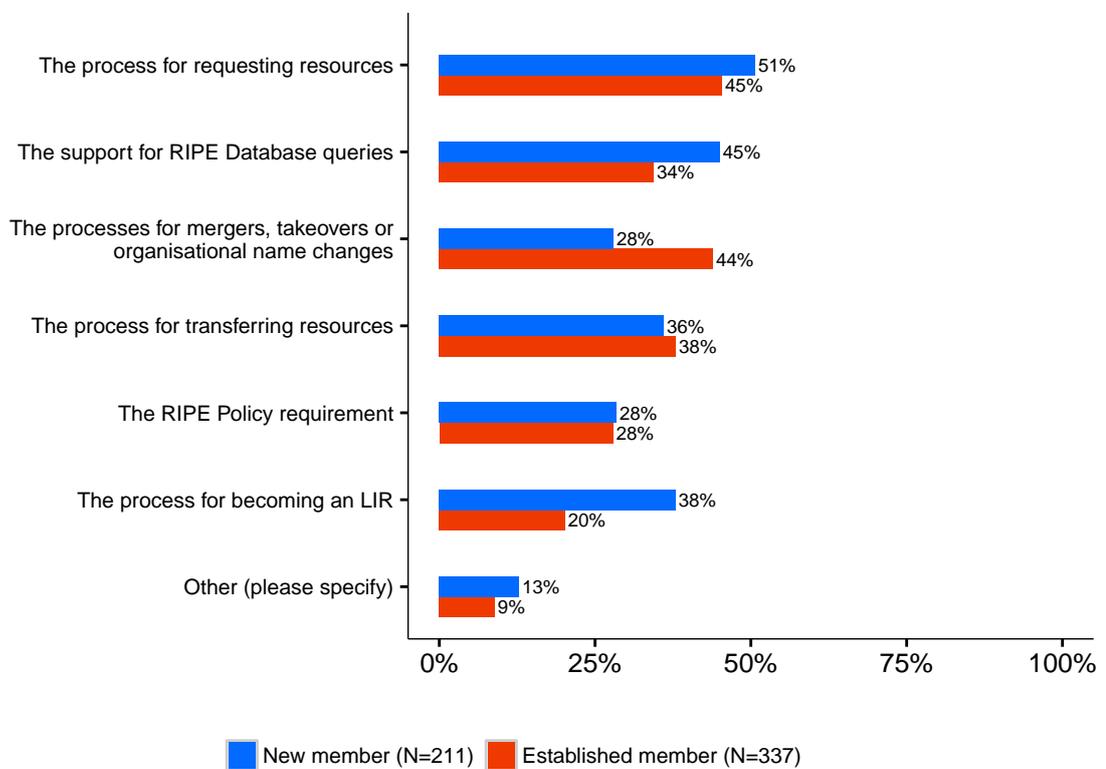
This same pattern could be observed in new member respondents who were less inclined to think that the processes for mergers, takeovers or organisational name changes should be improved (28% versus 44% of established member respondents) while they thought that the process for becoming an LIR needed more improvement than established member respondents did (38% versus 20%) (Figure 16).

Figure 15: Which aspects of the RIPE NCC’s resource registration services do you think could be improved? (Choose multiple)



N=558 (Members only)

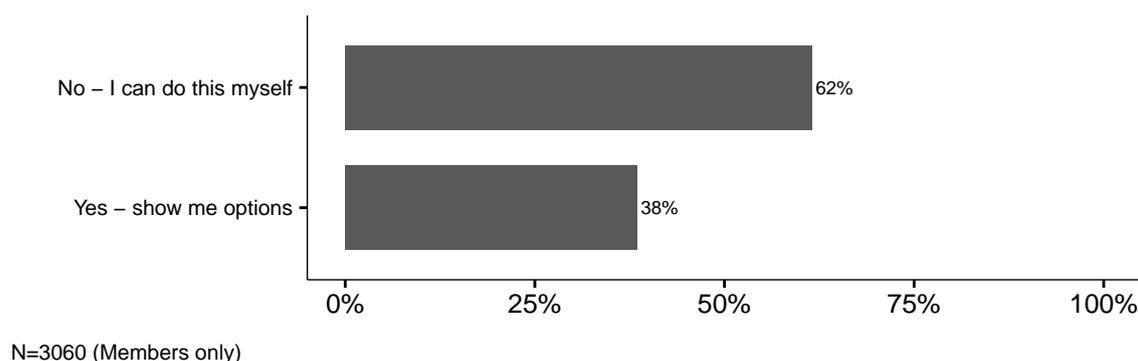
Figure 16: Which aspects of the RIPE NCC’s resource registration services do you think could be improved? (Choose multiple)



N=548 (Members only)

Roughly 60% of respondents indicated that they could keep their contact data up to date by themselves, while almost 40% showed interest in having the RIPE NCC help them with this task (Figure 17).

Figure 17: Could the RIPE NCC help you keep your contact data up to date?



The top three most selected options for receiving help from the RIPE NCC with updating personal data on Resource Registration Services were (Figure 18):

1. Send an annual request to members to confirm that their contact data is correct (59%)
2. Send reminders via email to check and update their contact data (56%)
3. Send automated reminders in the LIR Portal to check and update members' contact data (48%)

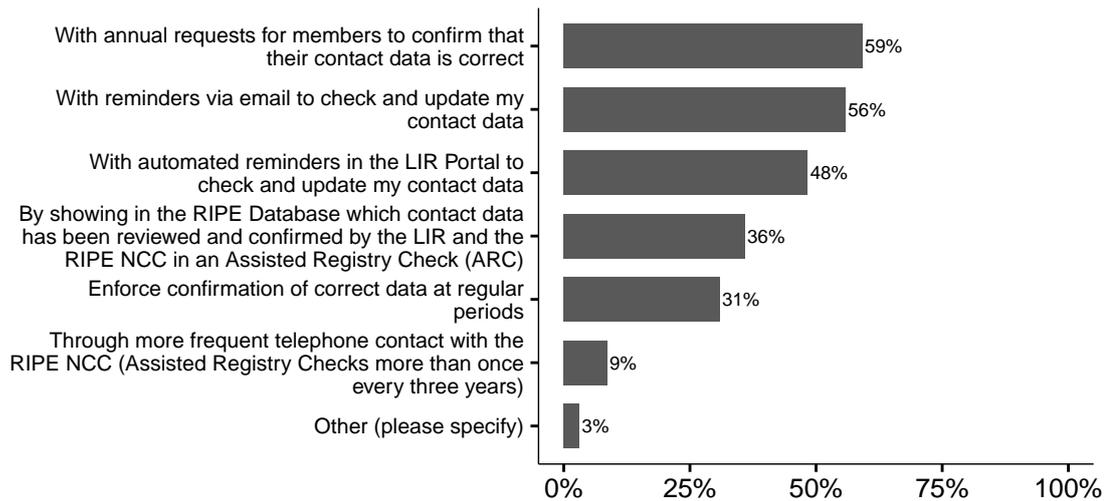
The same trends were mostly observed when breaking down the responses by industry, membership type and region.

Almost three quarters of respondents indicated that they could manage the registration process for members' infrastructure and customer assignments in the RIPE Database on their own (74%), while the rest said they wanted help with the process (Figure 19).

77% of respondents who wanted help with the RIPE NCC registration process indicated that they wanted a single location in the LIR Portal where they could register an assignment, create a ROUTE object and register a reverse DNS delegation (Figure 20). 68% who wanted help with the registration process also specified that they wanted support to make the assignment registration easier via the RIPE Database. Almost 45% of respondents who said they wanted help with the registration process indicated that they wanted to be allowed to register additional customers. Again, similar trends were broadly observed in responses when broken down by industry and membership type.

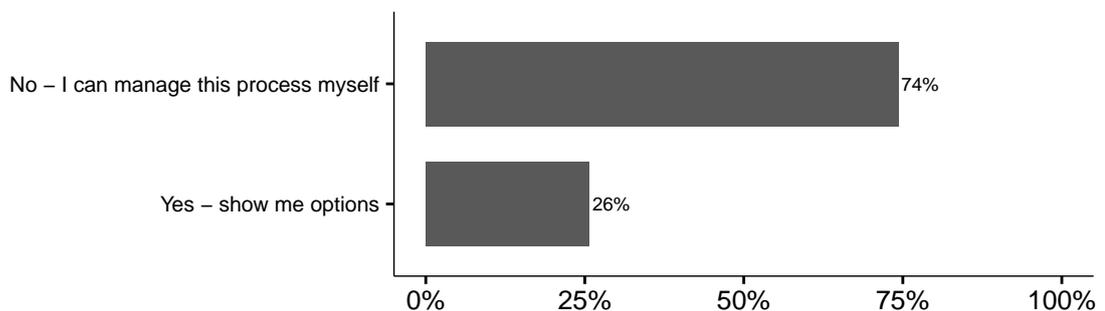
Overall, respondents seemed satisfied with the RIPE NCC resource registration services. However, there were consistently roughly 40% of respondents who

Figure 18: How could the RIPE NCC help you to keep your contact data up to date? (Choose multiple)



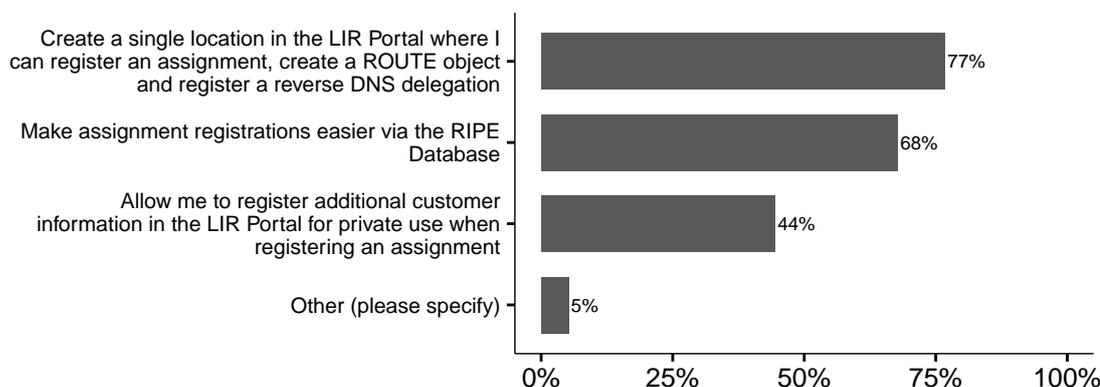
N=1156 (Members only)

Figure 19: Could RIPE NCC help you with the registration process?



N=3015 (Members only)

Figure 20: How could the RIPE NCC help with the registration process for members' infrastructure and customer assignments in the RIPE Database? (Choose multiple)



N=767 (Members only)

would like to receive more help with these services. Almost 200 respondents shared additional comments or suggestions for improving the RIPE NCC's resource registration services (see Q19 in Appendix 4). Their answers have highlighted that the following things could improve the services in general:

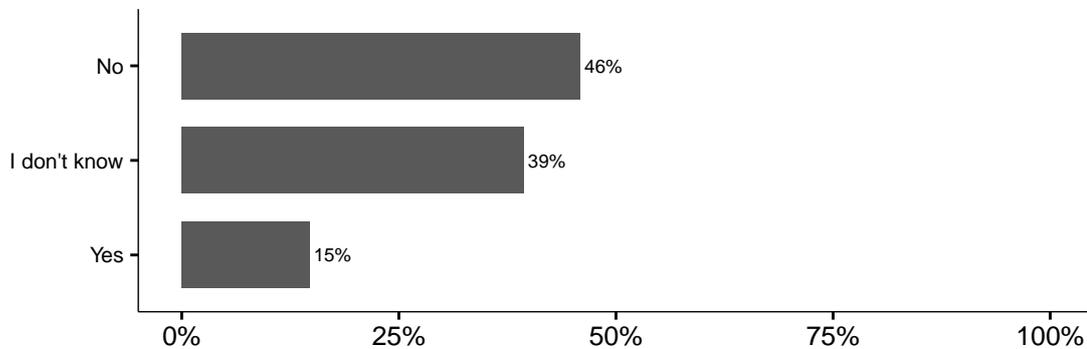
- Simplify and make the procedures easier by improving the user interface.
- Provide multi-lingual services, and online and direct support on how to navigate and use the registration services.
- Keep contact information private to prevent users from receiving lots of spam.

Some respondents also expressed their dissatisfaction with the RIPE NCC's current management of IPv4 addresses and migration towards IPv6. They felt that it was unfair for new and smaller members who needed these resources to not have access to them while IPv4 addresses were being resold, monopolised and/or left unused by larger organisations.

7 Resource Certification (RPKI)

Very few respondents confirmed that their IP address space was certified using RPKI. Only 15% of respondents said it was, while 46% said it wasn't and 39% said they didn't know (Figure 21).

Figure 21: IP address space certified using RPKI?

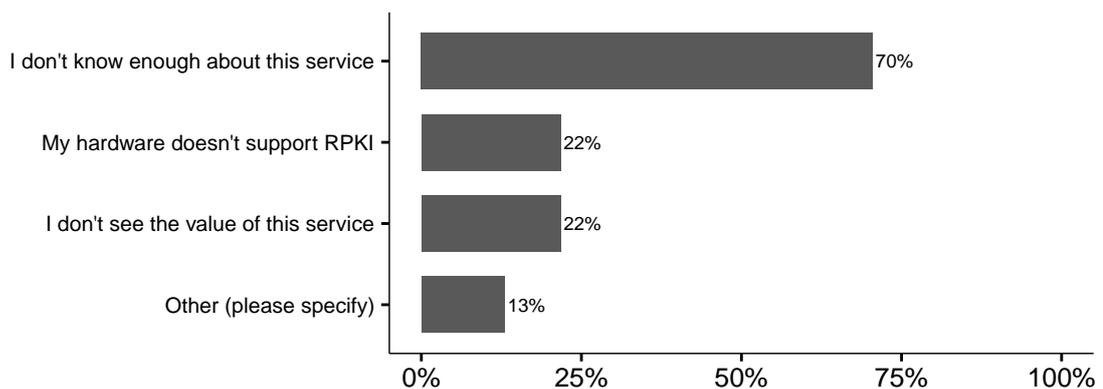


N=2976 (Members only)

7.1 Reasons for not using RPKI services

The main reason for this might be that people weren't well informed about the service. 56% of respondents who said they didn't use RPKI said they didn't know enough about the service, while equal amounts of respondents (17%) also said they either didn't see the value of this service or that their hardware didn't support RPKI (Figure 22).

Figure 22: What reasons do you have for not certifying your address space? (Choose multiple)



N=1362 (Members only)

Other reasons (10% of respondents) cited were often related to these points. While some respondents said they were in the process of getting certified or had the intention of doing so, others said they were insufficiently informed about RPKI and its potential risks. Time, incompatible hardware, the complexity of the process, and the required cost and (human) resources were also given as reasons for not adopting RPKI.

Many of these respondents also indicated that RPKI certification either wasn't sufficiently widespread, worth the effort or a priority for their organisation at this time. Still, the lack of RPKI uptake doesn't necessarily mean that respondents were against it (although there were some). Instead, the problem seems to be a lack of perceived need or value. This lack of perceived need or value is possibly why some have not yet taken the time to adopt RPKI or make it an immediate priority. The comments also showed that there were quite a few who planned to implement RPKI when they had the time or other priorities were met.

Overall, reasons for not certifying address space can be summarized as:

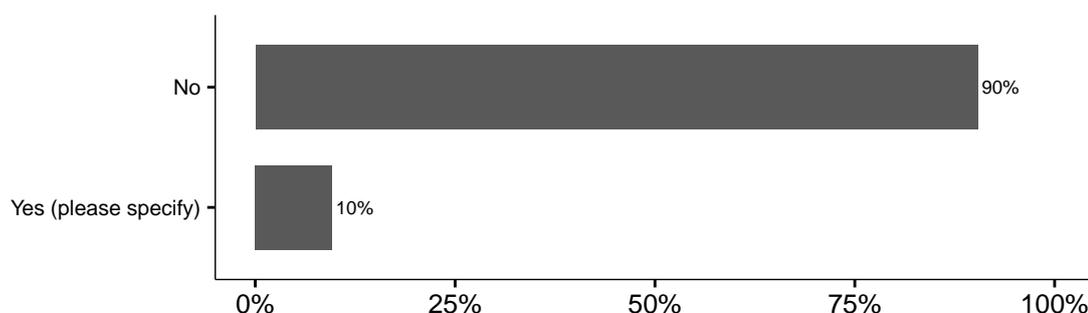
- Lack of time to implement and/or inform oneself about it properly
- Lack of resources both in cost, knowledge and human and computational resources
- Lack of perceived value, need and incentive, which in turn makes it a non-priority
- Distrust in its infrastructure and how it might be abused

Industry and membership type didn't seem to matter too much here. The majority of respondents from all industries and membership types who didn't use RPKI consistently said didn't know enough about RPKI to use this service.

7.2 Improvements that could be made

Out of the respondents who said they used RPKI services (10%, Figure 21), most overwhelmingly said that the RIPE NCC didn't need to make any improvements to RPKI (90%) (Figure 23). Those who replied that it needed improvements (10%) provided suggestions that can mostly be summarized as improving support, documentation and best practices (see Appendix 4 for all answers).

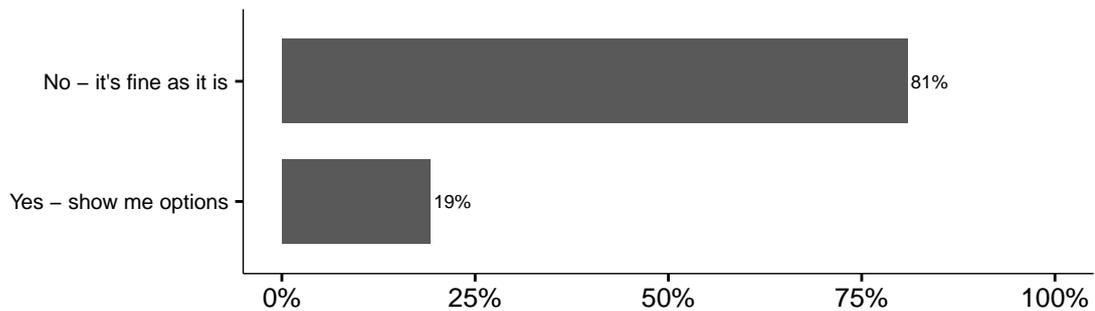
Figure 23: Improvements that the RIPE NCC could make to the RPKI system?



N=437 (Members only)

The majority of respondents who used RPKI services (81%) said that the RIPE NCC validator was fine as it was while 19% thought that it could be improved (Figure 24).

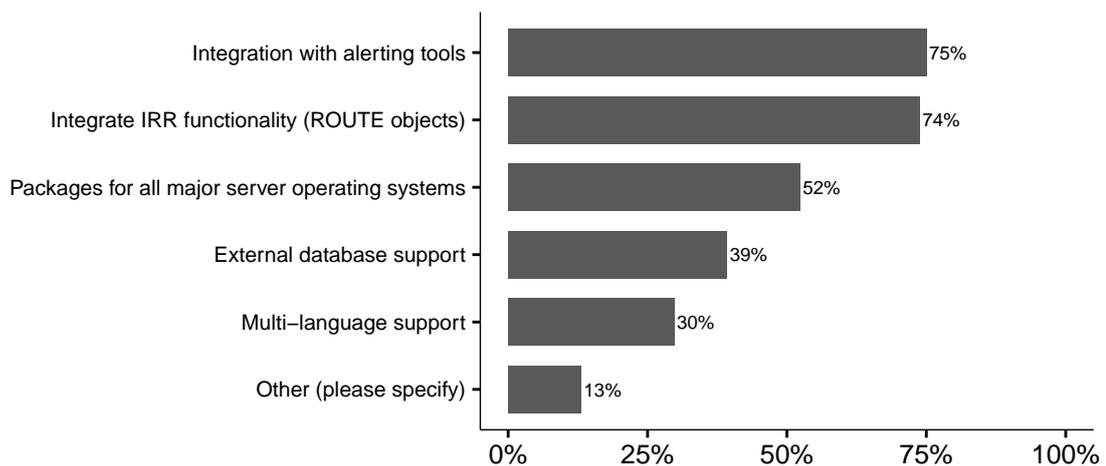
Figure 24: Could the RIPE NCC make improvements to the RPKI Validator?



N=439 (Members only)

Integration with alerting tools (selected by 75% of respondents) and integration with IPR functionality (ROUTE objects)(selected by 74%) were most often chosen as improvements that could be made by those who thought the RPKI Validator could be improved (Figure 25).

Figure 25: Which improvements would you like to see made to the RPKI Validator? (Choose multiple)



N=84 (Members only)

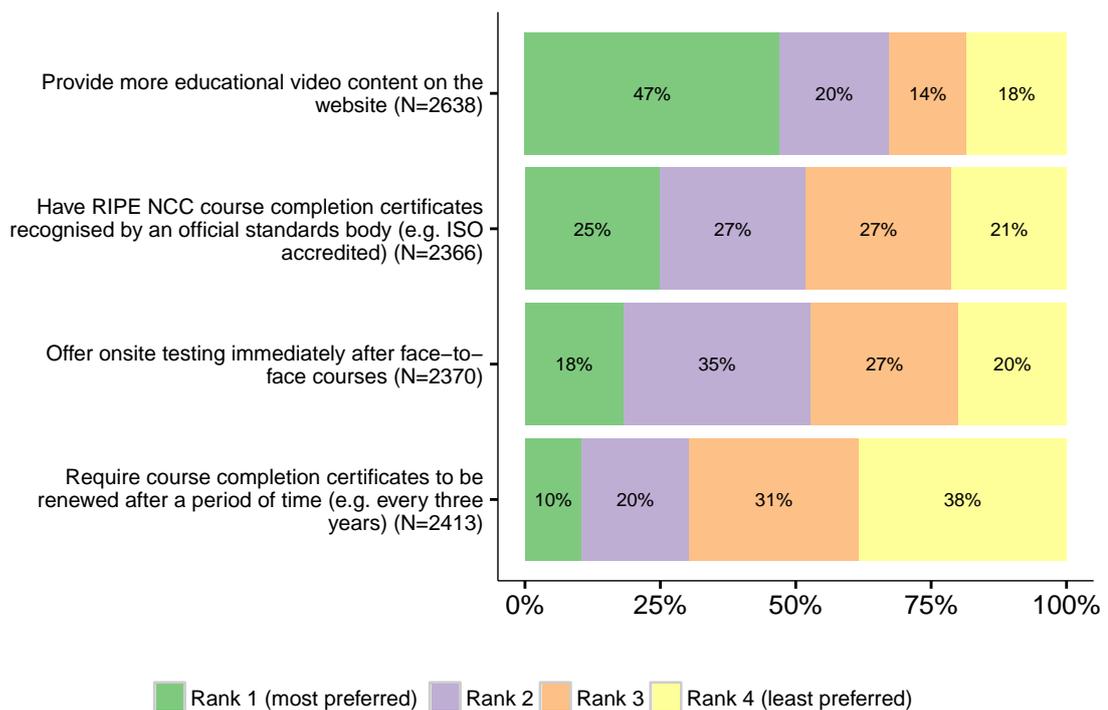
On the whole, this part of the survey has highlighted that the majority of respondents do not currently use RPKI services. Reasons for this appear to be that they generally do not feel well informed about them and do not sufficiently understand the service, or have the time or need to adopt them. Those who did

use the service showed high levels of satisfaction with it and there were quite a few who planned to implement RPKI when they had the time or other priorities were met.

8 Training Services

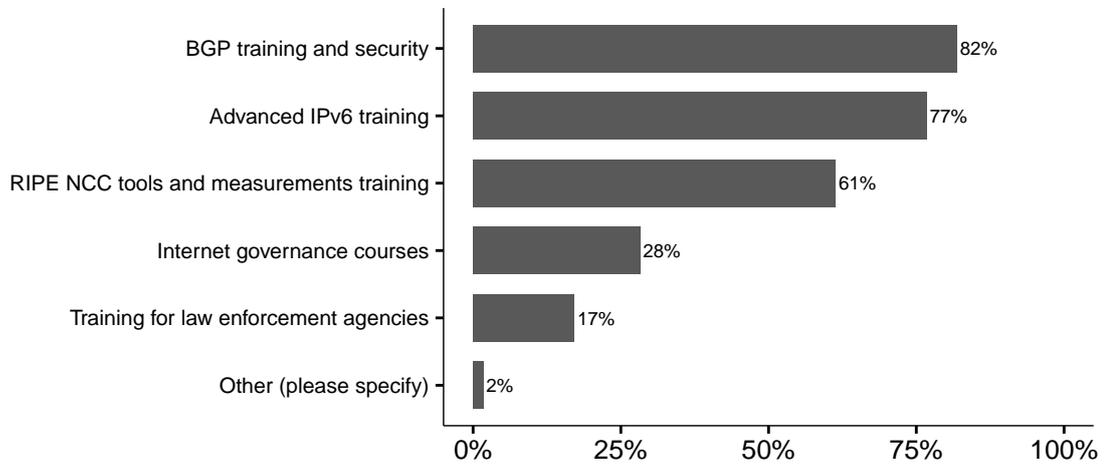
Respondents were next asked about RIPE NCC training services and asked to rank certain proposed improvements by order of preference (Figure 26). “Provide more educational video content on the website” was ranked first most often (47% of respondents ranked this option first). The requirement for course completion certificates to be renewed after a certain time period was ranked last most often (38% of respondents selected this option as their 4th choice).

Figure 26: Rank the following options in order of preference on how beneficial they would be for RIPE NCC training



BGP training and security was selected most often by respondents (82%), followed by advanced IPV6 training (77%) and RIPE NCC tools and measurements training (61%) when asked about which topics the RIPE NCC should prioritise next when adding new ones to its online training courses (Figure 27).

Figure 27: Priorities for online training (Choose multiple)



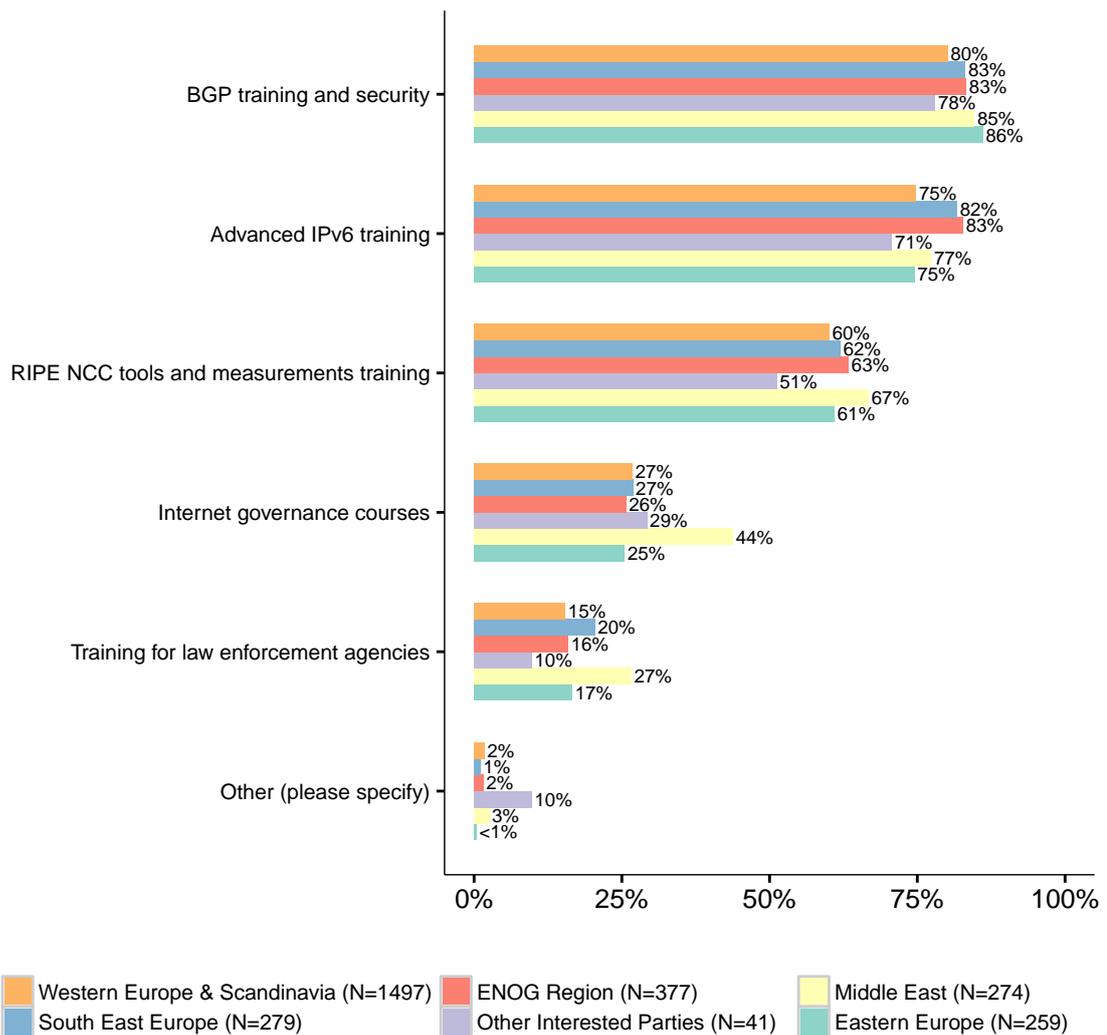
N=2727 (Members only)

Order of priorities were generally the same among industries and memberships. The same trend was also observed among different regions, with a slightly stronger support for Internet governance courses in the Middle East (Figure 28).

Just over 100 people gave comments and/or suggestions on how to improve the RIPE NCC'S face-to-face or online training services (see Q27 in Appendix 4). Most of these respondents wanted more content, and in more languages for both online and face-to-face trainings. More frequent sessions were also requested as were more sessions in different member regions.

Overall, this section underlines a broad preference from respondents for the RIPE NCC to provide more educational video content on their website, and that new topics should focus on BGP training and security, advanced IPv6 training as well as instructions on RIPE NCC tools and measurements.

Figure 28: Priorities for online training (Choose multiple)

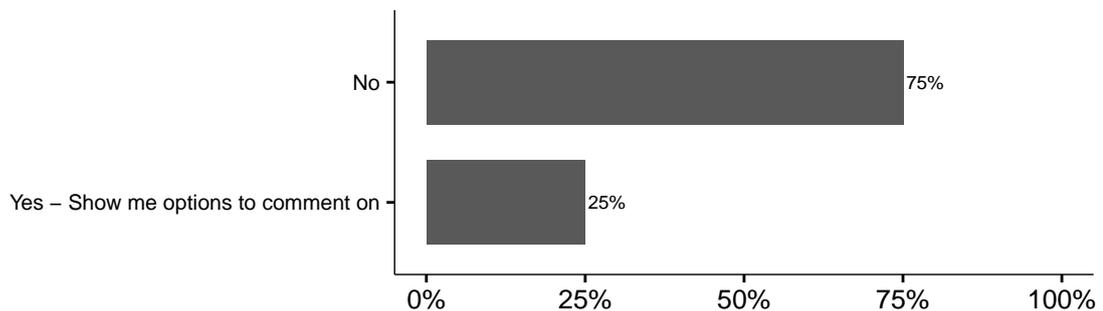


N=2727 (Members only)

9 The RIPE Policy Development Process (PDP)

The majority of respondents (75%) have indicated that they did not notice any of the changes aimed at increasing participation in the RIPE Policy Development Process (PDP) in recent years (Figure 29).

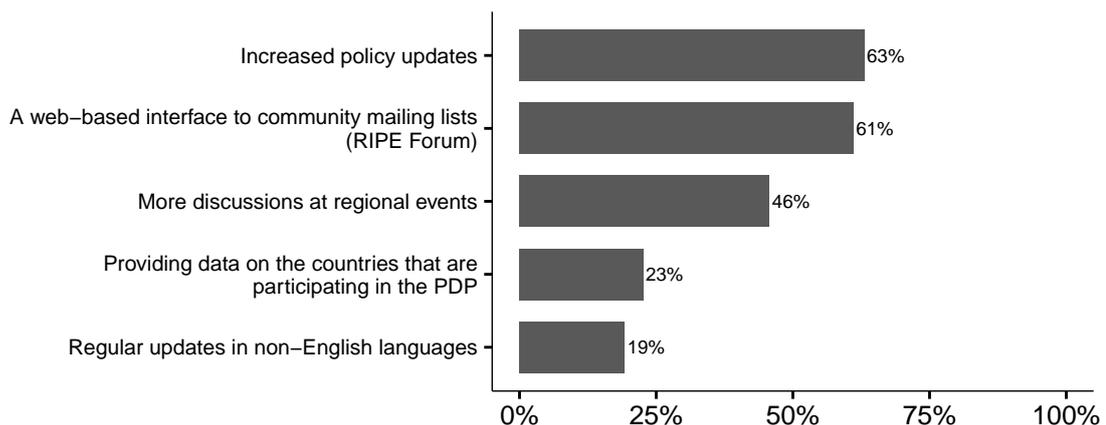
Figure 29: Noticed changes aimed at increasing participation in the RIPE Policy Development Process in recent years?



N=3271 (Members and other interested parties)

Increased policy updates and a web-based interface for community mailing lists (e.g., RIPE Forum) were noted most often as being beneficial to this process among respondents who did notice changes (Figure 30).

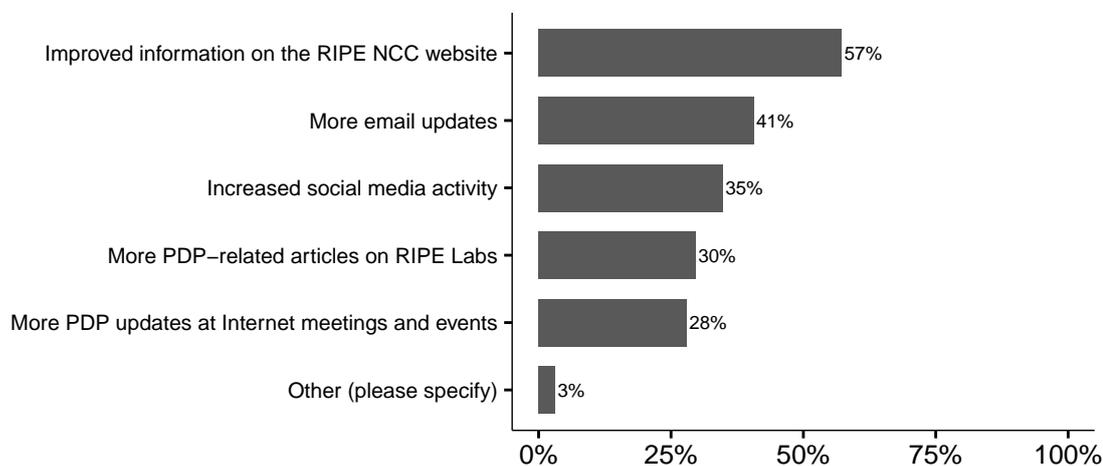
Figure 30: Which of the following activities that the RIPE NCC has carried out to increase participation in the PDP have been beneficial? (Choose multiple)



N=796 (Members and other interested parties)

Respondents didn't have a very strong opinion on a single type of method that the RIPE NCC should use to further increase participation in the PDP. Results instead suggested that the RIPE could use multiple approaches. Improved

Figure 31: What type of methods should the RIPE NCC be using to further increase participation in the PDP? (Choose multiple)



N=2835 (Members and other interested parties)

information on the RIPE NCC website was chosen most often by respondents as a method to increase participation (57%), followed by more email updates (41%), increased social media activity (35%), more PDP-related articles on RIPE Labs (30%) and more PDP updates at Internet meetings and events (28%) (Figure 31).

This trend remained mostly consistent among industries and membership types, where “improved information on the RIPE NCC website” was most selected by all groups and remaining methods followed in the same order.

Overall, changes to the PDP in recent years have gone relatively unnoticed by respondents. Survey responses have highlighted that more could be done to inform respondents of these changes and that there is not one single activity that seems to have strongly contributed to increasing participation in the PDP.

Responses seem to indicate that online channels (e.g., the RIPE NCC’s website, email updates, social media activity) were the best way to increase PDP participation.

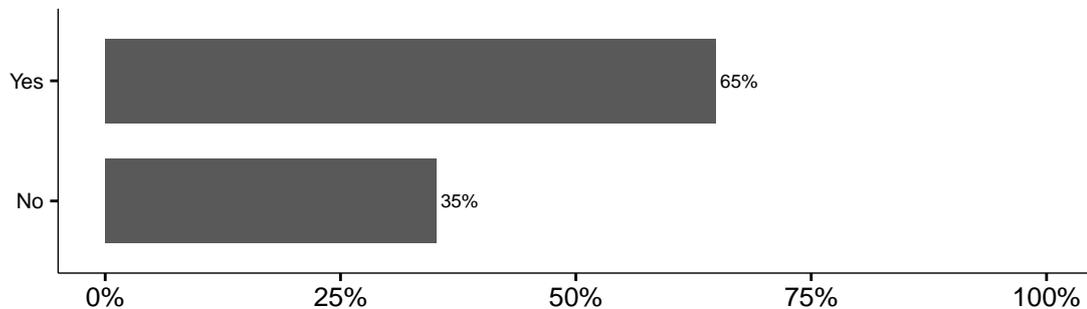
The some 100 comments collected through the survey (see Q31 in Appendix 4) seemed to indicate that more efficient communication could help, such as summaries and easier ways to track discussions and raise issues online. Questions of language and inclusion were also raised.

10 RIPE NCC Outreach and External Relations

In general, respondents thought it was a good idea for the RIPE NCC to engage with government regulators (65%) (Figure 32).

Creating better awareness and cooperation between governments and the technical community was selected most often by these respondents (79%) as being a

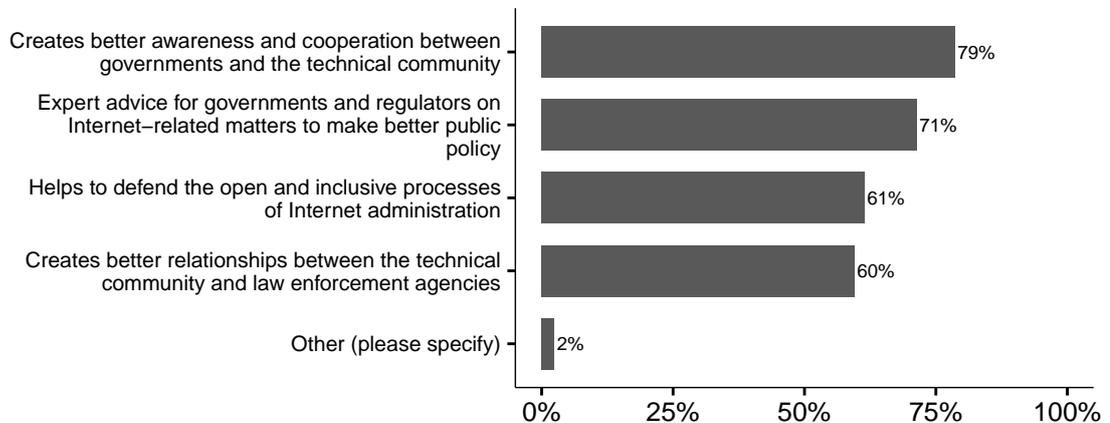
Figure 32: Good idea for the RIPE NCC to engage with governments and regulators?



N=3152 (Members and other interested parties)

benefit from this type of engagement (Figure 33). Other mentioned benefits didn't fall too far behind, making the spread pretty evenly distributed among listed benefits.

Figure 33: Benefits from engaging with governments and regulators (Choose multiple)

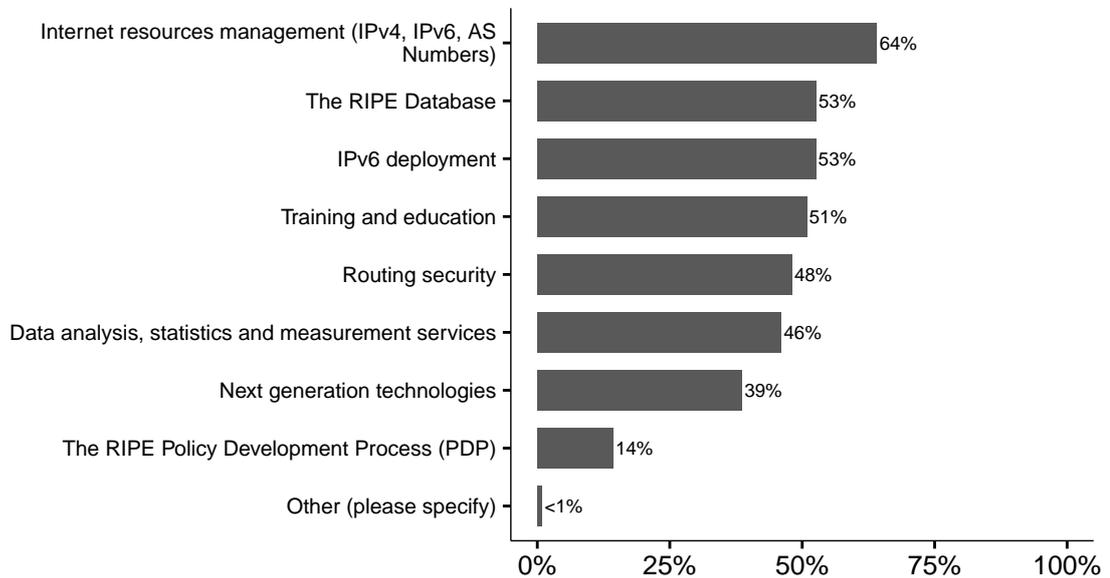


N=2038 (Members and other interested parties)

The RIPE NCC also asked respondents where non-RIPE NCC members could benefit from engagement with the organisation. Again, the range of answers selected was fairly equally distributed, but Internet resource management was selected most often by respondents (64%) (Figure 34).

Fewer than 100 respondents provided additional comments about the RIPE NCC's outreach and external relations (see Q35 in Appendix 4). While some remarks underlined the organisation's need to create more awareness and make more effort to reach out further, others questioned if this should really be part of the RIPE NCC's role.

Figure 34: Where could non-RIPE NCC members benefit from engagement with the RIPE NCC? (Choose multiple)

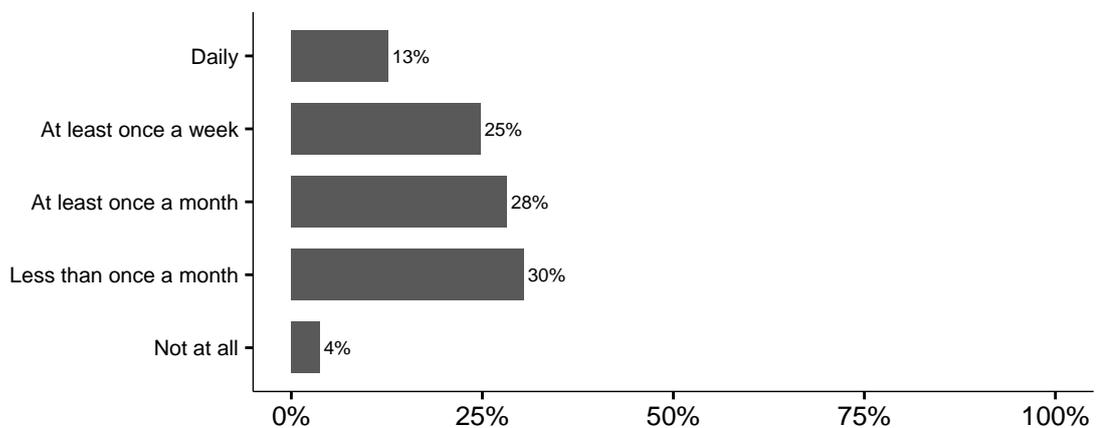


N=2977 (Members and other interested parties)

11 The RIPE Database

Slightly more than a third of respondents (38%) reported using the RIPE Database at least once a week or more (Figure 35), while 28% said they used it at least once a month and 30% said they used it less than once a month.

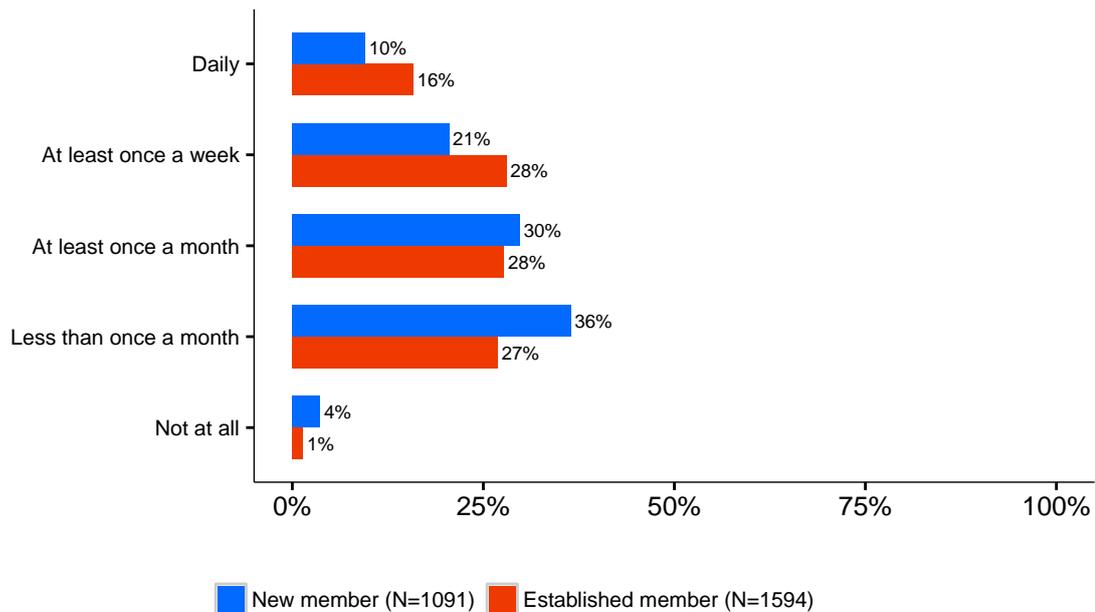
Figure 35: How often do you use the RIPE Database?



N=3117 (Members and other interested parties)

The same trends were generally observed across regions. However, established members seemed to use the RIPE Database more often than new members (Figure 36).

Figure 36: How often do you use the RIPE Database?



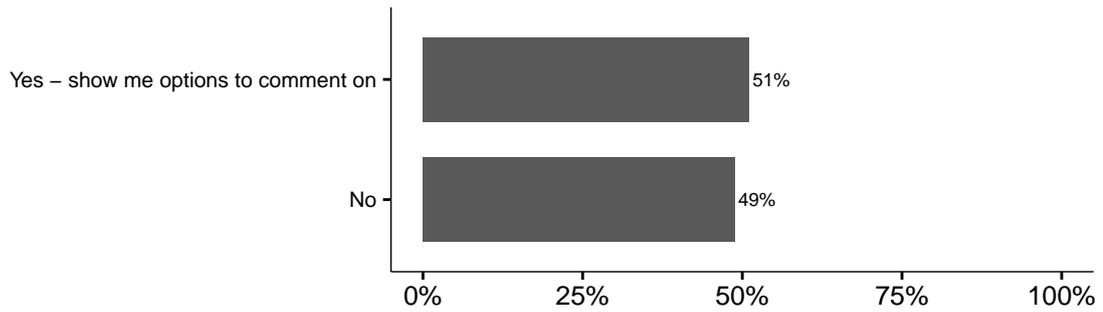
N=2685 (Members and other interested parties)

Respondents were quite divided in noticing changes to how the RIPE Database worked in the last two years (Figure 37). The removal of the “changed:” attribute and its replacement by the “created:” and “last-modified:” attributes was the most noted change by those who said they noted changes in the database (71%) (Figure 38). The other most noted changes were the integration of “abuse-c” contact creation (67%), the display of “diff” successful object modifications (50%) and the improved password reset procedure (19%). These same trends were observed in industry breakdowns.

Some 140 people made additional comments or suggestions for improvement (see Q39 in Appendix 4). Out of those comments, many were satisfied and didn’t have anything to add. The remainder asked for more technical support and tutorials, while others suggested that the RIPE Database could be more simple and easy to use. Some also suggested that certain attributes such as geolocation be improved, as well as the search and privacy for whois data.

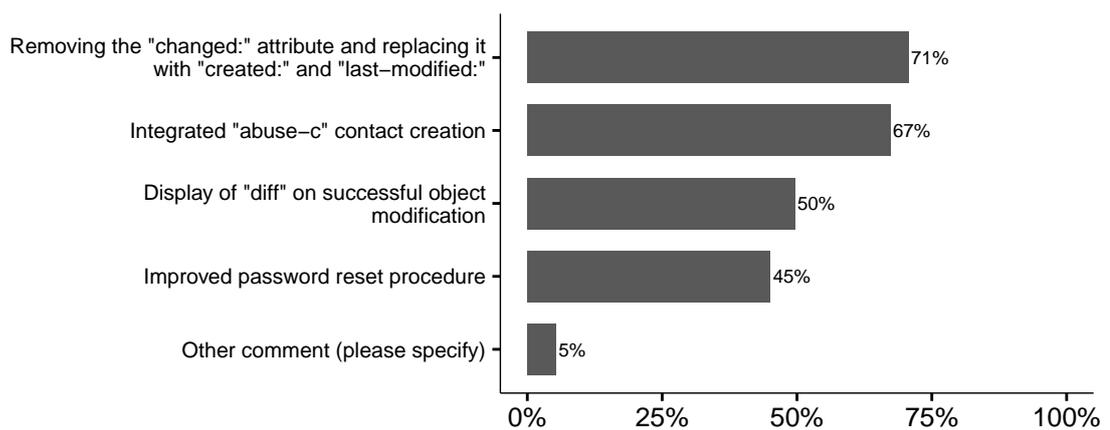
In summary, most respondents don’t use the RIPE Database on a daily basis. While certain comments received indicated that the removal of the “changed:” attribute was not helpful, there were some useful suggestions received for further improvement.

Figure 37: Have you noticed changes to how the RIPE Database works in the past two years?



N=3000 (Members and other interested parties)

Figure 38: Which of the following changes to the RIPE Database over the past two years have been beneficial for database users? (Choose multiple)

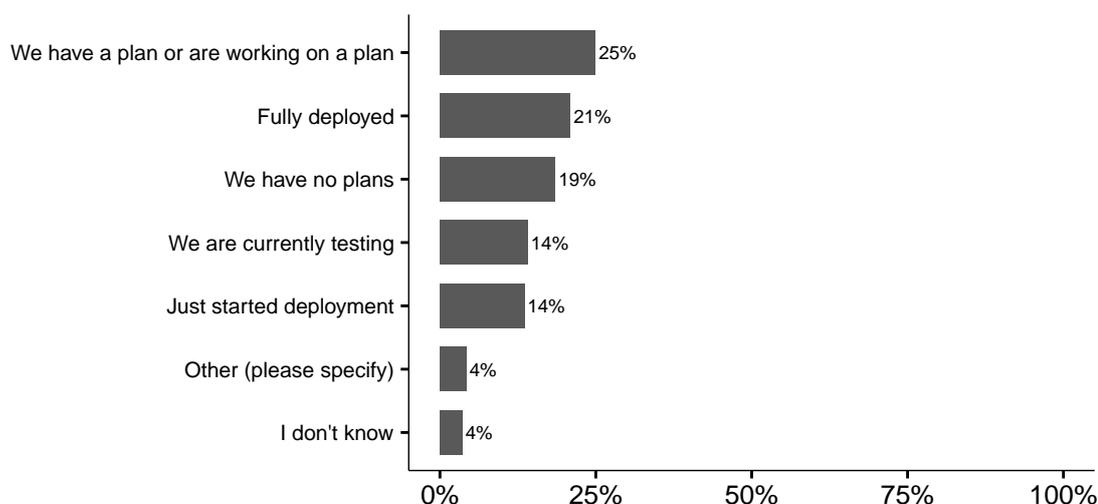


N=1498 (Members and other interested parties)

12 IPv6 Deployment

Out of all respondents, only 21% indicated that their IPv6 deployment was fully deployed, while 14% had just deployed (Figure 39). 40% had somewhat begun the process either with a plan or were working on one (25%) or were currently in testing (14%). Almost 20% said they currently had no plans to deploy IPv6.

Figure 39: What is the status of your network's IPv6 deployment?



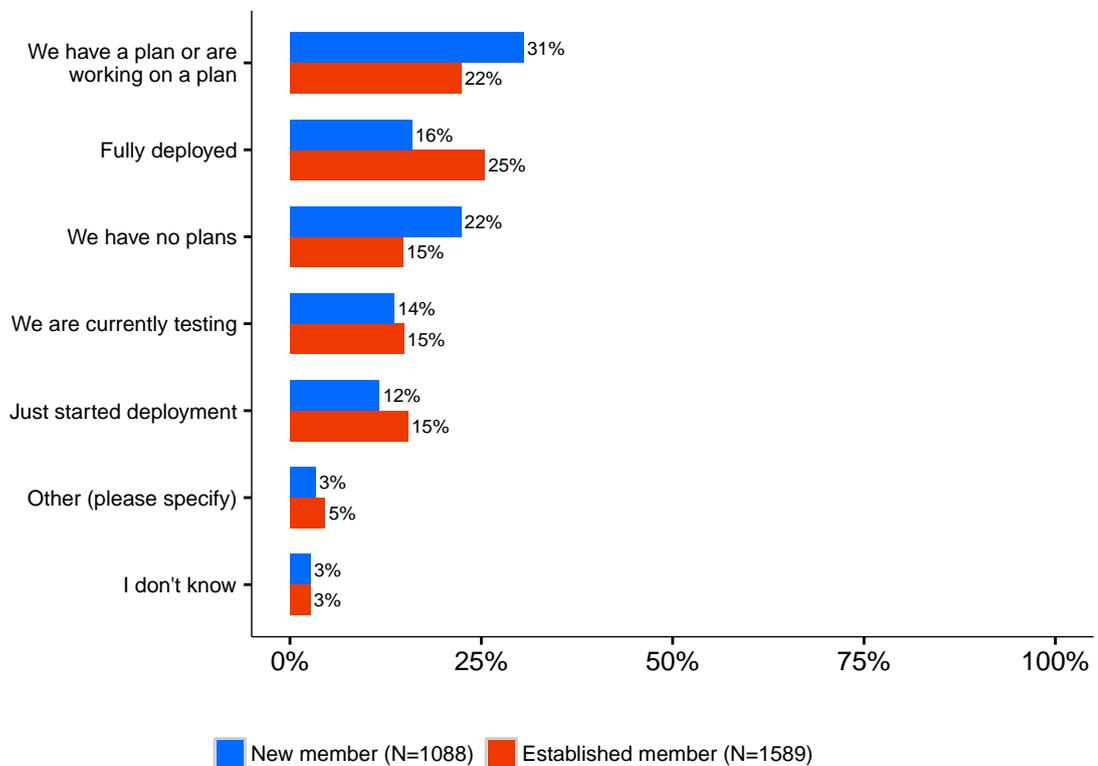
N=3098 (Members and other interested parties)

Established members tended to be more advanced than new members in the deployment of IPv6. A higher percentage of established members were fully or just deployed while there were more new members who were still in some sort of planning phase or had no plan (Figure 40).

There seemed to be a higher percentage of respondents from the Middle East who indicated that they had no plans for the IPv6 deployment in their network (34%), more than in any other region (Figure 41).

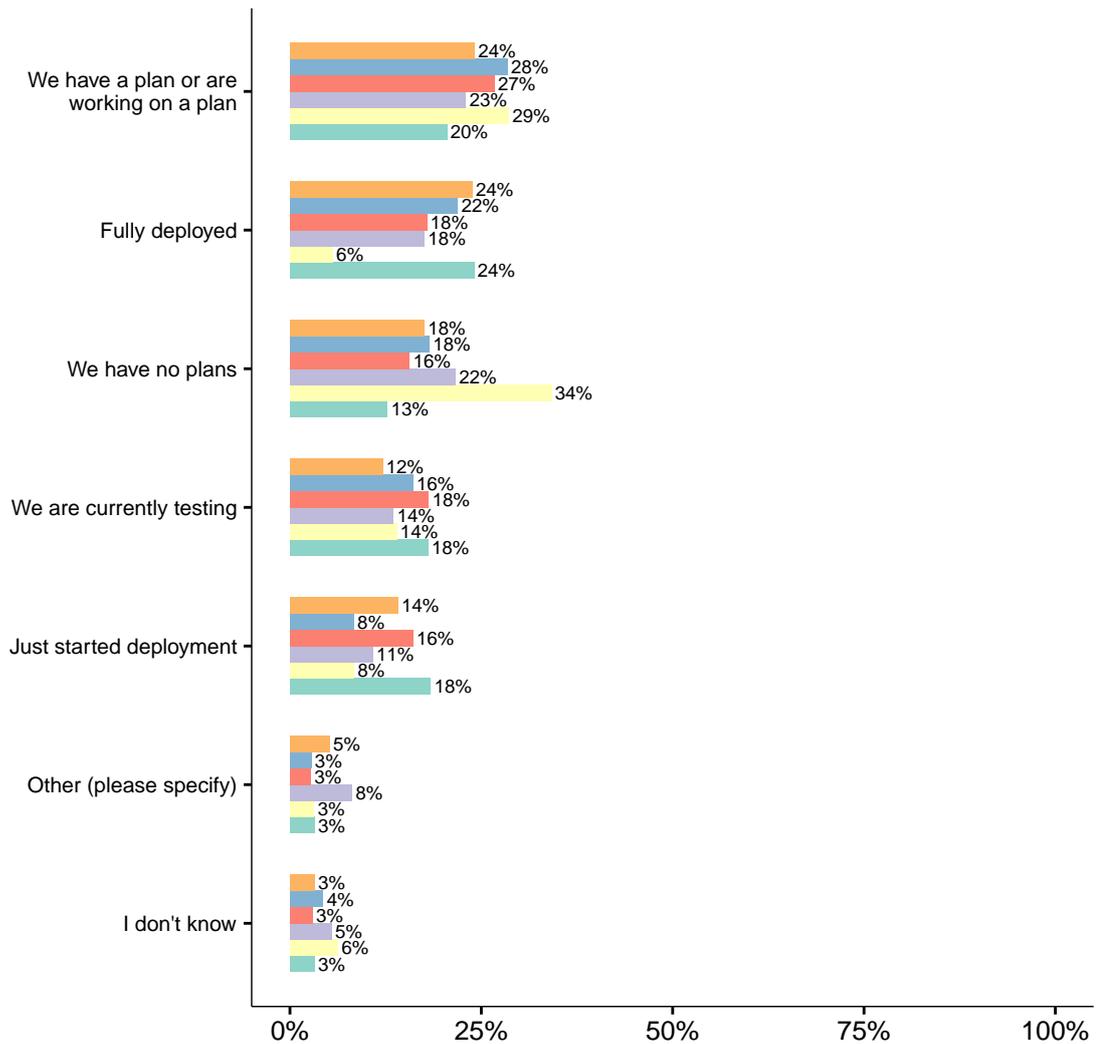
The lack of demand for IPv6 services was the most selected option for stopping respondents from deploying IPv6 (selected by 55%) (Figure 42). Other reasons that closely followed were lack of technical knowledge (27%), difficulty in convincing management (26%) and the respondent already having enough IPv4 space (24%). In the Middle East, a higher percentage of respondents also indicated that their suppliers don't support IPv6 (35% of Middle East respondents versus 19% of all respondents).

Figure 40: What is the status of your network's IPv6 deployment?



N=2677 (Members and other interested parties)

Figure 41: What is the status of your network's IPv6 deployment?

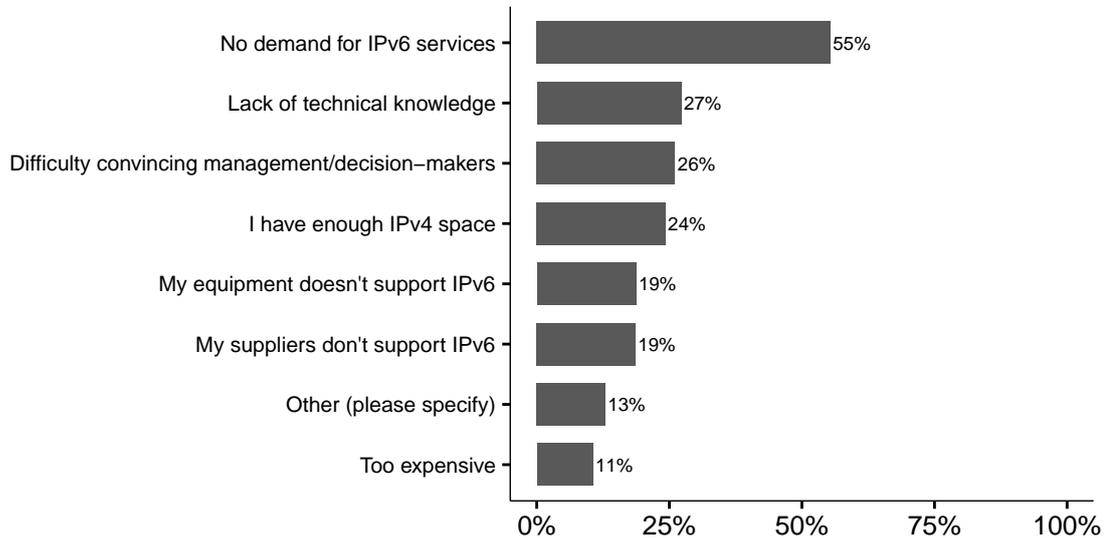


■ Western Europe & Scandinavia (N=1688)
 ■ ENOG Region (N=442)
 ■ Middle East (N=287)

■ South East Europe (N=324)
 ■ Other Interested Parties (N=74)
 ■ Eastern Europe (N=283)

N=3098 (Members and other interested parties)

Figure 42: What is stopping you from deploying IPv6? (Choose multiple)



N=2345 (Members and other interested parties)

Respondents were asked what could the RIPE NCC do to help organisations with their IPv6 deployment. The most selected choice was to “provide training for the staff” (57%) followed by “convincing customers to request IPv6” (51%). “Convince vendors to provide IPv6” and “Convince management/decision-makers of the need for IPv6” were both selected by just over 40% of respondents (Figure 43).

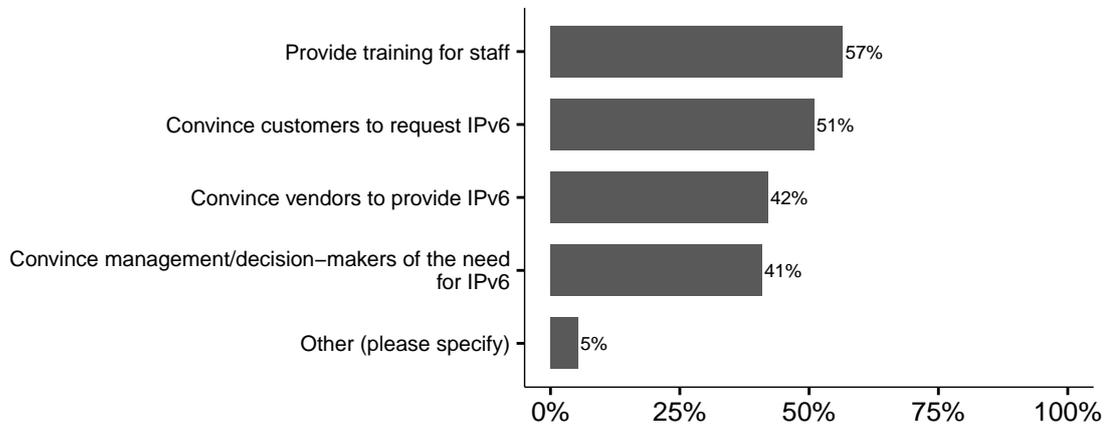
These trends didn’t differ much when broken down by industry, member type and region. Many respondents wished that the organisation would do more to inform consumers and enterprises on this matter.

In general, while only a minority of respondents have reported fully deploying their IPv6 networks, most are somewhere in the process, either early (planning, testing) or more advanced (just deployed). However, there were still roughly 20% that indicated they had no plans to deploy IPv6.

It was also indicated by respondents that lack of technical knowledge was also somewhat of a problem in deploying, and demand for RIPE NCC IPv6 courses are still in very high demand. Comments received indicated that many respondents liked RIPE NCC courses and materials.

Based on respondent feedback from the comments, a lack of time, or customer equipment that is not ready for IPv6 are also some of the biggest obstacles in deploying today.

Figure 43: What could the RIPE NCC do to help you or other organisations with IPv6 deployment? (Choose multiple)

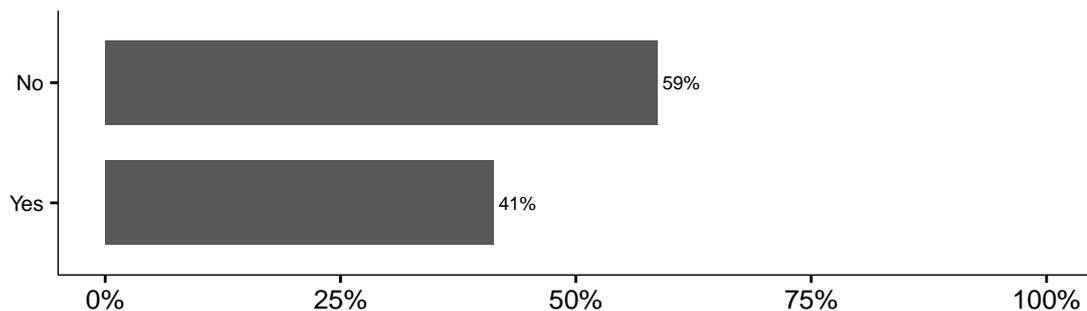


N=2706 (Members and other interested parties)

13 RIPE Atlas and RIPEstat

The majority of respondents (59%) said they did not use the RIPE Atlas (Figure 44). The highest percentage of respondents who indicated that they used it were from South East Europe (50% of respondents from this region used RIPE Atlas) (Figure 45).

Figure 44: Do you use RIPE Atlas?



N=3092 (Members and other interested parties)

83% of those who said they did use it or were involved with RIPE Atlas said they hosted a probe (Figure 46). All other activities were selected by less than 30% of respondents.

The main reasons why respondents used RIPE Atlas were “for the good of the Internet” (75%) followed by “for troubleshooting” (59%), “for a better understanding of operations” (51%), “for research purposes” (33%) and finally “to

Figure 45: Do you use RIPE Atlas?

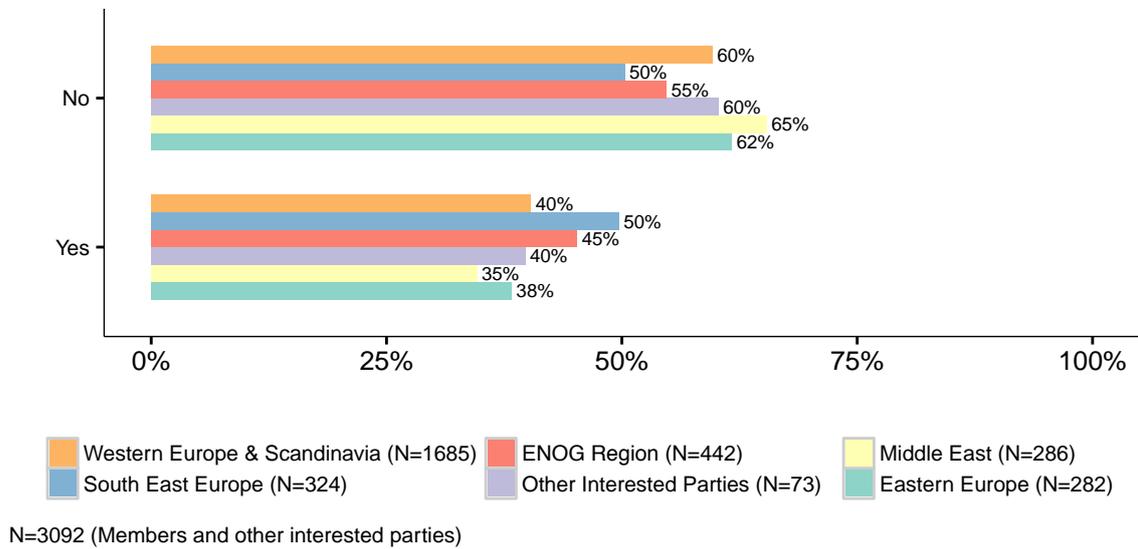
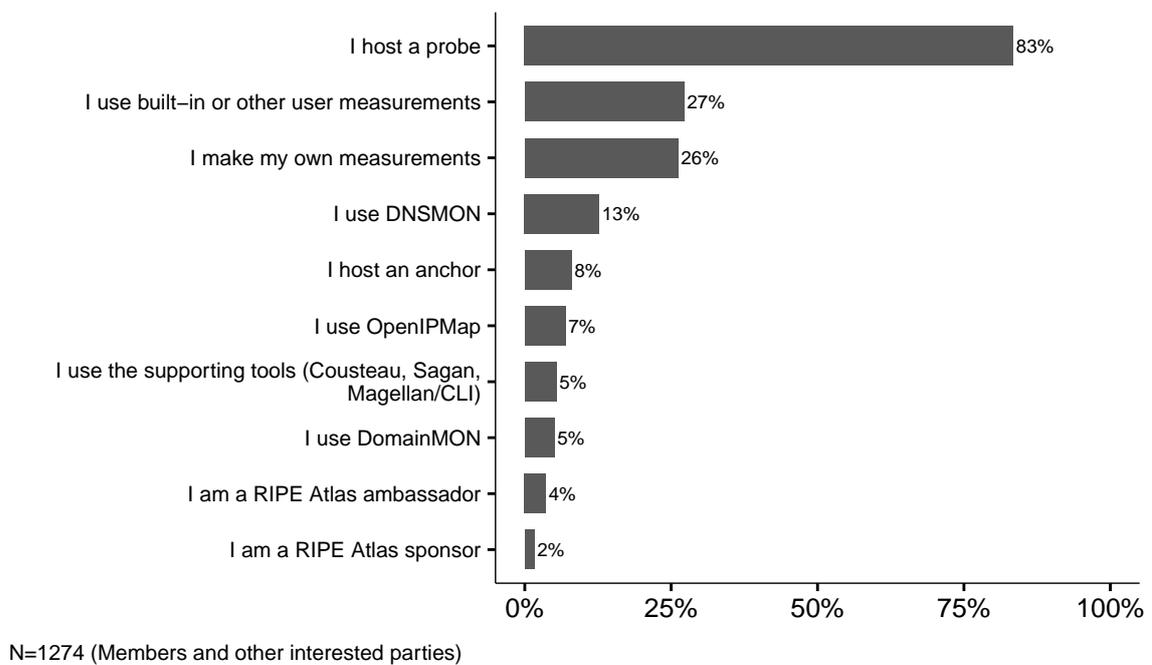
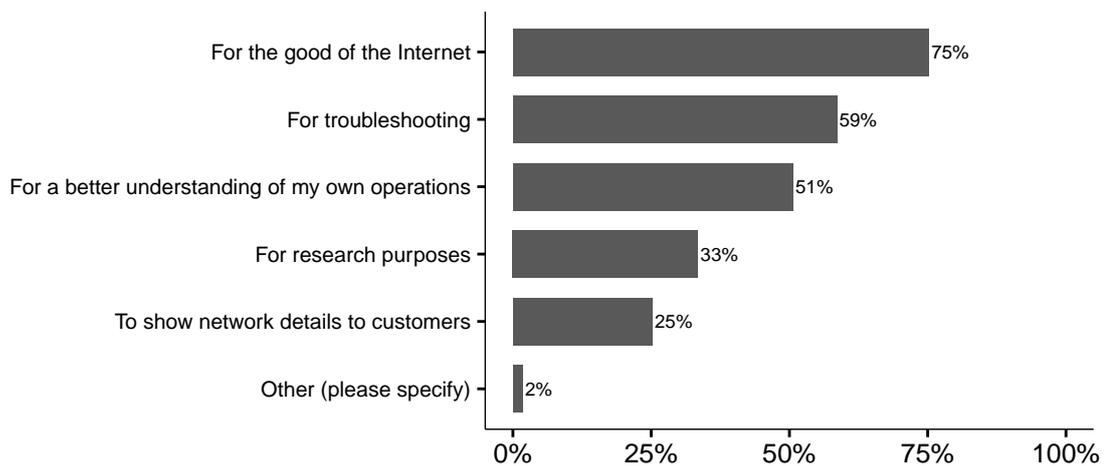


Figure 46: How do you use or are involved with RIPE Atlas?



show network details to customers” (25%) (Figure 47). These trends were similar throughout breakdowns by industry, membership type and region.

Figure 47: For what reasons do you use RIPE Atlas? (Choose multiple)



N=1274 (Members and other interested parties)

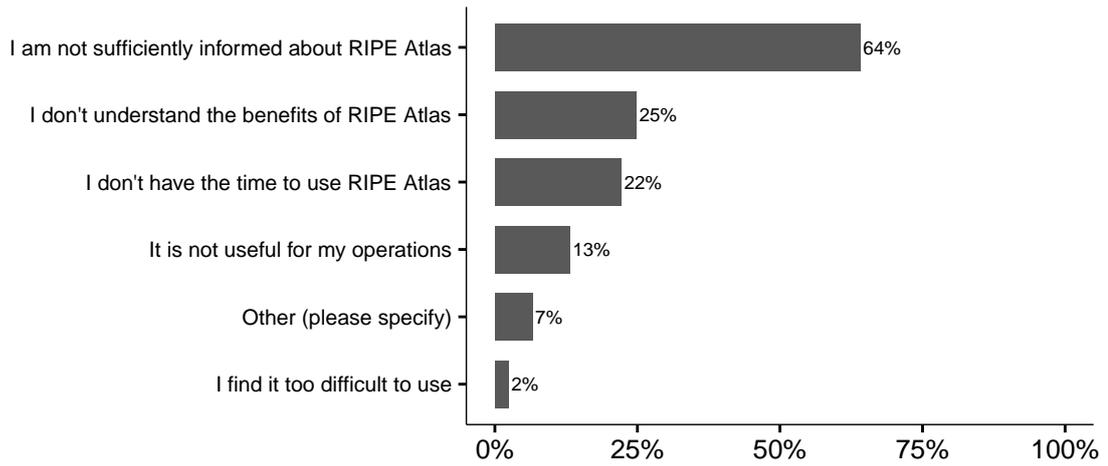
General comments and suggestions for improving RIPE Atlas features varied, but many asked for more documentation, training and support (see Q46 in Appendix 4). Many suggestions on specific improvements could be very helpful in enhancing the tool. Overall, the lack of use of the RIPE Atlas may be due to a widespread lack of awareness about its benefits.

Not being sufficiently informed about the tool was the most selected reason for not using RIPE Atlas (64% of respondents who don’t use RIPE Atlas), followed by not understanding its benefits (25%), not having the time (22%) and not being useful to their operations (13%) (Figure 48). No difference was noted when breaking down the data by region or industry.

Similarly to RIPE Atlas, the majority of respondents also don’t use RIPEstat (55% of respondents don’t versus 45% who do) (Figure 49). The most cited reason by respondents for not using RIPEstat was that they were not sufficiently informed about it (69%) (Figure 50). Almost 25% of respondents also indicated that they didn’t understand the benefits of RIPEstat. Less than 20% said it was related to a lack of time or usefulness to their operations. Trends were duplicated in industry and regional breakdowns.

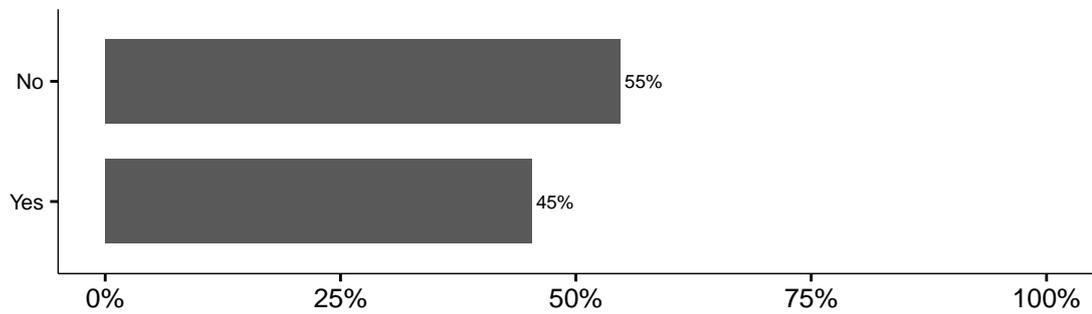
The same awareness problem seems to arise for RIPEstat as for RIPE Atlas. Yet comments for improving it were very positive and specific suggestions could likewise be very useful (see Q50 in Appendix 4).

Figure 48: Why do you not use RIPE Atlas? (Choose multiple)



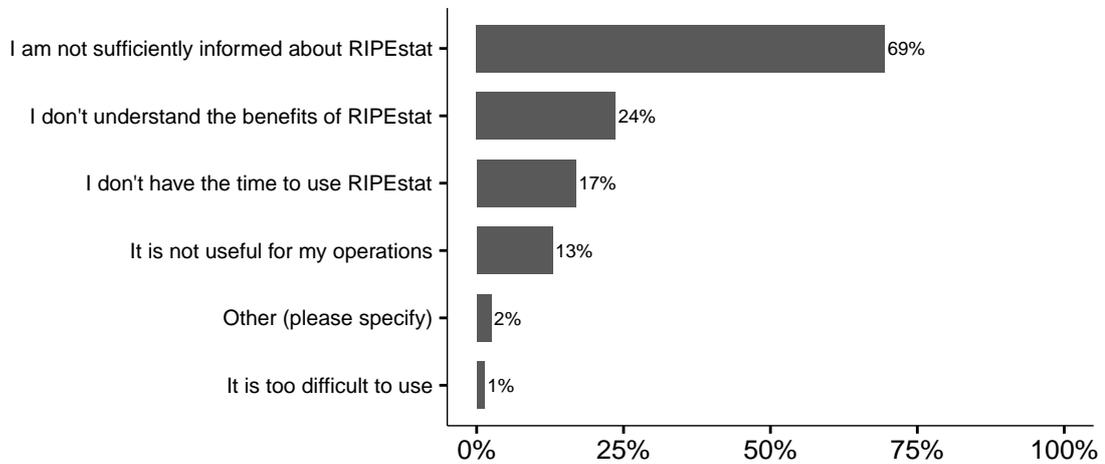
N=1815 (Members and other interested parties)

Figure 49: Do you use RIPEstat?



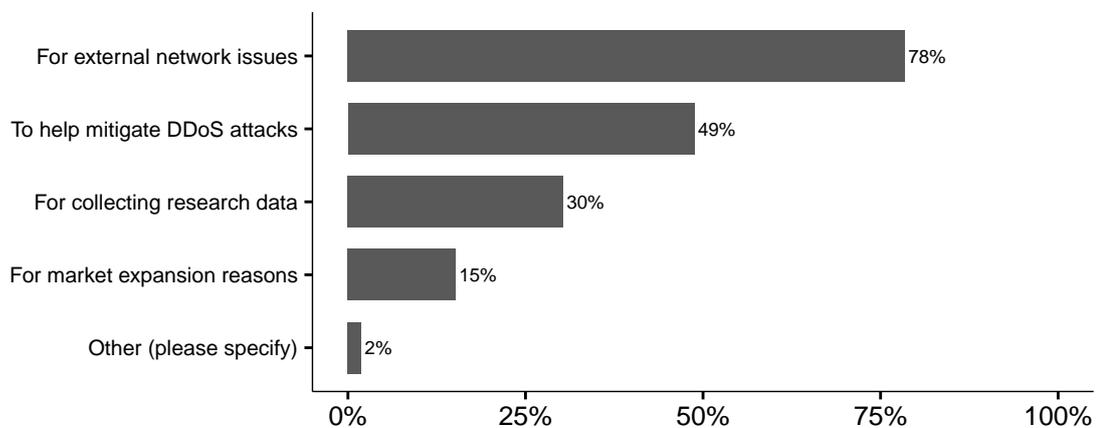
N=3080 (Members and other interested parties)

Figure 50: Why do you not use RIPEstat? (Choose multiple)



N=1689 (Members and other interested parties)

Figure 51: For what reasons do you rely on data in your daily work or operations? (Choose multiple)



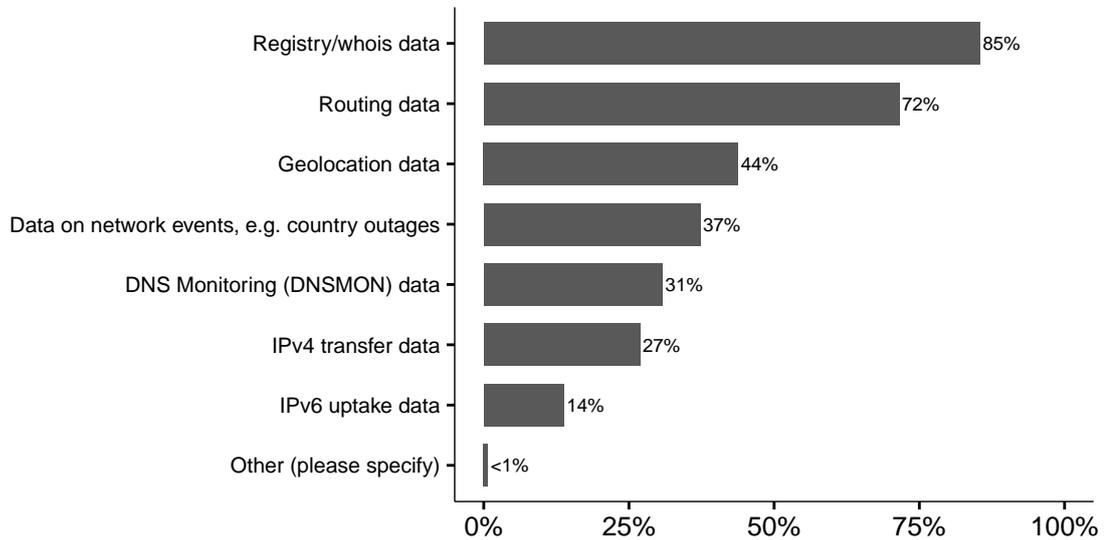
N=2803 (Members and other interested parties)

14 Data and Statistics

Finally, in the last section of the survey, participants were asked about their use of the data and statistics.

Respondents indicated that they relied on data most in their daily operations for external network issues (78%), and then to help mitigate DDoS attacks (49%) and for collecting research data (30%) (Figure 51). 15% said they relied on data for market expansion reasons. This didn't really change by industry, membership type or region.

Figure 52: What type of RIPE NCC data is useful for your work or operations?
(Choose multiple)

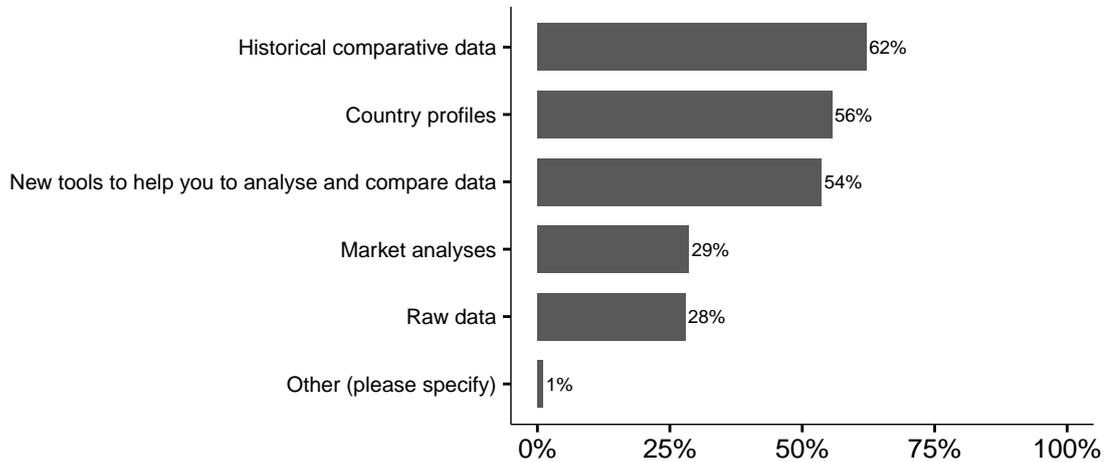


N=2901 (Members and other interested parties)

The most useful types of data provided by the RIPE NCC according to respondents were the registry/whois data (85%) and the routing data (72%) (Figure 52). Less than 50% thought that the geolocation data, the data on network events, and the DNS Monitoring (DNSMON), IPv4 transfer and IPv6 uptake data were useful to them. These trends were consistent through industry, membership type and regional breakdowns.

More than 50% of respondents found that historical comparative data, country profiles and new tools to help analyse and compare data would be useful (Figure 53). Just under 30% of respondents thought that market analyses and raw data could also be beneficial to their work or operations.

Figure 53: Which of the following would you find it useful for the RIPE NCC to provide? (Choose multiple)



N=2589 (Members and other interested parties)

15 Additional Comments

Respondents were allowed to add additional comments or feedback at the end of the survey. Roughly 3% of respondents (N=94) gave some feedback. A large amount were positive, while the rest generally gave more feedback on issues related to membership fees, fairer distribution and management of IPv4 and IPv6 addresses between small and large members/new and established members, as well as requests for more training and inclusion in different languages and regions. (For all comments see Q54 in Appendix 4).