

John Curran: Good morning, everyone.

Paul Andersen: Hi, good morning. I'm here to welcome everyone to the ARIN Members Meeting. We're here on our third day of ARIN 47. And just looking forward to taking you through before I get to a few housekeeping items.

We've reordered this Members Meeting in a virtual environment to try to be a little more focused on some of the presentations that we're giving. We hope you enjoy that. And we'd love to hear your feedback and see if the more streamlined process gives you the information you need. But first a few housekeeping items.

Next slide, please. So again, we have all of our board of trustees here. Catherine Middleton apologizes, she might be late because of a previous engagement, but we will have for the afternoon session all our Board. I, Paul Andersen, I'm the chair. And we also have our Advisory Council. They're all here, to my knowledge and are in the chat if you want to reach out and say hello.

Next. We also have our NRO Number Council, which consists of Kevin Blumberg, who is the chair of that committee, and Martin Hannigan and Louie Lee.

Next. Quick reminder for those who have not -- this is our third day, for many I'm sure it's probably not your first Zoom meeting -- but it's a slightly different platform. We'll have our discussions today and presentations.

If you do want to speak on anything we highly encourage it. We want to have a very collaborative approach. Either raise your hand, at which point we will put you and allow you to speak. You can also use the Q&A portion. Or there's also a chat which many of you are making use of now.

That's just to allow you guys to collaborate. But please note that the chat is not part of the official meeting. If you do want to be recognized or have something on our record, because this meeting is being transcribed, please make sure you use the raised-hand or the Q&A.

Next slide, please. Just a reminder. Especially in the chat, we need you to be professional. When speaking on a topic, please stay on topic and stay focused. We welcome all feedback, but to ensure that we keep on time, we need to keep on focus.

I do ask that all of you review, even if you're a long-term participant, to follow our ARIN

standards of behavior in any of your engagements with us. Next slide, please.

In regards to the rules, I will be chairing any discussion of any policies of which there are none today, but I will be helping moderate the afternoon session. Anytime you do speak, either in the Q&A, especially in the Q&A, please, because I know some of you forget, please make sure to state not just your full name but also your affiliation and please do so each time that you're recognized to speak.

Please, next slide. Just a reminder this meeting is being recorded. It is being transcribed. So, again, please speak clearly and slowly if possible. My apologies to those transcriptionists. I'm sometimes too quick. And we're also live streaming. The slides are available on our website and a transcript will be available shortly after the meeting. Next slide, please.

Once again, I would like to thank our Bronze Sponsor, I didn't think I'd trip over that, Team Cymru. Yes, I spent all night practicing that. Our thanks to them for again their support of this virtual meeting and the presentation that they gave earlier.

Next slide. So the format, again, is we're about the same time as yesterday. But the morning we'll

be hearing some specialized reports. We'll start with our Community Grant Program, some of the training and outreach initiatives we've started recently, an update on the ARIN Internet Number Resource transfers. And we have a panel, which is new, we look forward to your feedback, from some people who are involved in the marketplace for IPv4 giving their thoughts and views.

We'll go into the break which has the always popular stretching with Erin. As we get to the afternoon -- next slide, please -- we'll get into some of our more formal reports, we'll hear from staff on operational issues. We'll hear from our treasurer, Nancy Carter, on financial. And we'll end off with myself giving a report. And our final Open Microphone, which is your final opportunity in this ARIN 47 to give us feedback, comments or suggestions.

Next slide, please. With that we'll start with feedback from our Community Grant Program. I'll invite Jennifer Bly to come up. And take it away, Jennifer.

Jennifer Bly: Hello, thank you, Paul. I'm excited to chat with you today about the ARIN Community Grant Program. Get started with the slide.

The ARIN Community Grant Program is an initiative that was launched in 2019 designed to provide

operational and research grants in support of initiatives that improve the overall Internet industry and Internet user environment.

In short, it enables projects that benefit the Internet community in the ARIN region. And the good news is the application period is open right now.

Next slide. So what kind of projects does ARIN fund? There are several types of projects that we're looking for. To be eligible for a grant, projects must align with ARIN's mission and fit into one or more of the four following categories: Internet technical improvement that promote and facilitate the expansion, development and growth of the infrastructure of the Internet consistent with the public interest; registry processes and technology improvements that maintain a globally consistent and highly usable Internet numbers registry system; informational outreach that advances the Internet by covering topics such as IPv6 deployment and Internet governance; and research related to ARIN's mission and operations.

The projects must also broadly benefit the Internet community within the ARIN service region and be noncommercial in nature.

Next slide, please. Since the program launch, we have funded 12 projects over the course of

two years. In the first year of the program, we estimated that about 1,250 individuals were directly reached and that is based on the project reports submitted by the recipients.

All four projects from 2019 achieved their objectives. And the project reports are posted online for you to view since the last ARIN meeting.

If you dig into those reports you'll get a better sense of some of the results they were able to achieve. But, for example, some results included helping to fund open source tools that enable operators to better monitor their DNS infrastructure and to manage IP address utilization across their networks, educating senior enterprise technicians on IPv6, allowing RSA signing with open source signing and software, and providing a free event management log-in for (indiscernible) in the ARIN region and beyond, saving hundreds of organizers administrative headaches along the way.

If you want to read the project results you can click through those on the ARIN Community Grant webpage or visit the ARIN blog.

Next slide. So in 2020, we funded eight projects that are currently in progress. They include build out of Internet exchange points in the Caribbean

region, IPv6 security applications and training for enterprises, integrated IPv6 research, CRYPTTECH, bringing back voice peering, RPKI origin validation, visibility for Check My DNS, virtual school of Internet governance, and RRDP support for RPKI clients.

These projects are off to a great start according to the reports that were just completed end of last month. Their final reports are due at the end of September and we will invite the recipients to share the results with the community in a blog and at the next ARIN meeting in the fall.

Next slide. Now I want to explain a little bit about the program and how it has evolved since it first began three years ago.

Each year we collect a variety of feedback from a variety of sources and work to improve the program accordingly. Over the past three years we have clarified the eligibility guidelines and the selection criteria.

We've added research to the list of categories to make it clearer that these types of projects are not only eligible but encouraged.

We've emphasized the need for long-lasting and far-reaching results. We've provided more detailed guidance on completing the application, both on our

website and in the application form itself. We've refined the budget requirements. And we removed the option for partial funding this year. We've also implemented funding term limit to two successive years so more organizations have a chance to receive a grant.

We have one more slide here. With that said, if you know of a project that is noncommercial in nature and fits the other criteria that I went over earlier I'd like to invite you to apply for a 2021 ARIN Community Grant. Please let your friends and colleagues know. Let any organizations you know who are conducting a project or considering starting a project who may want to apply. You can send them to [ARIN.net/grants](https://arin.net/grants). The deadline for application is June 2nd. So start working on your applications now. Are there any questions?

Remote Host: If there are any questions for Jennifer, Miss Bly, we would love to hear from our attendees, please remember that if you are answering in the Q&A section that you also include your name, if it's not obvious in your log-in, as well as your affiliation. And we will look for those questions. Or you can raise your hands. We'll look for those questions now.

Ms. Bly, thank you so much, it doesn't appear we have any questions. I look forward to those new applicants coming soon.

Jennifer Bly: Me too.

Remote Host: All right.

Paul Andersen: Hollis Kara will be our next presenter, giving us an update on training and outreach. Hollis, take it away.

Hollis Kara: Thanks, Paul. Good morning, everybody. Good afternoon for those of you who are in a location where it's afternoon. I'll take a few minutes to talk about what's going on inside the training and outreach inside the communications department and for the community.

Next slide. First of all, I want to stop for a second and point out that we do in fact at ARIN have the best team working together to bring you the outreach and training content. I feel very fortunate to lead this group.

It occurred to me yesterday that up until lockdown we were kind of a Fred Astaire sort of operation. We made it look good. You could see us coming, it was great.

Since COVID, it's been all Ginger Rogers. We're dancing backwards and learning the choreography on the fly trying to keep up, so that you're still seeing the same kind of results. But, trust me, there's been a

lot of learning and a lot of growth and challenges that the team has overcome. And I'm super proud.

Let's move on to the next slide. I just want to reintroduce folks and introduce folks who haven't met them yet to this team. You haven't seen us all in person yet.

We're looking forward to get a chance to get back on the ground with you. This is how we look in our day to day, not always with filters but we were having a little bit of fun.

I want to point out a couple of differences and changes in the team since the start of the year -- or since last year. Jennifer Bly has accepted a promotion and she's become our External Relations Manager. I'm really proud of Jennifer and all her growth in tackling this new role. With this shift, it's allowed us to kind of refocus our efforts inside the group. And Jennifer's really tackling projects that are for folks outside of our immediate customer community.

There's a lot of crossover and blending in outreach and training. When I'm presenting this on behalf of the group, I'm really presenting it on behalf of Jennifer and I. I'll point out some things that she particularly spearheads. I'm really excited about all the work she's doing.

I also want to point out that Amanda Gauldin is our newest member of the team. She's running the community engagement. She's going to feature highly in this presentation. She wins the hit-the-ground-running award. There are a number of things that she's created and launched since she joined the team. She's amazing and we're really glad to have her on the team. But all these folks are simply fabulous and the best people in the world to work with wonderful to work with. I hope you all get to meet them in person soon.

Next slide. A quick recap of 2020. Keep moving.

We were able to get a lot done in 2020. We had to slow down and regroup and kind of refocus and figure out how we were going to take all these things that we had planned to do with you guys in person and make them all virtual.

So where we landed by the end of the year is that we were able to conduct nine live training sessions and then when we completed those sessions we also repackaged them for on demand use.

So by the end of the year we had about 700 viewers who were able to access and take advantage of our training programs. And those covered IPv6 address planning, leadership development and a first run of our

getting to know IRR online for our new IRR service. We conducted two virtual meetings by the end of the year.

And we were happy to see that across those meetings we had about 278 attendees. So we're actually hitting numbers like we would expect to see at in person meetings at these virtual events, which is a great outcome. We really weren't sure what kind of response we would get when we took ARIN meetings virtual.

But it doesn't have a big impact on participation in a negative way. We're excited about that. At the end of the year -- this is one of Amanda's projects that we'll talk about a little bit more as we go through what's coming and what's happening in 2021 -- we launched a new program that's strictly focused on new customers.

For a long time we've done our ARIN on the Road program, and we are looking forward to bringing that back. But the piece we were most worried about losing when everything went virtual was the ability to connect with our newest customers and help them understand the tools and services available to them here at ARIN.

Amanda spearheaded a group to put together that program. We launched it in December, ran three sessions back to back. We had over 65 participants

between those three sessions, which heading into the holidays was a great response. And we got more great feedback that has helped us with our planning for 2021.

Move to the next slide. I want to talk for a moment about 2021 strategy and focus. So we have kind of a code word now; it's "value." Everything is about value. What does that mean?

Basically it's all about building on the successes of the past and figuring out ways to iterate. We have had some tool changes and we're hoping that those will provide a better experience. Now, I'm going to be honest; I took a sneak peek at some of the survey results for the meeting so far this morning.

And it seems like we're having some growing pains with our new meeting platform tool. That's cool. Please, complete your surveys, tell us your challenges. We're really glad to hear about them and we're looking forward to iterating and making that work better for you in the future.

We're still learning and getting familiar with the platform ourselves. The more you can tell us about the features you want to see or that you're missing, the more we can do to make it work better in the future.

We're also using your feedback on all of our programs as we collect it. So it's really important, again, going back to surveys, for you to tell us what you think when we get to the end of something, because we use that to define our priorities so that we can strive to provide you with the best information that you need to be successful in your interactions with ARIN and in your professional life as it applies to what we can do for you.

Next slide. So lots of things on the horizon. If we can move on. ARIN Optimized. We talked about this briefly. It was launched at the end of last year.

It's a quarterly, by-invitation-only onboarding for new customers. We did our first for Q1 of 2021. It went great. I think we had 35 participants in that, which was a great turnout. We'll continue to do those across the year.

So as folks are getting resources or setting up their organizations, they're going to be getting an invitation in -- or a notice in that email that they will be receiving an invitation to participate in one of these events. And we hope they will take advantage because it's a lot of great information about how to

kind of make the most of your experience with ARIN.  
Hence the name Optimized.

Moving on. Strategic partnerships program.  
This is Jennifer's baby. She's done an amazing job with it. We launched this in 2020. This kind of came out of a need that filtered through from the office of the CCO, which we had all these relationships with industry communities, research and education institutions, all these folks that we used to present at their conferences or go to their expos and events.

And when everything kind of quieted down, how do we keep this going? So we've done some very targeted outreach with those groups to help identify opportunities for us to take content that typically we present through ARIN and take it directly to their communications or through to their venues and hosting it through their platforms for their customers.

So thus far we've had six informational webinars. We've had amazing turnout. We're trying to do about two a quarter, but it's been a great program so far.

Next slide. All right. Leadership development. This one's coming around again real soon. We'll be running the 2021 election session on the 20th

of May. Leslie Nobile will be leading this year again, I think.

And basically this one is focused on educating candidates about the roles and responsibility of the Board of Trustees -- for the Board of Trustees Advisory Council and the NRO Number Council. We also published this one that's available on demand for folks that maybe aren't ready to make that commitment decision, aren't sure they want to go down that road when we offer it live but maybe they want to come back, look at it.

So that will be recorded on May 20th. There will be a live session that day and we'll be making that available for folks who are considering candidacy this year.

Next slide. All right. Virtual Fellowship Program. Mad props to Amanda for pulling this together. Our Fellowship Program has been one of our premier programs over the last decade. And we really hated to let it set to the side last year while we were adapting to virtual meetings.

And so it was really important for us to figure out a way to bring this back as a virtual event while we were continuing to host meetings in this format. It's been a great way and continues to be a

great way to broaden inclusion, diversity and engagement and get new people on board and feeling comfortable and confident to participate at ARIN meetings.

For the virtual fellowship program we had mentors step forward from the Advisory Council to guide our eight fellows through the program, and we'll be opening up applications for the ARIN 48 series here very soon over the summer.

One thing I want to point out is some of the features that we've been able to do in this new format are so much better than what we were actually able to accomplish in person in the context of a meeting that we're probably going to keep them as part of the overall program once we're back to having in person meetings. So it's definitely been a way to grow and expand upon what we can offer to our fellows. And I'm really excited about it. The feedback has been amazing.

Next slide. ARIN training. We've got a number of training things that are coming up real soon. So keep an eye out. There will be announcements coming as registration opens. On the 13th of May we're planning to do another live run of our IPv6 address planning basics.

That was by far our most popular is training program to date. And that's going to be available again

live. And then we'll have that back as an on demand after that.

We ran one session of the IRR online training last year. We're going to be hosting a new one, a new live session, 27 May, and then again we'll be publishing that as on demand for folks who can't make that session. Be on the lookout for those.

Perhaps more importantly we've got a new training that's going to be coming very soon. We're hoping to open registration either here the end of this week, early next week. And this will be on using the RESTful API for IRR.

We had to obviously wait until it was all deployed. But it's coming up very soon and we're excited to get more information on that out there and help folks take advantage and start using that system.

Next slide. All right. As you can see, we may have had to slow down in 2020. We're picking up the pace. We've got a lot of things on our roadmap. And we're hoping to get most all of these done before the end of this year. Fingers crossed.

Perhaps most importantly we have an RPKI basics webinar that we're planning to do later this year. We wanted to let Brad Gorman get in and get his

feet wet and get a sense of what's happening before we started bugging him to put together a webinar.

We'll be working with him to get that out hopefully by the fall meeting. We are planning to take a lot of our content that is currently used in our newcomers presentation and that has been part of our ARIN on the Road, and some of it is in the ARIN optimized as well, and repackage that as an ARIN 101 video. So that will be available for folks who are just coming in and needing to learn about the organization, or for folks outside who have somebody that they need to get up to speed about ARIN.

It will be a quick resource to point them at. That will be a shorter video, which should be great.

Another video that we're looking to put together is one on using the RDAP search on the ARIN website. When we transitioned to the new website we shifted to using the RDAP service for the Whois search automagically through the website. And that's created some challenges for some users. The output is a little bit different. So we're putting together a video to help people use that better and help them understand where the differences are. And hopefully make that a more useful service for them.

The next in line, we've got the IRR basics, the online that we're running and then the API. We're going to do a 201 session. It will be a beyond-the-basics webinar, kind of next steps of digging a little deeper into using ARIN's IRR.

And then last, this one's been kind of out there as a goal for a while. With all the improvements to ARIN online over the last few years, the user interface. It's gotten much, much more friendly to use but there's a lot of information to digest.

What we're looking to do is to put together a short video that's kind of a dashboard tour of what everything else, what it does and where to find it. We're excited about that.

And we're in the very early stages of putting together, I'm going to tease this a little bit, a great program that we're launching -- hoping to launch in 2022. We're calling it the IPv6 Pro Series. Basically we've had a lot of requests for higher level IPv6 training that's kind of outside of ARIN's scope but things that people in our community are doing.

So we're looking to connect with people who are doing that work and bringing them to ARIN to present in a webinar format to provide some of that information to our community.

So, we're still baking that one but we're very excited about it. And I think it's going to be an exciting and useful program next year.

Next slide. So I covered a lot. There's a lot we've got going. But we're still interested in getting your ideas. If we can go to the next slide I want to walk you through the different ways you can let us know.

We have a number of emails that kind of filter down to different portions of the team for information. If you email us at [training@ARIN.net](mailto:training@ARIN.net), that kind of funnels towards the training side of the house. And if you've got an inquiry about any of our training or educational materials or an idea for an event or webinar, we want to hear from you. Send it to that email.

[Blog@ARIN.net](mailto:Blog@ARIN.net), we continue to have a thriving blog. It's grown from strength to strength. We're in the process of incorporating it into the ARIN.net site. We hope to have that work done inside this calendar year. But we're always looking for guest bloggers, folks that are interested in doing IPv6 case studies. So anything like that, send it to [blog@ARIN.net](mailto:blog@ARIN.net). We'll be thrilled to work with you.

And meetings@ARIN.net is the other email you can use. Sounds like it's very specific to meetings, which it is, but there are a couple other ways you can use that. If there's an industry group that you think we should be partnering with or a topic you think we should be covering somewhere, that's a good place to drop that message. Or if you need to request an ARIN speaker or would like to have a virtual help desk or a help desk at an event, you can also send those requests there.

Next slide, please. So that was me speed talking. I'm going to take a breath here and see if anybody has any questions.

Remote Host: Fantastic. And we'll remind everyone -- thanks, Ms. Kara -- we'll remind everyone that you need to include your name and affiliation when you are typing questions into the Q&A section. As we get ready to wrap up, you're welcome to add the word "queue" and let us know you're in the middle of typing. You're always welcome to raise your hand and speak yourself.

At this point I'll turn to our first question. This is from Gary Giesen, from CentriLogic and ARIN AC: Have you considered expanding your outreach efforts around the various councils, IPv6 and

ARIN itself to new forums, such as Tech Field Day, various technical podcasts to reach a new audience and engage a portion of the industry who you may otherwise have trouble reaching?

Hollis Kara: To be fair, Gary, I haven't thought about some of those things. That's why I like asking for ideas. We're often very busy and head down in other things that are already on our plate. But we'll make a note of that and look if there's ways we can connect with some of those folks. That's super useful information and I really appreciate the ideas.

Remote Host: We also have Alfredo Calderon from BSIG: How does IPv6 Pro compare to the sponsored -- compare with the sponsored by a generous grant from ISIF Asia?

Hollis Kara: That's a good question. I'm not sure I have the answer to. Like I said, we're early days with the IPv6 Pro concept we're putting together. I would need to take a look at what the ISIF Asia program is doing to see if there is a lot of similarity. But that's definitely something to explore.

As I said, if you guys have thoughts or ideas about what we might want to include or if you might like to be involved in that IPv6 pro series, we'd love to hear from you. So please let us know.

Remote Host: If there's any questions, get those in. Doesn't appear there's -- Mr. Andersen, do you have a question?

Paul Andersen: I have a comment, if there's no other comments. I just wanted, while we have Hollis up here, to thank her and her team, first, for all the accomplishments they've just put there. But ARIN policy meetings are at the heart of ARIN's mission and a year ago when we were faced with, like the rest of the world, a bit of a throw-up on how things to do, the idea of virtual PPCs was very foreign to many of us on the Board and I'm sure many of the staff.

When we held our first one a year ago, we were -- we had not high hopes. We understood it was being put together on short notice. We hoped a few people would show up.

But the team blew it out of the water. This is now our third PPC virtual. We'll have a fourth now obviously in October. As Hollis says, not a drop in attendance, engagement has never been higher and the policy process hasn't taken a beat. I want to thank, on behalf of the community, Hollis and your entire team. I know you put huge amounts of work in putting this. I know it sounds easy -- I'll just throw up a Zoom meeting -- but tireless rehearsals planning scenarios on

how we can make sure that the policy process was. I just want to thank you.

The only thing we haven't replicated. I'll put it on your to-do list is how we can replicate what we normally do, ask everyone to give a round of applause to Hollis and her team. We'll have to imagine hearing it. But John and I always like to.

I want to take a moment, Hollis, thank you and your team. It's outstanding what you've done with the virtual meetings, and that you gave the Board a position in October when we were not sure how to handle (indiscernible) things returning, but it was, do we go away from this virtual meeting very quickly when it's been so successful.

And, of course, we look forward to some of the stuff you're putting together as we return. So just want to take a moment and thank you for that and your team.

Hollis Kara: Thanks, Paul, appreciate it. It's been an adventure but we're happy to be on it with the community.

Paul Andersen: Thank you so much. Thank you for that. Without further ado, we'll go to Mr. John Sweeting, who is going to give us an update on the

Internet Number Resource Transfer Update. John, over to you.

John Sweeting: Okay. Hello, everyone. Before Paul went on with that great, all those great comments on Hollis and her team, I was planning to say the same thing. Coming up here, following her and Jennifer kind of leaves me a little short, maybe. They knocked the ball out of the park on their two presentations and they've been doing that daily this whole past year.

Okay. I'm going to give a quick update on resource transfer statistics. And that's going to lead perfectly into our panel of transfer facilitators that John Curran is going to host. So let's get on with that.

Next slide. I'm going to give overview of completed transfers, processing time, number of addresses transferred and size of specified transfer address blocks.

Next slide. All right. So here is the transfer volume that we have been completing through the years. The number of transactions, as you can see, they have grown continuously up until last year we had a little bit of a drop-off but not a whole lot.

And I'm not sure if that's saying we've reached a stable steady state or if it's the result of the pandemic and people not being able to travel to all the RIR meetings and conferences and talk to each other about, hey, I've got IPs I'd like to transfer and somebody else saying, yes, I've got (indiscernible) and all that.

I guess we'll have to wait and see. I kind of feel like we haven't reached a steady state, that the number transfers will continue to grow.

Next slide. As you can see, the processing time in days are pretty level. 2018, they did go down a little bit. They've gone back up recently, a lot of it due to the pandemic. Inter-RIR, we have a new RIR that's participating. And with that there's growing pains. And it actually affects all four of the RIRs that are actually doing inter-RIR transfers today.

It just makes it a little bit more difficult for the coordination and timing of these transactions. Next slide.

So number of addresses transferred. As you can see over a net five-year change, ARIN has lost, not lost but has transferred out 19 million IP addresses. Naturally -- this is just natural. The inter-RIR transfer, ARIN has the huge legacy pool which a lot of

the transfers are coming from. A lot of the class Bs. Even some Class As, /16s and /8s and portions of the /8s that have transferred inter-RIR. It just really makes sense that's the way it is.

It actually helps everyone, I believe, globally. ARIN, since most of those addresses were legacy addresses, it helps to clean those addresses up, get them updated. It moves them out of the books, out of the staleness of the old registration and puts them into new registries, new hands and they're all being put to good use now.

I just saw Louie's comment. That is true, Louie. That is true.

Next slide, please. Next slide. Am I frozen again. Thank you. In-region transfers. Number of IP addresses transferred, five-year total is 154 million IP addresses. As you can see, 2017, 2018 were peak years. There was a lot of big transactions, large transactions over those years.

The transactions have -- we still have a high number of transactions that -- it seems that the blocks that are actually being transferred are a bit smaller these days.

Next slide. M&A, merger and acquisition transfers, number of IP addresses transferred. As you

can see, about 73 percent of the approximately 488 million IP addresses transferred were due to merger and acquisitions, which there's a good end result. The blocks covered by IP address blocks in the region covered by an agreement increased from 54 percent to 63 percent over the past five years. So that's another very good outcome of the transfer market.

Next slide. So a lot of people think that if you're going to go into the transfer market you need to have a /16 or a larger block to get out there and participate in it, when in actuality most of the transfers are your smaller blocks, your /24s, 23s, 22s and so on. Those seem to be the sweet spots. Not a lot. I'll let you look at that for a minute. Okay. Next slide.

So in summary, the number of transfers are either -- seem to be either stabilizing or they were impacted by the pandemic. Transfer processing time is stabilizing. Hopefully, if we ever get through this pandemic, we can do some things to help with that processing time, bring it down again.

Transfer activity is increasing the number of IP addresses that we ended up with under agreement, which helps to clean up the database and the accuracy of

the database. And most specified-transfer blocks are smaller blocks.

Those are the conclusions we've come to on this and the summary of it. And with that, next slide. Should be a Q&A. Are there any questions?

Remote Host: Thanks, Mr. Sweeting. I'll remind everyone again if you're going into the Q&A please make sure to state your affiliation as well as your name if it's not already in there.

Please feel free to raise your hand as well. And we will start with a question from David Huberman from ICANN asking: Do the objectively long transfer processing times, especially for M&A, primarily reflect some of policy overhead, procedural overhead or responsiveness of parties? I'm asking primarily in the general case understanding that every ticket is its own adventure.

John Sweeting: Yes, David. It's a little bit of all of that. And it's trying to balance the policy with the procedures and having the parties involved in the transfer understand why we have to ask for the documentation that we ask for.

And then a lot of times some of the documentation we're asking for is 20 years old. And

they have trouble finding it sometimes. Takes them a while to do all that.

So it's really a lot of -- the fact that when they come in to do the merger -- most of the mergers and acquisition transfers that take a long time are several years old. They happened many years ago and people just did not take the time to update their records at that time.

They're not all legacy that take a long time. Sometimes it's an acquisition that happened back in the early 2000s and they've been acquired, maybe the same company has been acquired four or five times and never updated their ARIN record. It's a little bit of all of that.

Remote Host: Thank you. I have a hand raised from Donnie Lewis. I'm going to go ahead and make it so that you can unmute yourself. Please state your name and affiliation.

Donnie Lewis: Hello, Donnie Lewis from The Obsidian Group. The question I want to ask is you mentioned that there were a lot of addresses transferred out of ARIN and it was indicated that most of these addresses are legacy addresses going to other ICs or what have you.

Is this a function of companies being relocated in other regions and transferring to the appropriate authority in those regions, or primarily the address being, I guess, sold on the open market? And isn't there concern about, from an ARIN point of view, of all these addresses leaving and going elsewhere?

John Sweeting: Hi, Donnie. Great question. They are definitely addresses that are being sold on the transfer, in the transfer market.

People that have had this space for quite a long time and have been holding on to it have found that it makes sense now that they monetize it. And with all the facilitators available out there around the globe, they help to make that happen.

Is it a concern? It's not really a concern. But because these addresses were mostly sitting fallow and not being used. So the fact that they're actually being put back into use and being used, being used for what they were designed for, there is some concerns, of course, from the IPv6 side of it that the more that people find IPv4 addresses and start putting them to use, the slower the adaption of IPv6. I won't go into all of that.

I think anytime you can match somebody that needs something up with somebody that has an excess of

it and they can come to some kind of an agreement on how to change hands on that and put it back to use, I think it's a good thing for the entire global community.

Remote Host: Thank you. Question from Lee Howard at IPv4.Global by Hilco Streambank: Regarding the inter-RIR transfer time slide, do those times include both RIRs or do they include both inbound and outbound from ARIN?

John Sweeting: Yes, they include everything. It's very difficult to separate out the processing times and put them into buckets.

We're attempting to do that because you need to do that in order to find where you can improve on that, on those times. But that's, what I showed there, did include both incoming, outgoing and includes the entire range of time.

Remote Host: Thank you. We have a hand up from Kevin Blumberg. You should be able to unmute yourself now. Please state your name and affiliation.

Kevin Blumberg: Kevin Blumberg, The Wire. Good afternoon. John, in one of your slides you mentioned around 74 percent, give or take, of transactions were done under M&A. And one of the requirements to be able to do a specified transfer is that the space is under LRSA or RSA.

And I'm just curious if you've seen where people are cleaning up their M&A, the purchases from 10 or 20 years ago, for the purposes of getting it out to market, rather than just cleaning up their resources for themselves and utilizing. Is that the predominant reason you're seeing so many M&As is just internal cleanup for the purposes of sale?

John Sweeting: Hi, Kevin. Yeah, that's predominantly. There's also the RPKI factor and the new IRR factor that makes it very enticing for people to clean up their address space and to get them under the right organizations and the right Org IDs and the right agreement.

But, for the most part a lot of the M&A is done -- I want to correct one thing. You said something about they have to be under an LRSA or RSA to be transferred. And that's not entirely true. If the legacy holder is the same legacy holder and the organization is the same and they are still operating under the same name that they were when they got it and everything, they can actually transfer space without coming under an agreement.

However, those are far and few between. So, yes, so most of it is the fact that they're cleaning up, getting it under the -- the main requirement is that the

organization, best, is still operating and that's the organization that actually receives the space from ARIN. Those are the requirements.

Of course, if they've been acquired and they haven't done the merger-and-acquisition transfers, then they have to do that before they can do a market transfer.

Kevin Blumberg: Thank you. Appreciate the clarification on the RSA, LRSA.

John Sweeting: You're welcome.

Remote Host: At this time it looks like our queues are clear.

John Sweeting: This is going to hand off now over to the transfer panel that Mr. Curran is going to be hosting. I'm excited about this. I am hoping that the community can get some really good information from these guys. Thanks.

John Curran: Thank you, John. So, we have an exciting topic here. We're going to do an IPv4 transfer market trends panel. I have four folks who are fairly well known to this community: William Sylvester of Addrax; Marc Lindsey of Avenue4; Jack Hazan of Hilco Streambank; and Mike Burns from IPTrading. Gentlemen, turn on your videos. I want to see all of your smiling faces.

Very good. I'm looking for one more. Here we go. I've got three videos. Who am I missing? Mike?

Jack Hazan: You're missing Jack, but it says the host has blocked me.

John Curran: There you go, Jack. We have you. Lovely.

I have these esteemed gentlemen before me. I have a number of questions. And I'm going to clarify with each of them.

And then what we're going to do is if we get to the end and we still have time, I will take a few in the Q&A panel. But I'm not sure, given how many questions I have for these folks.

First, would each of you, in turn, just two minutes, introduce yourself, your organization, sort of what you are and what you do. We'll start off with Marc. Go ahead.

Marc Lindsey: I'm Marc Lindsey, Avenue4. I've been in the ARIN community working either as a lawyer or as a broker in this space since 2012-ish.

Avenue4 was born in 2014, and Avenue4 is dedicated to advising participants in predominantly the ARIN region. We predominantly represent the sales side of the brokers's transaction. And we make sure that's typically our approach to advising all of our clients.

John Curran: Very good. I'll have William Sylvester.

William Sylvester: William Sylvester from Addrax. We started pioneering market transfers in the fall of 2009. Have been very involving in the communities of working to open things up. Thank you so much for putting this on, John, and really appreciate you for putting this together.

John Curran: Excellent. Mike Burns, tell me a little bit about yourself and your business.

Mike Burns: I'm Mike Burns of IPTrading. My business was founded in 1986. So we're about 35 years old. We are a network operator who transitioned to become a broker. We began buying and selling blocks in the early 2000s. And we are a registered broker at all the trading registries.

We represent buyers and sellers. And I think we'll talk more about this. As trends go, we are finding buyers are in need of more representation than sellers these days.

But we've been active in the market and in policy development in ARIN and in other communities. And we do a lot of inter-regional transfers.

John Curran: Excellent. And Jack Hazan, a little bit about yourself and your organization.

Jack Hazan: Jack Hazan, from IPv4.Global, a division of Hilco Streambank. I'm an executive vice president and principal of Hilco Streambank. Our IPv4.Global started also around 2012, started doing private transactions and since then also launched an online platform.

So we have multifaceted platform that both does online trades and as well as a private brokerage. We represent also buyers and sellers from time to time.

I would say most of our representations are of sellers. But we do have various buyer representations as well. When it comes to online transfers, everyone is sort of on their own, although our listings come from our sellers as well.

John Curran: Excellent intro.

Gentlemen, you've all been in this industry sort of since it's been an industry. So who wants to address, how has the transfer market changed in the last five years? The last five years, what have you seen in the last five years?

Marc Lindsey: I can take a stab on that. I'd say 2015-2016, it was predominantly a buyer's market. There was a lot of supply. Buyers were moving into the space clearly with more supply than there was demand. And found a lot of the leverage from both

pricing, in terms of addition perspective, landed on buyers.

Around the 2015-2016 period that's when prices were absolutely the lowest in the market space. So prices dipped as low as five, \$6 per number around that time period.

And since then, as address space has become less available, we saw some dips periodically, particularly in 2000 we saw a steady decline in transactions until we got to around 2016. Prices were relatively low up until that point in time.

We saw a big dip in address space in 2016. And that goes into the psychology of buyers and sellers, but there was a pivot at that time to say, this really is a scarce resource and there was a more balancing out of demand and supply.

Prices spiked. Sellers had a bit more say in pricing and negotiating transactional space. Since 2016, the leverage increasingly shifting a bit more to a balanced buyer/seller. Now we're sort of seeing a bit more sell-side leverage on the transaction space.

I would also say that there's probably, originally there was just kind of one market. It was periodic 16s up to 10s that would come into the market periodically. Now we're kind of divided up into, I

would say, three market segments, like the 19s and below, the 16s and collections of 16s, larger address space, so/10s and larger. There's fuzziness around the boundary points.

But in the mid points of 16s and larger, leverage is clearly shifting a bit more towards the sell side in terms of both setting price and a bit more balanced in negotiation. But there's been a lot of consolidation amongst the buyers in that space.

So there's a consolidation. A lot of deep experience on the buy side, with sellers having more leverage but less experience on a per-seller perspective.

John Curran: Excellent summary. Others, what are you seeing, Jack?

Jack Hazan: I'd say one of the biggest changes in the market since I started is because of the growth of the market, the transparency and standardization of the process of getting trades done has increased dramatically.

And so I think parties have much more comfort in the process, which I think is a result of a bunch of things. I think back in 2012, the only way you would know how much an IP address is worth is you Google

it and you look up and all you knew was the Microsoft Nortel transaction.

Now, there's a lot of pricing data out there. All of my counterparts over here all put out reports on pricing. I think people out there just have more information, know more, and there's more comfort in doing a transaction.

I think the RIRs have stepped up and developed policy and procedures that help support the transfer market, which gives people comfort and they're actually able to redo transactions with almost no paper.

The only paper that sometimes has to get done for a transfer for us is the Officer Attestation Form, the acknowledgment form. Other than that, everything is done through our platform back and forth.

So I think that's come a long way and enables all of us to be able to do business a lot more efficiently and do more.

John Curran: Mike, what are you seeing?

Mike Burns: I'm definitely in concurrence with those opinions. The knowledge levels among participants, both buyers and sellers, are much higher now than they were five years ago. And we had to spend a lot of time educating participants who were often quite afraid of the market, considered it to be more of

a black market than a white market. And they were very nervous about interactions with the registries and with escrow agents.

And in the last five years, as Jack has said, there has been a standardization of escrow agents in the industry, with escrow.com really getting quite a lot of business. And many brokers -- also the number of brokers has proliferated in the last five years. There are many more of them.

And they've all become familiar with escrow.com, the way it works. And that has tended towards less paperwork involved in transfers, as Jack alluded to. When an online escrow agent is used both the buyer and the seller engage in an agreement with that provider. And so the underlying agreement directly between the buyer and the seller is no longer really necessary.

So we're finding that escrow agents have facilitated the market, have helped mature it and have also assisted in multibroker deals, which are also growing in popularity over the last five years.

Of course, prices have gone up. Wait times to sell have gone down. Inventory has gone down. And actually we see commission rates have gone down as well.

John Curran: Billy, you've been in this market a while. What have you seen change?

William Sylvester: When we started in 2009, we found that roughly half of the Internet was unannounced. This was primarily legacy space. And that legacy space was either companies that didn't have a business ISP when they first got on the Internet in the early to mid-90s.

Since then, with the Nortel deal that we did in 2011, some of the other key landmark transactions in 2012, it really started to raise awareness.

And through the transfer markets over, not just the last five years but the last decade, we've actually seen these numbers go from about 50 percent of the Internet space being utilized to actually about 80 percent.

And a lot of this is true: Companies are better managing, recycling, more efficiently using their IP space. But they're also planning for the future. They're budgeting.

Five years ago companies didn't have budgets for buying IPv4. Today, companies are looking at what's my one-year plan, what's my three-year plan. And that's really changed the dynamic.

And a long time ago there were concerns that this was was illegitimate, it was in certain cases I can remember early calls were -- it was illegal. It's illegal; you're going to jail for selling IP addresses.

Fortunately, today everything is above board. The gray markets are above board. Policy has followed suit to mirror what's going on in the marketplace. And we're really able to keep the registries accurate. We're able to do efficient transfers, as everyone else on the panel has mentioned.

ARIN has been great to work with just in that relationship between buyers and sellers and really verifying that companies who are selling and transferring are the legitimate companies and really working on that fraud issue because there's a lot of concern about making sure that we sell and do legitimate transfers.

Longer gone the days where the tech contact had full control over the block. Now we're actually getting executives and lawyers and others involved. So it's been a very exciting time.

John Curran: Excellent. Interesting point you raised. Sort of the impressions of those you talk to. Each of you are on the phone talking to potential customers every day.

What's the most common misconceptions today about the transfer market? Do you still have someone who says, you're all going to jail? What's out there that people -- what misunderstandings do you most frequently encounter? Who wants to go first?

Mike Burns: I'll mention the one that we see, a real misunderstanding. Which is that the broker is the buyer. And many times sellers or potential sellers will come to us and ask us, how much are we going to pay? How much are we going to get? And really what we've got to tell them is, look, we can't buy these addresses and resell them.

We have to find you a buyer and that's something normally that happens in the future. That's one misconception.

Others are that it's still a black market, that addresses can be revoked if they're not being used.

And there's a lessening fear of interacting with RIRs. I think that's fading away in most registries.

John Curran: Excellent. Thank you. Jack?

Jack Hazan: Couple of misconceptions. First, I think a lot of the sellers out there have a misconception that they're going to do better dealing directly with a buyer rather than going through a

broker. I think what we've seen in our experience is that when they do that, they end up netting less.

I think the sellers out there should not be looking so much at what they're going to pay a broker to go out and find them buyers, but look at what you're going to net and look at the expertise and experiences you're going to get from a capable broker in helping you close a transaction, give you certainty of closing help you with the process and the knowledge and the paperwork.

That's one misconception that I think that's out there. A lot of times they're afraid to deal with the broker. You should look at your bottom line.

And the second misconception that I'm seeing out there is a lot of sellers think -- I think, John, you may have alluded to that -- a lot of sellers think they can only sell a class B/16 block if it's fully cleared off. And they don't realize.

And it's eye opening to them when we tell them, no, you can sell subnets. You can sell a /24 and a /18. And in today's market a /18 will get you a few -- actually several hundred thousand dollars these days. So you don't have to clear off the whole block to go into the market.

John Curran: Excellent. Anyone else like to talk about the market. William. Go ahead.

William Sylvester: I was just going to say the two main things that we see are, first, when we call companies, most of the time these companies aren't aware that they have space at all.

And they say this sounds too good to be true. This is a scam. It's not legitimate. It's not worth losing my job over.

There's always that learning curve of saying, no, your company acquired these things back in the early, mid, late 90s. They're worth something. We really want to put them back into circulation. It's going to help the Internet. And we can motivate you with monetizing this to make it more worth your while.

In certain cases, despite not having used these things for 10, 15, 20 or more years, you get departments, IT departments that raise their hand and say, hi, I haven't been using this for 20 years, but we need it. We really, really need it.

And so there's a lot of those types of challenges that we see with regards to freeing up some of this space to transfer.

John Curran: Excellent. Mark, you wanted to talk about challenges?

Marc Lindsey: Two quick ones. I wanted to echo the point that (indiscernible) made, that there's more information about pricing, but sellers don't have the same inside information as do some of the repeat.

The other point I would make is that there seems to be, with more information available, historically you've seen higher unit pricing for the smaller blocks. So a lot of 16-ish holders come and say, I can make total returns by breaking this up into 24s and selling those all at once and have a higher set of returns.

Our transactional costs associated with doing that and as a general proposition monetizing that many 24s, breaking up a 16 isn't a slam dunk in terms of realizing a higher unit value than doing a 16, one and done.

The last one I'll make is as part of the broker community. I think ARIN has done a decent job of making clear that the facilitator list is a list. It's not an indication of quality or experience. But I think I consistently get potential clients who view those on that list, the brokers on that list having been qualified, vetted and deep niche of experience and are only there if they've got some sort of high-level qualification.

And I don't know what to do about that, but they do still seem to think that that's some indication of quality and experience when reality that's not what it's for.

John Curran: Excellent. Good to hear.

So let me say, you guys have some deep experience, which those answers talk about. What sort of -- when you're talking to people about these transactions and they come to you with their own strange ideas, one of the things that you've got to do is talk to them about what's important in a transaction.

In particular you're doing agreements to buy and sell rights. What's important terms to have in those agreements? They don't know. You must know. Who wants to talk to that?

Marc Lindsey: I can jump in on that. My sort of text of this space began as a lawyer advising people around their rights in engaging with ARIN and their transactional documents.

We still think escrow.com plays a role. But we think for mid-size to larger transactions there's no substitute for actually having parties negotiate appropriate terms and conditions (indiscernible) the risks and probabilities.

The nature of what you're buying and selling has always been a delicate issue in this space. The reps and warranties oftentimes that sellers are asked to give buyers can go well beyond the recognized rights and responsibilities that they might otherwise have.

So we have a certain position as to whether IP addresses are property and have title. But oftentimes you'll see reps and warranties that say, this seller is conveying title.

You don't want to have your contract be conditional on making reps and warranties that go further than you can actually demonstrate to be true.

So we think now retailing those reps and warranties to convey what you can rightfully convey through a buyer and that the buyer can rightfully claim I'm getting something of value, so getting those rights -- the reps and warranties are oftentimes coupled with an indemnification if there's a breach of that warranty. What liability does the seller then have? So making sure those indemnifications and reps and warranties are time bound that you don't have an evergreen set of obligations as a seller.

And as a buyer, also making sure that those reps and warranties are what are appropriate for this

space. And not have a contingent liability for sellers to go well beyond closing of the transaction.

And then there's always some discussion about limitations of liability, what is the maximum exposure you have, if anything goes wrong.

We've not had any of our transactions go wrong, but as lawyers on either side, there's always some maximum ex-exposure point. Look at what the maximum exposure point is. And buyers want uncapped liability for the sellers and sellers want no more liability than the dollars they're getting in the transaction. So figuring out what that balance is is effective.

And that's sort of your commoditized transactions. Bigger transactions have more complexity in terms of phased leases and how you put time boundaries around those, how you insulate liabilities around each individual phase, if there's any SLAs on the sellers in terms of when they deliver address space. Those become more commercial items.

The rest of the asset purchase agreement for buyers and sellers who go through an intermediary or (indiscernible) fee buyers, we kind of have a known set of boundary conditions and there's always fights around

certain issues. But those are the ones we typically have to navigate.

John Curran: Excellent. Someone else want to talk about things you worry about in terms and conditions?

Mike Burns: I'll jump in.

John Curran: Go ahead, Mike.

Mike Burns: We've found that the normal items for discussion in contracts are related to the venue for dispute resolution, which we've never had any dispute that needed any resolution.

But we've also found that certain governments, when they engage as buyers and sellers, require indemnification language that sometimes is a little bit aggressive. So we have to be careful when dealing with those.

But I would like to put brackets around this discussion by saying that -- repeating that we've never had a dispute. I'm never even aware of a dispute. The structure of these transactions involves a third-party escrow agent whom both the buyer and seller have placed their trust in.

And both the buyer and the seller are also just paying for an authoritative decision of the

registries. So if the registry makes the decision, there's really very little that can be disputed.

If the registry doesn't make the decision, well, the money is returned. The presence of the escrow agent obviates many of the payment reasons for sources of dispute. And the presence of the authoritative decision-maker and the registries removes many of the other dispute causes. So we found that our contracts are getting slimmer over time.

John Curran: Got it. Jack, did you want to say something? I don't know if I got Mike by accident. Were you in queue?

Jack Hazan: To further what Mike is saying, because the registries -- and ARIN does a very, very thorough vetting of these transfers before they go through -- and just based on fact that I've never seen disputes post-closing either, people have gotten more and more comfortable doing these transactions without paper based on the terms and conditions on our site.

And I think that happens because of the comfort level in what happens in the transfer process. And it involves escrow. Yes, there's a third-party escrow agent.

So the funds are held. And once the transfer is done, you have the addresses registered in

your name. And people are doing /16s on our site now. So we started it with really small transactions, but people are getting comfortable.

Having said that, the much larger transactions with some of the larger players still need to be papered and so on. We have the same terms and negotiations that get negotiated that Marc and Mike have mentioned.

John Curran: Billy, did you want to speak to this at all?

William Sylvester: I did. The number one thing is verify holdership. We spoke about it, but especially for uncontracted blocks that aren't under RSA, you need to do your research to make sure that the parties that you're contracting with, the contracts aren't worth anything if they're not the actual legitimate holder. And so you need to verify who they are.

We've talked about escrow. Escrow is incredibly important. The biggest thing is making sure you either, as a seller, have your block or you're getting paid or, as a buyer, you have either your money or you get the block.

And within that you need to make sure that the registry is updated accurately. You need to make

sure that Whois reflects that you're the holder. Many years ago, there were some parties -- we never participated in this -- that were doing contracts outside of the registry. And those have created major headaches in all the RIRs for trying to clean some of that up and reflect accurate registries and accurate databases.

But if you find yourself in a situation not using escrow, you're sitting around waiting to see if you're going to get paid. And I've talked to a number of companies who have conducted transactions with third parties where they were holding their breath to see if they were getting paid. In some cases they ran into problems. Or the deal or the transaction fell apart after six or nine or 12 months.

As an organization, either buyer or seller, making sure that the blocks are ready to sell, are clear, they're free of spam and that you verified that holdership and leveraging escrow to protect you. And those are the things that are most important.

John Curran: Let me come back. You were talking about waiting for something to happen. I imagine that's a situation that you face with customers that all of you faced with customers on both ends.

What would you say, Billy, is your average wait time? I'm going to ask it from two points of view.

William Sylvester: Sure.

John Curran: Someone out there needs addresses for their network. They come to you and they say, I need addresses. Mr. Sylvester, can you get me some? From when he contracts with you to when he sees them, how long is he waiting, on average?

William Sylvester: So, the actual time deals in contracts, deals in escrow, deals in funding. There's a lot of things that go into this.

Then once you get through those different pieces, now you also have to include the registry. And just, I'm going to make a statement, ARIN and the registration desk have always been phenomenal, especially with the many challenges provided by COVID, at being responsive and working with us and even requiring documentation that perhaps was missed or a signature was missed somewhere, those types of things.

So these timelines are not dependent on the registry. For us, pre-COVID we were seeing two to three business weeks from the time someone would come in, contract -- this requires you have a motivated buyer and seller. It requires money gets released quickly. There

are many challenges with regards to wire transfers, especially internationally.

Funding transactions quickly. Getting ARIN fees paid quickly. That's actually a huge problem for a lot of organizations. And ARIN recently has done several things to make that easier, which has been greatly appreciated.

But getting the proper signed documentation in. And then, of course, getting that through post-COVID that's been a little bit longer.

And this has really been the result of buyers and sellers, everybody's working remote participant. Getting contracts reviewed seemed to take longer.

So recently it's more in the four-to-eight-business-week sort of timeline. But assuming there's space available, it's been prepared, it's clean, there's no spam, it's ready to go, they have -- they've either done their 8.2 to make sure that it's in their name, assuming you have that ready to go, a buyer can come in and within a few weeks have their space if not quicker.

John Curran: Got it. Would anyone else like to talk about turnaround times on average?

Marc Lindsey: It's about the same.

John Curran: Marc, speak to your speaker because you're breaking up.

Marc Lindsey: Now, better? Yes, so I'd say that the only thing I would add is that our turnaround times are about the same, a month and a half to two months at most in the current situation. Doing about a week of due diligence, assuming everyone is doing the right thing, moving quickly, and about a week to two for contract negotiations.

For the larger transaction, it's still part of contract review and sign-off, still has to happen. That's about a week to two depending on how buyers and sellers are situated. But we come out about a month and a half to two months from the time that someone signs up with us to the time the deal is closed.

John Curran: Mike or Jack, would you like to comment on turnaround times?

Mike Burns: I think our times are roughly the same. I would like to mention that not every registry has the same speed of processing.

And I don't put ARIN as number one in speed of processing. But I will just talk about when transfer durations stretch out, all kinds of problems get introduced, especially in a time when prices are changing quickly.

So we always try to get the transfer times down to reduce those kind of problems, because we see buyers and sellers see other prices. They want to back out. Somebody's moving a little slowly.

And so it's to everybody's benefit to get this whole thing done efficiently and speedily. But our times are just the same as have been described.

John Curran: Jack?

Jack Hazan: Sure. We see similar times, although if someone buys on our site we literally have sometimes deals close in matter of days if everyone has their ducks in a row. When I say ducks in a row, I'm talking about buyers and sellers. A buyer gets preapproval at ARIN for what you're buying.

One of the things that we see, if you need to get internal vendors set up to be able to pay the purchase price, get that in advance, get yourself set up -- get us or whoever your escrow agent is, set up in your system in order to be able to pay them in a timely manner.

And if you're a new ARIN member, make sure you get yourself set up with getting an RSA signed. Those are some of the things that we see delay on the buyer's side.

On the seller's side, obviously make sure you have clear title and that's cleaned up. And we work with -- we work with a seller to do that in advance of listing.

Clean up blacklisting, routing, route objects. And also have a corporate officer ready and able to sign the attestation form.

A lot of times that form, everything is done and then, oh, we can't find the right officer to sign it. So those are some things that if you prepare in advance these could move a lot faster.

John Curran: Good to know. I'm going to actually turn this a little inside for a moment. Warning, John Sweeting and Richard Jimmerson, get out your pads of paper and pencils; get ready, the writing is about to begin.

Gentlemen, you talked about the delays in the paperwork and issues. What can ARIN do, internally, as an organization, what can we do to do a better job with transfer processing, who wants to go first?

Mike Burns: I'll go.

John Curran: Go Mike, go.

Mike Burns: One of the things we think could be made easier is seller preapprovals. Many sellers are unaware they can do this. And with the STLS

defunct it's kind of been a red-headed stepkid. So I think that ARIN should play up the fact that sellers can get preapproved.

Also, I think that we should be allowed to submit the officer/seller attestation with the ticket submission because it's pointless to wait two days for ARIN to come back. You know it's going to have to come at a certain point. And if it's never needed then tear it up, throw it out, delete it.

I would say that also we're finding there's a two-day turnaround for each ARIN communication, which comports with the ARIN standards, but it's still too long. We think it should be shorter.

We think maybe some of the new money from the potential fee changes should go to transfer staff to help to speed that up.

And of course working remotely is going to slow it down, we understand that. But our experience with other registries has been more efficient.

John Curran: Okay. Good to know. Others?

Marc Lindsey: Let me piggyback on that. I would say if you could parallel stream a couple things. One is the acknowledgment of the attestation, the billing. If that could all be done like initial

submission, you can cut out roughly four days, sometimes four business days from the process.

We oftentimes get our sellers queued up to have that all ready to go, but each step happens in serial. If that could happen in parallel that could dramatically cut down some of the times.

But I also say I know it's a bigger ask, but for a lot of sellers and buyers who might be new to this process, having the ability of their designated representative, whether it's the broker, their lawyer, to engage with ARIN on their behalf, would be helpful.

Like right now you actually have to have the individual who is a POC engaging with ARIN online. If there's a mechanism to allow for agency, that would be very helpful.

John Curran: Okay. Others? Jack?

William?

William Sylvester: I'll jump in. I think some of the things that have been pointed out, there are definitely some efficiencies. The notarizations requirements, especially for parties that do mobile transactions with ARIN, there's some areas of efficiency that could be found. And in notarizing something once and not having to notarize something every single time,

especially when it's sort of a known party. Is the notarization even necessary?

There's certain contract terms that exist within, for example, the officer attestation that for large organizations it's very difficult to get signatures. And as you line up the signatures as others have sort of designated, things tend to get signed all at once. When you have something that says, hi, I'm agreeing to this ticket, but the ticket didn't exist when I signed this, it creates a conflict.

So our ability to have a contract that more accurately reflects the situation that says, hi, we've made this request as an organization; we're authorizing this request to take place.

I've got my designated, my affiliate, my otherwise party of someone in my organization or my legal representative that's able to conduct business on behalf of me. Those are important areas we can fix this.

Obviously payment, being able to pay in line, up front, being able to pay on account, enabling third parties to pay more easily without the handshake of getting the email, getting the invoice 24 hours later.

I know that many of these things have been addressed or are being addressed and we really appreciate the focus that's been placed on that, because those things alone create huge delays in the process.

The other thing for inter-RIR transfers, it's a very manual process today. And that's a huge pain point. And within that pain point, being able to better automate or otherwise programmatically update things as there are certain APIs that exist for dealing with a single register.

But having an API based on SMTP or email for folks is a very asynchronous way to conduct a transfer that had the RIR system been built a year later and had ARIN not been divested from Network Solutions in 1997 but instead of 1998, we would have had a protocol called RRP. And that protocol -- which has IETF support for IP addresses, ASNs and other network-related objects -- we would have had that API built back in the late 1990s. But because ARIN split from Network Solutions they didn't get the benefit of the register-register split that happened in '98 when ICAAN was created.

Those are things that would be helpful in the future.

John Curran: Okay, good to hear. Jack?

Jack Hazan: I second a lot of these suggestions, although for a lot of them we've found through ARIN workarounds to more or less get to some of the points that everyone was raising. But one thing that I thought would be interesting, I know it was discussed earlier in the conference that there's a new premium service model being offered to some of the larger holders.

And it would be great if you could do something similar for some of the intermediaries that are working a lot of transactions and giving us some type of capability to have a consistent conversation or consistent person at ARIN that deals with a lot of our transfers. And I think it would help make the communication on transfers that intermediaries are involved in a lot smoother.

John Curran: Okay. Good to know. That's good feedback. Mike, you have one more.

Mike Burns: I have one that Sweeting should put in his notes. You should not hold up a transfer waiting for the buyer's initial fee.

John Curran: Not hold up a transfer waiting for the buyer's initial fee.

Mike Burns: To be paid. Put it on account. Let them pay it whenever they want to pay it. But don't

hold the transfer up for that. Just the time it takes (indiscernible) getting a payment is sometimes too long for these companies.

John Curran: Acknowledged. Okay. We'll take all those. We'll see what we can do.

Now let me ask one that's outside of my control. This one's more for the members of the ARIN AC and the community to think about.

Folks, what can be done from a policy perspective to make transfers easier? We've had a number of policy changes over the years. Is everything all set now? Everything's great? Who wants to go first?

William Sylvester: John, I'll take this one.

John Curran: Go right ahead.

William Sylvester: We see challenges in making sure that we have an accurate and updated registry. We need policies that help support updating of this data but then also speaking to the fitness of the data.

So, for example, ARIN is the steward of a lot of legacy data. And within that stewardship, that data in many cases hasn't been touched. But there's nothing that identifies that data as not having been

touched, except for that one day in 2011 when all of the records were touched as a systemwide update. It becomes very, very confusing.

There are certain designations that are unofficial to determine whether you signed an LRSA, but there are no designations to show that you signed an RSA. There's also no understanding of which contract or contract versions were signed or even making those contracts available to make that more clear, open, transparent, within the community to provide that,

Equally, there are realities that are going on in the marketplace where you have encumbrances. You might have someone who is leasing, or you might have someone who the financing. You might have -- a buyer is different than a user is different from -- in the old days we used to have Internet service providers. You had upstreams, downstreams and most of the models for where we exist today are reflecting of that. You had allocated space and direct space.

Times are changing. There are many things going on in the community that we need to be able to accurately reflect that in the registry to show that within the registry this party -- this party's a bank. They're not an ISP. Do they need to have preapprovals to -- this is a court that took over some blocks due to

fraud, or some government agency as a result of certain problems relating to a lawsuit.

ARIN follows the directions from those entities, but in certain cases it's very difficult to see what's going on in the registry. And I think that looking at exploring policies that mirror reality are things that we should consider a good use of our time going forward.

John Curran: I actually got some notes for ARIN's operations and registry information in there as well. But the policy aspect is what I'm trying to focus on now.

Anyone else want to talk about changes to policy? Is NRPM perfect the way it is or are there particular changes you want to see? Mike?

Mike Burns: I would remove the needs test from transfer policy. It's not needed to conserve address space. And we have an example in RIPE that we can look at for years and see that none of the problems that were always described as the reason for keeping the needs test in place have materialized over there.

And second, I think that the 12-month resale waiting period needs to be eliminated. The presence of that waiting period precludes the natural development of a tiered delivery system with warehouses, with

inventory, with distributors, where if somebody -- an efficient buyer and seller of addresses could buy addresses and sell them efficiently, taking benefit of their vast experience, I don't think that the anti-flip fear is justification for the holding period.

I think that addresses should be treated as much as possible like property and should have all the rights and abilities that a (indiscernible) property match addresses to reduce the problems down the road such as William is describing with encumbrances.

If we put everything into a legal framework and treat it as if these were analogous or as close to property rights as possible, we'd be better off.

John Curran: Acknowledged. Anyone else want to speak to what we can do to make it easy in policy, what we can do to make it easier to transfer appropriate transfers? Go ahead. Jack? Marc, either of you want to pick up on either of the comments that Mike or William said?

Marc Lindsey: I would second the flip issues is not something we've seen meaningfully impair our sellers and buyers. I think it is reaction to speculation that we really haven't meaningfully seen. That being said, I think there is some speculation it's not where people are holding transiently and then

selling. It's a different form for which there's no policy to prevent.

But I do think that the needs justification has mostly been impediment for new entrants who are having difficulty navigating, don't fully understand how they can get smaller space. It's been mostly an impediment for newer entrants and small (indiscernible) entities, those larger experienced buyers with the ARIN community are able to navigate around all that.

We think eliminating needs would allow for a bit more equity. I think that's one where we've probably been to a point in time where the market efficiencies will take care of itself. There's ways to find bad actors, and we don't really need to continue to have that apply to any meaningful category of address space and not artificially cut it off at a certain block size.

John Curran: Jack, you wanted to comment?

Jack Hazan: Couple of seconds. Look, we've sort of stayed away usually -- I think maybe people have noticed, we're usually quiet during the policy on transfers at the conferences.

Obviously anything that makes transfers easier to happen is better for us as intermediaries,

because we'll get more transfers done and it will be easier.

And, sure, I think, though, to further Billy's point, at a minimum, if we could have the knowledge -- if someone has an interest in a block of addresses, be it a financing party -- even though you don't treat it as property or you do treat it as property -- if a lender has an interest and wants to somehow file a UCC saying that we have an interest in this block, I think it would benefit all the parties.

It just makes things clearer, more knowledge. To Billy's point, if a block is under an RSA or an LRSA, you could find out and the holder can find out by asking ARIN, but it would be easier for everyone if you could just go into the database and know what the status is of space vis-a-vis the relationship between the holder and ARIN.

All those things would make transactions clearer and more -- it lends more to the transparency that I spoke about at the beginning of this panel.

John Curran: Okay, excellent.

I'm going to move on to questions from the audience. We've got a few minutes left. So, Kevin Blumberg asks: Is the quality of IP address space still have similar concerns to it had in the past? What has

been done to improve the cleanliness of blocks on the market?

Mike Burns: I can speak to that.

John Curran: Go ahead, Mike.

Mike Burns: I don't think we've discussed what really has gone on in the market which is there's a severe shortage of blocks to sell and prices are going up very quickly. That's probably something that most people watching this are interested in. But prices are going up very quickly. So that's of both interest, I would say.

John Curran: Marc?

Marc Lindsey: I would add, related to the point Mike is making is that because address space is getting scarce, what you're finding is you have to dig a little deeper to find address space.

So early on, it was easy to transact around space that was registered to the registrants with no complexity, no (indiscernible) use. As we get more and more into the deeper territory of less freed-up space, we find ourselves having to do a lot more work either rejecting or helping sellers understand what their position is and going through a variety of hops to get them registered if they, in fact, are the proper registrant.

We're finding out that there's, good or bad, there's a lot of address space held by companies that are no longer operational or got acquired or assets have been acquired, so the intermediary space is spending a lot more time trying to get that what appears to be an abandoned address space to a proper holder so they can transact with ARIN.

So it is more work. We do think that's contributing in a positive way to what we're seeing, from ARIN's perspective, as more RSAs coming into existing. But it's harder to get that address space in a proper position (indiscernible).

John Curran: Got it. Anyone else? Jack?

Jack Hazan: Inverse to that is -- and we all generally offer space until it's gone through that process. And so a lot of times, if you have space that went through a process of clearing it through ARIN, through an 8.2 transfer, or just through getting the name properly changed, once it's gone through that process, you have a lot more confidence in the cleanliness of it.

And so it's actually -- so it actually has led to clearer records and more people being able to buy space with more confidence.

John Curran: Ben Bittfield of T-Mobile brought up an interesting question. Let's say you've got a lot of address space you've been using for a long time, but you've got holes in it. You've got a huge amount of address space but you've got some holes.

Is it worth to renumber, say, to try to clear out an entire /14 rather than monetizing the /16s you have spaced throughout?

I.E., is the price higher for a contiguous block than smaller multiple blocks? Who wants to talk about that?

William Sylvester: John, I'll take this one.

John Curran: Sure.

William Sylvester: We always encourage parties to maintain aggregation of numbers if at all possible. The larger blocks are definitely more rare. There was a time where I think there wasn't a differentiation.

I would argue that individual 16s, in many cases, are demanding less money on a per-IP number basis today than many of the larger blocks just because the larger buyers going after those larger blocks, looking for contiguous blocks, are willing to pay a little bit more for not having to hassle of putting together 16,

32, 64, 128, 16 individual transactions each with their own contracting processes, negotiations things like that. So there's value that's found there.

But anytime that you have some space that's not in use that you can make available, it's best to aggregate that the best that you can and sell it in the largest blocks you can.

John Curran: Go ahead, Jack.

Jack Hazan: I would say that you need to do a cost-benefit analysis, really. We're seeing more and more transactions happen on the smaller blocks. And a lot of the expenses of doing multiple transactions often are born by the buyers in any event. So at some point it depends how much it's going to cost you to renumber.

It's easy to sell /16s. And you could sell /18s, 19s and 20s also and get a similar return. We sort of see a pendulum going on the pricing. Like, we'll see small blocks trade at, let's say, \$30 an address. And the /16s are at 26.

But once those transactions happen a few rounds on these smaller blocks, we see the /16 catch up to it. There's definitely a premium if you could clear -- we see it in a very large space. If you could clear a /12 or clear a /13, a/14, I think you'll see a premium for that.

But less than that, I think the market pretty much has adjusted. And really they follow each other.

John Curran: Okay. We're winding down here, the panel. I have room for one or two more questions.

So, Aaron Hughes, 6connect says thank you all, excellent panel. Happy to see this kind of content. As for the question he asks: All of you have to do contracts. I'd like to ask, how do you define in your contracts an IP address block? What do you say it is?

Who wants to go first? Mike?

Mike Burns: We identify it as all rights and privileges to a block defined in the CIDR notation in the ARIN Whois database.

John Curran: Okay. Anyone else?

Marc Lindsey: What we do is we do say that you do have some exclusive rights, and those exclusive rights relate to entry in the registry of record following policy.

You do get the right to designate those IP addresses for routing purposes. And the seller reps and warrants that they have those exclusive rights. We sort of try to stay away from, as I mentioned before, going

so far as to say that there are, there's title to that property. But you do have it in the form of contract rights that are exclusive to the rightful registrants. And that is those are commensurate with having an exclusive entry in the RIR database and the ability to route those and have those routed by your ISP of choice.

John Curran: Anyone else?

William Sylvester: We describe it as all rights title and interest. As we started looking in this market in the fall of 2009 or early 2010, this was one of the biggest questions of how to describe this.

There's property which we've heard here, but clearly it's not property because in the ARIN contracts, it's not called property. Within that, though, what we found is we're transferring all rights, title and interest, which means as a seller anything that I have is what I'm selling.

So whatever it is, without defining what it is, is what gets sold. This looks an awful lot like IP as in intellectual property not as in Internet protocol.

But it finds itself being primarily transferred as a contractual right. So, if I've signed an RSA, I'm selling any rights I have to that RSA within the ARIN region. In other regions it's a little different. But within ARIN I'm selling that contractual

right. So the idea that I'm selling all rights, title and interest is all rights, title and interest to the contractual right that I have as a result of signing that contract with ARIN.

John Curran: Understood.

Go ahead, Jack.

Jack Hazan: Our contract has similar language -- all right, title and interest, all right, title and interest, what do we say, in certain IPv4 Internet protocol addresses and we list them. And then in the reps and warranties, we just make sure that we state that it's subject to whatever rights the Internet registries have in those numbers as well.

John Curran: Excellent. So we're coming to our final question. And it's Mr. Owen DeLong who asks: Is it necessarily a good thing for the community in general, not just for the people who profit from it, to make transfers easier?

Marc Lindsey: I can take a quick stab at this one.

John Curran: Go ahead, Marc.

Marc Lindsey: We're ideally brokering through parties of interest. We didn't create the demand. But there are clearly network operators who feel that v4 is essential to their ongoing operations.

And they're clearly address holders who have excess v4 space that they're not using.

So the question isn't for the brokers who are facilitating, satisfying demand of ISPs, cloud providers, network operators; there clearly is a decision has been made amongst network operators that v4 address space is where they're going to continue to operate their networks.

So, yes, we think as long as a business who believes that it is in their economic interest and a commercial interest to operate a v4 network that there should be a mechanism to take those addresses that are being unused and put them into the highest possible use for those network operators who continue to believe v4 address space is important to their extension, their part of the Internet.

John Curran: Got it. Anyone else?

Mike Burns: I'd like to address that. I would say the community has voted on this. And they passed a transfer policy. They want transfers to happen.

It boggles the mind to think that they would transfers to happen inefficiently. And the question was how would we want this market to be more efficient. And, yes, it will make our lives easier and maybe make

some more profit for us. But really it's the community that wants transfers. We're just here executing the community's wishes.

John Curran: Acknowledged. Jack? William?

Jack Hazan: Sure. Look, I think to Mike's point that the process definitely should be as easy as possible if you want to -- you don't want to slow down trade with inefficiencies.

Sure, if the community wants to make it more difficult, quote/unquote, to do transfers because they feel that there's fraud or something like that, yes, you shouldn't hold back on any of the steps that are necessary to make sure that everything that's being done is proper.

But as far as efficiencies, there's a market and all the players on both sides are part of the community and we shouldn't put hurdles in the way of getting deals done.

John Curran: Acknowledged. William?

William Sylvester: I'll finish up with this one. A little bit different perspective. Economically speaking, the price that's getting paid doesn't necessarily -- while there are parties that are enriched, many times where is the money going? It's to cleaning up these networks that had no budget to clean

them up, to make them available to providers that need them.

As we work to adopt IPv6, IPv4 is still a predominant protocol and still very necessary. And even as IPv6 is adopted, the v4 networks are still going to exist for some time. So the parties in the community that's part of this industry that leverages these different protocols is going to continue to need some of these resources.

And by making an economic argument to management of certain organizations, it enables them to re-engineer their networks, clean their networks up, transition that space over to other third parties who could better utilize the space more consistently with the policy of the community.

So what we've done is we've taken, as we started off earlier, I mentioned in 2009, prior to transfer markets being as vibrant as they are today, half of the Internet on IPv4 was being used.

In 10 years, we've increased that by close to 30 percent. So now that we're about 80 percent of that utilization. And granted we're talking BGP and there are other obscure protocols and things like that that could be argued.

But in the end, this is giving an economic benefit to parties to be able to re-engineer their networks and to do cloud migrations, to keep the Internet growing and functioning efficiently. And that's in the best interests of the entire community.

John Curran: Excellent. I'd like to thank all our panelist. We're now over time. So I'm going to wrap this up, so I don't cut into everyone's break.

Thank you for joining us. I think the audience found it wonderful. Hope to see you again at another ARIN meeting.

I'm now going to transition us into break. We have a break and we're going to go -- that's a great question. Can we get all of the break events done and resume by 2:10? I'm asking staff.

Remote Host: Yes.

John Curran: We're on break, breaking for 21 minutes. We hope to resume with the operations update. That's 2:10 p.m. Eastern time. Stay around for the break if you want to be here for the stretch. Thank you, everyone.

[Break]

Paul Andersen: Welcome back, everyone. We'll have Richard Jimmerson give us an update on operations. Then we'll have our treasurer give us an

update on finances. And then I'll give a report on behalf of the Board.

So I'll turn over to the chief operating officer of ARIN, Richard Jimmerson, to give the operations update.

Richard Jimmerson: Thanks very much, Paul. I'm Richard Jimmerson. I've been with ARIN for quite a few years now, just for the last few years as your chief operating officer.

I'm getting started with this presentation, just wanted to relay to all of you how important it is to us that you're here with us today and that we're actually able to engage with you.

We have very committed, dedicated staff to the mission of the organization that enjoy their work, that enjoy the service that we provide to you. And we're -- we're happy to present some of the work that we've done here over the last six months and some things that are coming up here for the rest of this year.

Next slide, please. So pandemic operations, all of us are working inside of pandemic, of course, worldwide.

I just want to give you a little bit of specific items to ARIN. The staff entered 100 percent remote work environment back in March of 2020. We've

been doing this just over a year now. During that time, several ARIN staff members have come down with COVID-19. And we're very thankful that the staff have come through that and that people have recovered.

During the time when we've had people out sick or ill, or they had very close family members out sick or ill, we've all covered for each other and worked very hard to keep the operations running for all of you.

There's a limited staff reopening program that we initiated back in the summer of 2020 that's currently still under use.

During the time from March to the summer, no one was able to go in and use the office at all unless there was some sort of emergency operations issue that required that staff be able to go in there.

But since the summer of 2020, people can fill out a form, agree to certain terms of use for the office. And we have about five to 10 people in the office per day on average going in there. And they're following safety protocols of course and making sure that everyone stays safe.

We continue to follow guidance from local and national governments on how we should proceed forward with our work and making sure that no one is put at unnecessary risk.

Now, we continue to focus on our customer service and the continuity of the registry operations. We had a plan at the beginning of the last year. We were able to execute on that through the end of 2020.

We're executing on our plan with 2021 this year to continue to get outstanding guidance from the Board of Trustees and the community through the Board of Trustees on how we should be operating as a registry.

We're very happy to continue that work, even amidst the pandemic. And we're looking forward to moving past the pandemic, like I'm sure all of you are.

Now, one of the things we are doing is we're being real about what's happening post pandemic. But we don't believe we'll go back to the way things were before.

We were very much an everyone-in-the-office-every-day shop at ARIN for the last 20 years. And what we've found is that we're really good at remote operations in some areas.

And we want to be able to keep the good, even post pandemic. Although, a large number of us will be back in the office every day of the week once we're able to safely do that.

Next slide, please. Here in 2021 we're fully engaged as we continue to operate in the pandemic

environment. We're online with a lot of you now instead of in person, looking forward to going back to some of our in-person activities here sometime soon.

Hollis gave an outstanding presentation earlier about how we pivoted and how we transitioned to online. Similarly, we're going to pivot again and we're going to do a mix of the online with some in-person events as we move forward through the end of the pandemic here.

Just want to highlight that the Routing Registry that we deployed last year was followed up with some additional work, and we deployed some API pieces for the Routing Registry in Q1 of this year.

And we continue to add to those. And that's a continuing piece of work. We're iterating on the Routing Registry inside ARIN Online; it's become a very popular product. And we continue to improve that.

The demand for registry services continues to grow without a doubt. There are organizations that we're interfacing with and answering questions for now that are more than ever before. So when it comes to ARIN's operations and services, it's much more than just the people who have a contract with us, if you look at the delivery of Whois services and increasing demand for those services.

Governments, law enforcement agencies, don't have agreements with ARIN. They may not even hold registrations in the database. But they need information from the organization in order to do their jobs and we're constantly accommodating a growing need inside that space, in addition to a growing ticket load inside the organization.

Our due diligence practices continue to expand to counter growing fraud attempts against the registry. We spent a good amount of time talking today and previous days about, hey, things are changing in the world in terms of the use of the registries. One of the things we just talked about just a little while ago is IPv4 transfers. IPv4 transfers create a lot of work for the organization, especially in the due diligence area.

I think I heard in the panel just a little while ago that, hey, the supply isn't there like it used to be; the easy stuff to source for other organizations to receive a transfer isn't there as readily.

And really what's happening is, is the harder-to-assert, in terms of registration rights, IPv4 address blocks are starting to present themselves to come inside the transfer space.

And it's not as easy for some of these organizations or individuals trying to attest they're

connected to the organization to be able to prove that, to be able to demonstrate that to us. And it takes a great deal of due diligence work by the registry.

And, in fact, a large portion of the work that we put into this doesn't result in a successful transfer; it basically, what it is is us thwarting a transfer that should not happen that could damage the system that we all rely on right now. We're putting a lot of work into that. It's taking a lot of our time.

We've added a senior product owner for routing security services since last time we talked. The community is using our RPKI services and our Routing Registry services at a level we didn't even anticipate just a few years ago. RPKI had a very slow uptake, but that's not the case anymore.

And as we continue to grow those services and modify our systems to fit the need of the community, the routing security services became evident to us that we need to bring someone in to product own that area of our services.

And we very specifically put that position under our chief customer officer answering to the customer relationship of our organization and our community.

And they oversee work that's being done in all other areas of the company relating to routing security services inside engineering and otherwise.

And we have a new position that we're announcing this month. So you should see something announced here soon. We've always had security staff inside of our organization. But we're looking to upscale that presence inside the ARIN registry organization and bring senior level leadership onto the ARIN team in the area of information security operations.

You'll see a new position being announced for a very high level information security staff person to be joining the executive staff of the ARIN organization.

Next slide, please. So a little bit about ARIN 48. This is where we are going to talk about next meeting coming up.

I think the last couple of times we've given this presentation in this virtual environment we said we're cautiously optimistic about doing the next meeting in person.

Well, we've kind of given up on the cautiously optimistic language. And basically what we've done is we've said, okay, we're going to plan for

the next meeting to be hybrid, no matter what. And the place where we're cautiously optimistic is the in-person portion we're planning. But the online portion will happen as planned, as scheduled with no last-minute changes or anything like that. So I'm giving you the straight scoop on what we're doing for ARIN 48.

The current plan is it's going to be held across three sessions. The first session is going to be virtual Public Policy Meeting. That will be on the 19th and 20th of October. And it will take place just like the one we're in right now.

And so you should expect the same type of behavior and service in terms of the conducting of the meeting on the 19th and 20th of October for the PPM portion of ARIN 48.

On the 28th of October, we're going to have a virtual election forum, wherever everyone will have equal access to the candidates and the election process inside the ARIN organization, and be able to find the information they need there to participate in the election.

We didn't want to plan for that to be in person and then have to back it out and be virtual. So what we've done we've gone ahead and planned that as

virtual up front. That's what you should expect for the 28th of October.

And then on the 4th of November, will be the hybrid Members Meeting. So that will be like the today portion of the meeting. And it will be about half-day long or so. That will be in person in Minneapolis, Minnesota. Minneapolis will be the location for an in-person portion. We have NANOG happening in the days prior to that in person planned for Minneapolis.

Then the ARIN Members Meeting will be a hybrid one the day following NANOG. And so what that will look like is your regular in-person portion and this online facility that we've been enjoying over the last couple of meetings happening in a hybrid way.

So you should look forward to that, but that's what the plan is currently. And if there are any changes to that, as we learn about them, we'll let you know about it.

So it's a mix of virtual and hybrid to ensure the highest levels of accessibility and equal participation options for all of our mission-critical topics.

And, of course, these plans are all subject to change based on what's going on with COVID-19, any spikes in the pandemic or not, so on and so forth.

Even if the WHO and the CDC and everyone came out and said the pandemic is completely over, you should expect to see the meeting delivered this way in October and November. The only thing that would change is if the pandemic changed a bit and it prevented travel and we decided that we couldn't do the in-person portion. But we'll let you know.

Next slide, please. That's it. Happy to take any questions that you have. I'm available to answer questions here. Paul and John are also available online.

Remote Host: Reminder to put your name and affiliation in the question and answer when you type it. And raise your hand if you would like to be acknowledged to speak.

Paul Andersen: You are wearing a mask, John. I was, like, is this some weird Zoom artifact?

Richard Jimmerson: Should put a picture of John with his mask.

John Curran: It unlocks my iPhone.

Paul Andersen: Everyone, quickly take a picture of this.

John Curran: Only one on my face, though, Paul. Yes, we all have to stay safe. And hopefully

we'll be able to have a nice, safe ARIN 48. But we're planning hybrid.

Paul Andersen: And we'll obviously see what 2022 brings us. We hope normalcy but it was just a year ago we thought it was just going to be Kentucky and we'd be back -- I can't remember where we were supposed to -- Seattle, we were supposed in Seattle in October.

Richard Jimmerson: We were supposed to be in Tampa today.

Paul Andersen: Correct. Any questions? I don't see any.

Richard Jimmerson: Thank you, everyone. Thank you, gentlemen.

Paul Andersen: We have Open Microphone. That's always a great opportunity, no pressure on that.

I'd like to introduce Nancy Carter, who is one of my fellow board members and also a trustee treasurer and treasurer trustee, a very trustworthy person. Over to you, Nancy.

Nancy Carter: Thanks for the introduction, Paul. I appreciate that.

Good afternoon and good morning to some of you. As always, I expect the ARIN treasurer's report to be one of the highlights of this meeting, which I suspect is why we save it almost to the end of the

three-day agenda, as in saving the best for last. I can only assume if you're still here with us on Zoom it's because this is what you've been waiting for.

I believe I promised you all a joke when we last met in October.

Have you heard the joke about the interesting accountant? No? Me neither.

I couldn't serve as treasurer without the help and support of the ARIN staff and my colleagues on the Board of Trustees. I would like to thank the Financial Services Department for their continued dedication to evolving Financial Reporting and metrics, and for their commitment and ability to transition to remote financial services over the past year.

The Financial Services Department, under the CFO's leadership, has accomplished a great deal over the past year. And I'm happy to be able to share some of that with you in my presentation.

Next slide, please. I'm going to update you on the activities of the Finance Committee. I will review the 2020 revenues and customer growth, operating expenses and budget variances, look at ARIN's financial position, provide highlights of the investment portfolio, and then finally look at the 2021 budget, all the things you've been waiting for.

Next slide, please. As you can see, the CFO and I keep the Finance Committee really busy. It's worth noting that I haven't yet met the CFO in person, but we spend a lot of time on Zoom getting things organized for the Finance Committee and aligning activities for the ARIN Financial Services Department.

Since we last met at ARIN 46, the FinCom recommended Board approval of a new auditor. So we're now working with BDO. And in fact BDO will be presenting the audited 2020 financial statements to the FinCom tomorrow.

We've also approved a new investment consultant, and they are now managing the ARIN investment portfolio.

While undertaking that activity, we finalized and recommended Board approval of the new and improved Investment Policy Statement, including revised return objectives.

And last but not least, we reviewed and rebalanced the investment portfolio to align with the new target asset mix that's set out in the new and improved investment policy statement.

We worked through several iterations of the 2021 budget and received Board approval of that budget in December of last year.

As you might imagine, many of our activities over the last year were complicated by the impacts and uncertainties that we all experienced due to the pandemic.

So I'm really pleased and delighted with all of the things that the Financial Services Department has managed to get done in the past year to the benefit of ARIN.

Next slide, please. This chart shows you total revenues for 2020. Our revenues are about four percent below what we budgeted. The annual registration maintenance fees were \$18.8 million in 2020, an increase of more than \$350,000 over 2019.

New registration assignment and allocation fees were \$1.5 million in 2020, an increase of almost \$200,000 over 2019.

Together, the registration fees were \$20.3 million in 2020. And that represents 97 percent of our total revenues. In aggregate, ARIN's revenues were just slightly ahead of those in 2019.

Next slide, please. Where does revenue come from? It comes from our customers. You can see in this chart, Registration Services Plan customers increases occurs mostly in the small categories. From

September 2019 to March 2021, RSP customers grew by 831, or 14 percent.

Most of that growth occurred in the small to 3X small categories, as we expected. Combined end user and ASN-only customers at March 31st, 2021 were approximately 16,000, which is relatively flat compared to September of 2019.

We can also see that transitions from legacy, which is nonbilled as you know, to LRSA is moving in the right direction, although slowly. 100 legacy customers have signed an LRSA agreement since September of 2019. We'll be working on various strategies to reduce the high number of legacy customers over the next while.

Next slide, please. Operating expenses. As I discussed at ARIN 46, the pandemic limited the spending in several of ARIN's expense categories in 2020.

This resulted in a \$2.6 million budget variance for the year. Ultimately, operating expenses were \$21.4 million in 2020, which was just slightly more than ARIN's 2019 operating expenses.

On the next slide, I will highlight the major operating expense variances. Material budget variances are shown in this chart. Personnel expenses

were slightly under budget due to a small variance in the number of employees in 2020.

Also embedded in this variance is accrued comprehensive leave. As I reported to you in October, the health and well-being of the staff is of paramount importance to the Board.

And ARIN continues to encourage team members to take time off and highlights the fact that time off is a necessary break to maintain good health, both physical and mental well-being.

The largest operating expense variances occurred due to the cancellation of in-person member meetings, travel and outreach activities, as you would imagine during the past year. Those cancellations drove a combined budget variance of \$2.1 million.

Next slide, please. The statement of financial position, or the balance sheet, continues to represent ARIN's highly liquid financial position.

ARIN has almost \$35.5 million in liquid assets -- represented by cash, accounts receivable and investments -- to meet its ongoing operating needs.

You will note that property and equipment was restated to reduce the amount for capitalized software development costs. And we also aligned revenue recognition for all our accounts receivables.

This was done during the year-end audit to comply with GAAP reporting requirements. One of those fun things that accountants love to talk about.

Next slide, please. The financial markets were very good to ARIN in 2020. Our return of 15 percent on the long-term reserve fund added almost \$4 million in value during the year. As noted earlier in the presentation, the FinCom changed the target asset mix for the long-term reserve fund.

This was done to protect the investments from potentially large negative swings, as we saw in 2018 and in March of 2020.

Just last month, the FinCom elected to reduce investment risk by adding a more conservative investment portfolio mix.

The Finance Committee and ARIN staff continue to work very closely with our new investment consultants to manage our investments.

Next slide, please. Net assets are demonstrated or shown in this chart. Net assets at December 31st, 2020 were \$27.5 million. This is a \$4.3 million -- pardon me, let me start that again. This is \$4.3 million or 18 and a half percent more than budgeted net assets for the end of 2020.

So as you can see, this favorable net asset position is the result of the lower-than-budgeted expenses in 2020 and the higher-than-expected investment returns.

Next slide, please. The increase in those net assets and the under-budget operating expenses result in improved operating expense coverage ratio by the end of 2020.

This is a metric that we've looked at at the last few ARIN meetings. The financial results in 2020 grew the operating expense coverage position by 15 percentage points.

Next slide, please. However, our return to somewhat hopefully normal in 2021 reverses the gains that we saw in 2020, with budgeted operating expenses up \$24.4 million for 2021.

We have a budget that requires use of investment funds to balance the budget. This means that the operating expense coverage ratio is expected to drop by 24 percentage points during this year.

Continued use of investment assets to balance the ARIN budget could significantly reduce the amount of investment funds that ARIN has for use if the organization is ever in financial distress, or would

also limit the availability of funds for strategic investments.

And with that, I turn to my last slide, please. Thank you for your attention. And I'm happy to answer any questions.

Paul Andersen: Questions for Nancy? We already have two.

Nancy Carter: Wow.

Paul Andersen: Staff will do their thing.

Remote Host: She's positive. Or she's the one everybody wants.

I have David Huberman from ICANN, you mentioned that you and the CFO have further protected ARIN's reserves against further risk by more conservatively allocating capital. Can we take that to mean that a higher percentage of funds allocated to a fixed income securities?

Nancy Carter: Where is Brian?

(Laughter.)

Nancy Carter: Where is Brian?

John Curran: I actually don't know if Brian is on, but I'm happy to take this.

Nancy Carter: Wow, John. Do you know the answer to this question?

John Curran: Nancy, you'd be amazed at how much I know about the financials. I'll start, unless Brian is on -- I'll start and Brian can correct me. But actually the FinCom was involved in all this.

The FinCom, consisting of several members of the Board of Trustees; and Brian, our CFO; myself; and Richard looking on talked to our investment firm, our new investment management company, about looking at the window of risk and expected return.

And we've been using a fairly generous risk envelope and that's allowed us to have great returns. But it's really not in keeping with the purpose of our investment reserves. Our investment reserves are supposed to be to bolster the financial security of the organization.

So by dialing down the risk envelope just a bit, we're able to get something that's more responsive -- better suited for the organization.

That does mean, when it comes to allocations, we ended up with slightly higher allocations to fixed income securities and slightly higher -- slightly lower investments when it comes to equities that would have been considered more risky.

And so it's a very minor tweak. But it does bring the risk envelope down and the anticipated return down.

The anticipated return drops, Nancy if I remember correctly, we dropped down to about two and a half to three percent where we might have been four to five before for anticipated return.

Paul Andersen: We have Brian now. If Brian wants to turn on his video and comment as well.

Nancy Carter: Brian said that's correct.

Paul Andersen: Brian said it's correct. He's shy sometimes. (Indiscernible). He wasn't expecting us. He doesn't have the official, approved background.

Brian Kirk: I did not have time to get my jacket on. But that's correct. We reduced the estimated target return by about, I would say, 3.2 percent, going from a little bit more than six and a half percent to about three and three-quarters percent is the actual target return now.

And that was done by realigning the target asset mix, which reduced the amount of funds invested in equities and increased the amount of funds invested in the fixed income portfolios.

Paul Andersen: Thank you. Thank you to all of you.

Nancy Carter: Great question, David. Thank you. And next time I'll have the investment policy and the investment -- the asset mix in front of me so that I can answer your question.

Remote Host: All right. The next question I have is from Andrew Dul. He asks: Nancy, thanks for a great presentation. Do you have any detail about the four percent under expected budget for 2020 revenue?

Nancy Carter: Yes, I do. We didn't meet our budget targets. Now, Brian can speak to that as well. So, Brian has the detail on that.

Brian Kirk: For the 2020 revenue budget, I think we overestimated the amount of new revenue from initial registrations. I think we went -- the budget was based on previous years' trends, which is not necessarily something that we can rely on going forward based on the changes in the IPv4 marketplace.

Paul Andersen: And given it was a pandemic, yes, some of the projections were a bit different. Business models out there were obviously thrown into a loop. So, thanks, Andrew.

Nancy Carter: Thanks, Andrew.

Paul Andersen: One more question, I think.

Remote Host: One more question. Again, thanks, Nancy. This is an extremely digestible format. And we appreciate the breakdown.

Nancy Carter: Great, thanks. And thanks to Brian for that digestible format.

Paul Andersen: Thank you to Nancy and Brian. You'll have an opportunity in Open Microphone. They'll stick around here on panelist row to answer questions. We'll end the treasurer's presentation and I'll introduce myself as the Board of Trustees Report.

So, again, yes, I am the Board chair. I don't have a long presentation for you because as historically I've tried to sum up some high-level items that have occurred. But we generally have seen -- because the presentations that lead into it obviously give a lot more of the detail. But there's a few items I'd like to preface.

Next slide, please. There's a few areas that the Board has been spending time in the last little bit for this year. We have been doing a much more continuous cycle of strategic planning. It was always something that was kind of on our radar. We've been trying to stretch out our planning. For those that are not familiar, almost all our (indiscernible) planning

happened during a single strategic planning session in person in August of each year.

One of the things that would feel great about that, I gave you that one-year shot. So, we've tried to make it so that we're doing continuous strategic planning throughout the year culminating in our August retreat so we can walk in some plans, so the staff can start to develop operational plans and budgets.

The pandemic has forced us to move to a different approach. And since we can't get in person anymore, we've been spending quite a bit of time almost every month having to digest into a few topics.

So a few areas we've done is we are looking at ways that we can continue to mature the business through this. A reflection on just the natural evolution of an organization like this speaks to the testament of the staff. They're looking to look at how we operate and see how we can adjust, because especially the market and the customer base and the community have evolved greatly.

We've already spoken about that, about how things that ARIN accepted over 25 years ago simply have evolved since that.

We continue to do a lot of work on our Board governance (indiscernible), we got into that. Nancy discovered this, but we've done a lot of work as well on financial modeling. We want to try to understand what it is that costs to run the organization -- not just as a whole; that's a more straightforward answer. But also just what are the various cost centers, what are programs costing us.

And we've put a big focus, and my thanks to the staff for that. I try to make sure that we have measurable programs, not just in terms of cost but in terms of just [inaudible]. And this is not meant for any other reason other than we want to make sure that programs that are successful are more well supported; programs that are struggling, we look at to see if there's other ways; and programs that maybe have passed their time are retired.

And speaking of retirement as well, there's an accelerated focus on looking at more formal product management and customer service approaches. Looking at product lifecycle, how -- making sure that we have an understanding of what services our customers are looking, what's the demand forecast of those, and making sure we're (indiscernible).

Next slide. I spoke about governance. Nancy, who was just up here, leads a three-member committee with Catherine Middleton and Peter Harrison. And they've been ongoing since last year and it's starting to culminate.

We're expecting that we will be bringing community consultations forward in the coming months because we would like to try and wrap this process up as much as we can by the end of the year.

The Board has accepted the third-party reports that we've accepted and there's a lot of areas that we're now trying to dig into.

There's a lot of simple things we're doing. For instance, we're trying to define Board roles. What is the role of the treasurer, the chair, a Board member? The same way you'd have a job description for anyone else.

It might sound a bit (indiscernible), but it's important because we want to make sure there's alignment on what it is the Board should be doing and where the responsibilities and accountabilities lie for that.

We look at structure -- again, what's the right size of the Board -- and tenure, which goes to how long should individual terms be both in terms of just

elected term and how many terms are appropriate. And also just what skill sets we need around the table, because we have certainly benefited in the past few years getting a much more diverse set of voices around.

Please look forward to an ARIN consult near you to start to see feedback on that. Next slide, please.

I spoke a lot about a shift (indiscernible) product (indiscernible). And while this is a strategic direction, obviously, my kudos to staff, John, Richard and John Sweeting and other teams that have been putting a lot of work into this. There's been added staff added to effectively act as a product manager.

We're looking for ways to continue to improve ARIN services, try to put a more formal methodology both on how projects are developed, how they're measured with success. And going back to the financial modeling, how much they cost so we can make sure that these are set to equitably recover.

Part of one of the first initial -- and I think the Board is very excited as is the staff -- is this Premier Support Plan that launched. I think as you saw on the first day there seemed to be quite an appetite. I know there's a lot of people [Inaudible] how quickly [Inaudible]. I think that's just the first

of many of those to come. Again, (indiscernible), better training, better cross training, looking at all operation processes to try and figure out where we can target to improve.

Next slide, please. Which of course brings to fees. We have started the fee consultation. Staff put in an enormous amount of time. Brian's team and I know John Sweeting's team did a lot to try and understand our financial modeling. And we're getting data at depths we've never seen before. And it's made the Board's life a lot easier.

There has been countless hours spent discussing them. What we have come up with is the consultation in front of you. We highly encourage you to please give us feedback on that.

We either are taking it here at this Open Microphone. It's also, we've already had some feedback -- next slide, please -- on the list. So we certainly have seen some impact already and some good feedback. And we continue to look to that feedback so we can make a decision on how to proceed at the end of the presentation.

We really do stress, we need to hear from you, our stakeholders, our customers, our members and

the communities. And that's really the snapshot on fees other than we look forward to the feedback.

One last thing I need to do -- last slide -- I'd like to thank Chris Woodfield who left the AC last year; he's taking some time off. But he served for a term and I look forward to seeing his continued participation in the community. I believe he's here today. On behalf of the Board, I'd like to thank him for his service on the AC.

Next slide. I'd really like to take a moment to thank one of my previous fellow colleagues, Dan Alexander, who many of us have known. He's been -- I know it only shows 2014; he's (indiscernible) since 2006. But he's been in the community as long as I can remember. He was an invaluable member to the Board.

I don't mean -- I mean this completely as a compliment, he was Mr. Technical Debt. This community owes Dan a huge debt for his stress on technical debt.

That strategic focus, he really pushed that item as a fellow Board member to the community, along with many other contributions. Through his term on the Board, he really put the importance of that to the staff. And staff responded very positively. And right now the organization's in a stronger position than it's ever been in that area. So my thanks to Dan for his

service -- not only as a Board member, his service as, previously (indiscernible) AC chair and with the AC. Again, take our virtual plaque. Hollis told me she's working on this feature, and give our thanks to Dan.

With that -- yes, thank you, John -- with that, I would like to just move straight into Open Microphone. If you have questions on my report or questions on any of the previous reports you've seen today.

We have in the virtual table here with the Board, the AC chairs, many of the senior staff. So please raise your hand or put a comment in the Q&A. We're open to any comments, questions or feedback you have. And with that I'll turn it over.

Although I see the word "no open questions." Do not give questions. John has spent three days preparing for an operatic in C minor and put on his tie.

It's a strange community. I never know if I'm going to get 85 questions (indiscernible). I'll give it a few seconds because we are ahead of time -- well ahead of it, so we have some time.

John, is there any closing thoughts you'd like to give before we close the microphones?

John Curran: I would like to thank the community, because we didn't know how we were going to

fare in this virtual world. And if anything, I think the discussions have been more focused. The participation has been high. Anyone who wants to come in and speak to the topics at hand, we've had great involvement.

I know it can sometimes be difficult. For some reason it's easier to get on a plane and go somewhere for three days than it is to fit in three hours each day while you've got -- locked in your house and the kids and the dog and the background noise.

But everyone has taken the time and everyone has made it possible to participate. And I do think ARIN is stronger as a result.

Going forward, we will be looking at what we can do to keep the strength we've picked up here. Maybe add the in person component as reasonable. I don't think we'll ever get back to the travel we always had because maybe we've learned something.

But we'll --

Paul Andersen: That's a bad thing.

John Curran: We'll try to add some virtual back in as much as possible.

Paul Andersen: I'm sure many of us who used to travel more, our plus-ones or others are quite tired of us and would like us to get out of the house.

I would also like to thank, again, both to Chris and Dan. Again, it's not a goodbye; it's thank you. And I know we'll see both of them, and I notice they've put in chat, we'll continue to see them involved in the community and I'm sure in positions of leadership in the future.

And to all the community, I look forward to seeing you again. These virtual formats have been great, but obviously it would be nice to be able to have those hallway conversations again.

With that, we have a few things in queue. So I'm going to just take them myself if that's all right.

John O'Brien from the University of Pennsylvania: I appreciate how well run the ARIN meetings are. I feel like it is a worthwhile use of my time -- concise, (indiscernible) and a good value. Thank you very much, John, for that. The praise obviously goes to the staff, the Board.

I'm involved a little bit, but they really do make it easy and it's been amazing to see how well these virtual meetings have been performed.

Next one is kind of for staff. Robert Hoppenfeld asks: Where can we find a replay of ARIN 47? I'm going to guess you'll find it on ARIN.net. I don't

know if Beth or Hollis wants to give us the answer on specific timing and where.

Hollis Kara: Sure. We will be publishing that on the ARIN website in about 10 business days. There will be a full webcast and transcript. And all of the presentations will be available packaged with the meeting report. And we'll publish an announcement on the website and ARIN Announce as soon as that's available.

Paul Andersen: We have one more comment. And (indiscernible) take the comment and ask staff to read the question.

Marlin Martes says: Thank you all ARIN administrators for your patience in hosting this meeting. I found the conference engaging. Despite the virtual format, you've all done a wonderful job of organizing the discussions and presentations, especially (indiscernible) to engage with the ARIN community.

Yes, the social opportunity, it was good to get the social opportunities. Thank you very much, Marlin, for your comments. We all appreciate it.

We actually have a question here, so (indiscernible) a few more. Staff, if you could get the next question from Gary.

Remote Host: Sure, from Gary Giesen from CentriLogic and ARIN AC: An important point was raised during the IPv4 transfer panel. We often assist clients with acquiring resources from ARIN who either don't have the expertise or the inclination to deal with ARIN.

Trying to do this on behalf of a client is painful using ARIN's current systems, as they don't allow for some type of agency arrangement where an organization can designate an agent to act on their behalf. Having this capability would eliminate a lot of ARIN online account sharing, et cetera. Short of that, at least the ability to have someone else cc'd on tickets, so we can produce customers to update them.

Paul Andersen: I think it was "prod customers to update them.

Remote Host: Prod customers to update.

Paul Andersen: I could see you were, like, he's probably be using a short form but he really was just using the word "prod".

Gary, expect an email from an ARIN product manager near you shortly. I think that's great feedback. And obviously, especially since we're stressing security, the fact that people are sharing ARIN accounts, while we understand that might be a necessity, obviously if that can be dealt with. And if

there is sufficient demand that's something that we can certainly look at.

I'll take our next question.

Remote Host: David Farmer from the University of Minnesota: If the fee consultation goes forward, a much larger portion of the fees will come from end users. Will end users see a comparable increase in effort and outreach to issues important to end users as a result?

Paul Andersen: I'm going to start this. I know John -- don't even have to put up your hand. I think the feedback that I'd want to hear, David, is where we're lacking in that now, because I don't think there's ever been a strategy that -- to prefer a certain group just because, because -- remember there are end users, too, who total fees have paid -- who have paid more than some ISPs and such.

I don't think that's a strategy. I'm sure John will want to say the same thing. But certainly I think the team, especially Hollis, would love to understand areas where we could (indiscernible) average because if we're lacking on that right now, regardless of the fee consultation, I would like to I think, speaking on behalf of the Board, see that. John.

John Curran: David, certainly we're not trying -- we haven't been trying to exclude end users. And we would love to hear any issues that end users are having with ARIN services or how we do things.

If there's a gap, we need to address that gap regardless of what happens with the fee consultation.

If you know of issues that aren't being addressed for end users, we need them to come forth, definitely. And help channel that.

We do outreach to the extent we can. We do send messages. But the problem is that it's very hard to take someone who sees this as just a fee and an invoice each year and tell them there's a whole organization for them to get involved in. A lot of them don't have the time to or necessarily the interest to do so.

But we're open to any ideas for outreach right now, regardless of what happens with the fees.

Paul Andersen: Thank you for that. Brian Jones asks -- Virginia Tech -- said: Thanks for the stretches during the breaks.

I guess the question to staff is can we do it in person? Are we still going to have Erin sessions? Not ARIN the org; Erin the stretch person -- not to be

confused with Erin, our HR person, or Aaron Hughes. That's a good question. When we go back in person are we losing the stretch breaks?

Remote Host: As long as Erin Pratt is at the meeting and willing to conduct stretch sessions, we can find a way work those in

Paul Andersen: Good to know. Let's take Andrew Dul's question, please.

Remote Host: All right. Andrew Dul with 8 Continents Networks, LLC: Building on David's comment, what outreach is ARIN going to do to all these new end user members? That is, these orgs will now be members and get them to participate in voting and other member-specific activities.

Paul Andersen: So this is a topic -- and (indiscernible), John, this is a topic that we're well aware of. We are still finalizing just a relook at membership in general. But the answer is, yes, there would certainly be engaged outreach to any new-found members or potential members. John?

John Curran: Andrew, any of these organizations that want to participate as members will be able to do so. We're asking them to -- we'll be charging everyone the same fee schedule. That fee schedule includes membership.

We do need to figure out what we do statistically because you don't want to have 14,000 members and find out that your participation level is only 300 organizations at every meeting.

We need to deal with that. That may require some nuances with things like quorum and voting. But our intent is that we leverage this community. We try to get them excited. We try to get them involved as members.

Long term, we'd like to that happen with them and with the existing ISPs.

We have done analysis of the existing 6600 Registration Services Plan customers. The current ISP community. We only see, between the voting and the meetings and PPML, we only see about 1400 or 1500 of these organizations. And so we're wondering where'd the other 5,000 go?

So, yes, we want to get the new smaller in general end user members coming in, get them involved. And we'd like to hear back from the remainder of our ISP community that we have today that hasn't been participating in ARIN.

Paul Andersen: Thank you. So, we've come to, looks like, the end of the questions. I'd make a last call. If you'd like to raise your hand, we'd love

to hear from you. Love to hear the sound of your voices now.

I'd ask, if you want to type a question, you type the word "queue" first, which has been successful so we know to close that. We are a little bit early, so I'll give about a half minute to see if anybody else would like to raise.

I did see some in chat. (Indiscernible) to say we won't rechat, I see there's some discussion about the number of meetings in person, virtual.

Before the pandemic this was already a discussion because there's a question about how much more policy there is to do or does the amount of policy justify having these -- traditionally in April we have a stand-alone meeting.

I can assure you no determination has been made, but we'd love to hear your thoughts on it because that would be topics coming to a Board table near you soon. Obviously now that we see the success of a virtual meeting, perhaps it may be reducing the number of in-person and going to virtual, relying much more on virtual or keeping things the same.

I think certainly we've seen over the pandemic that while there are certain things we can't do virtually that there can be wider (indiscernible)

community [inaudible] that perhaps can be a good reason on how much travel (indiscernible) because there's certainly many of us I think that thought there's a wee bit too many conferences (indiscernible). You could be on the road 364 days a year.

I see a hand up. I'm on the wrong tab. But I don't see who it is. Can we go to the hand up, please.

Remote Host: Absolutely. Mercia Arnold, I'm going to unmute you now.

Paul Andersen: Sorry, Mercia. I was on the wrong one. Name affiliation and your comment or question.

Mercia Arnold: Mercia Arnold from The Obsidian Group, Incorporated. I want to take this time to say thank you to ARIN for the ARIN Fellowship process. I think it made this meeting a lot more useful for my purposes and my understanding. I look forward to ARIN 48.

Also, I want to thank everybody for indulging me in my questions, since I am new to ARIN. I apologize if they seemed to waste people's time. But I am enthusiastic about the work that you all are doing. And I look forward to more communications with you at a more intellectual level in the future.

So thank you, everybody. And thank you for the fellowship.

Paul Andersen: Thank you, Mercia, for the kind words. And thank you for the comment. I would respond by saying please don't consider that an issue. We understand there's a steep learning curve. And I think I've always been quite pleased with this community is quite open to newcomers. And we're always happy to take the time, staff are always happy to take the time. A lot of our leaders are happy to take the time.

We're glad that the fellowship group worked -- sorry, the program worked here. Again, new to a virtual one. And we look forward to seeing it also. Thank you very much for your comment.

I don't see anyone else. I will say, yes, thanks to Erin, who noted there was a much more rich content on this. I just say that by, please, I encourage any of you to get in touch with us to let us know what you thought of the more streamlined format. My thanks to the staff that put together that suggestion. We tried some new things. Sounds like many of them worked out.

But I think it appears we cannot coax any more to come. If we can go to our closing slides, I'll close out here.

First of all, thank you very much for everyone who attended ARIN 47. And as always please take the opportunity to give a survey. That feedback is very important. Every feedback is read by staff. Summaries come up to senior management, the Board in some cases depending on that.

It's very important in how we structure these meetings, especially the times. So the survey link is there. And I'm fairly certain you'll be also getting a reminder in an email box because you can't click on (indiscernible).

Next slide, please. Once again, thanks to our Bronze Sponsor, which John will thank for me because I want to give him (indiscernible) -- that way I don't have to worry about botching the name.

But you have to unmute. That's the problem, John. (Indiscernible). We have to have -- you're still muted, John.

John Curran: Thanks to our Bronze Sponsor, Team Cymru, for sponsoring the meeting and providing us a wonderful opening speaker. Simply a great organization.

Paul Andersen: Thank you for that. Next slide, please.

So ARIN 48 is going to, as you saw, be a bit of a hybrid meeting. Registration is sooner than you think. We do want to get an understanding, especially if you are going to be joining us in person. I can assure you that staff are working with NANOG, who is also co-hosting a meeting to ensure that safety protocols are followed.

So, there's obviously potentially going to be some differences than we're used to in here. But they want to make sure we can plan numbers because there will probably have to be some differences. And, of course, like everything with COVID that could change drastically between now and then. Please be on the lookout for that and also join the fellowship. Thank you.

Next slide. Next slide. Was that my last slide. That was my last slide.

John Curran: That's it.

Paul Andersen: With that, I thought there was one more, for some reason. I apologize. With that I like to thank all the staff, all the AC, my fellow Board colleagues, ASO AC and the entire community for taking your time over the last three days. And with that we look forward to seeing you, some of you

hopefully either virtually or in Minneapolis. This ends  
ARIN 47. See you in ARIN 48.