
ICANN82 | CF – Universal Acceptance (UA) Progress and the Strategy Forward for Digital Inclusion
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SEDA AKBULUT

Hello and welcome to Universal Acceptance Progress and Strategy Forward for Digital Inclusion. My name is Seda, and I am a participation manager for this session. Please note that this session is being recorded and is governed by the ICANN Expected Standards of Behavior and ICANN Community Anti-Harassment Policy.

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share brief overview of the session. Thank you. Over to you, Sarmad.

SARMAD HUSSAIN

Thank you, Seda, and welcome everyone to the session on Universal Acceptance Progress and Strategy Forward for Digital Inclusion. In this session, we will go through a series of presentations. We will start by welcoming Maarten Botterman, who is our Board member and also chair of the Board IDN UA Working Group, to share the board's perspective on UA and IDNs as part of ICANN's work, and also overview and appreciate community's input and work in these areas.

We also have Theresa Swinehart, who will be talking on behalf of ICANN org, introducing ICANN org's work in the area and ICANN org's focus in the area. Before we go to the Universal Acceptance Steering Group, we have the chair of your Universal Steering Group, Anil Kumar, and vice chairs and working group leads, who will be sharing the excellent work UASG has been doing over the past 10 years.

And following that, we will very briefly share the work ICANN is planning for next two to three years on UA and IDNs, based on the internal strategy ICANN org has developed to work in this area. And at the end, we have Sean here with us from Meta, who will be talking about the ongoing collaborative work ICANN org is doing with Meta on trying to address some of the UA challenges in

applications which are supported by Meta, and Sean will share the progress on that front.

We will take questions and answers in the middle as well, but also, we'll have some time towards the end of the session for questions and answers. So, with that, let me hand the floor to Maarten. Maarten, please.

MAARTEN BOTTERMAN

Thank you so much. Thank you, Anil, and all for being here. And thank you for those in the room for your demonstration of interest for this very important topic. Universal acceptance is really key if we want to have a digital inclusion around the world, and this is what ICANN stands for.

So, the UASG has been very instrumental in that for the last 10 years. And if you look back at where we came from, from initial awareness of an internet that was entirely Anglo, I think big strides have been made also with thanks to all the community efforts over time. UASG leadership, the working groups, the local initiatives, and ambassadors of UASG have been sharing these updates on progress regularly with the community over the years. And awareness has raised significantly. I think by now we can say we really are at the new stage, the new dawn in IDN use in universal awareness.

And one of the things that really helped us to get there is both the awareness work as well as the technical work to make things work better. Now the focus changes, I think, from awareness slowly to

technical implementation. We're at that time, and we look forward to continue to support that significantly. For the awareness part, the UA Day that is starting later this month has been very instrumental and very important, effectively raising awareness with thousands of people in different parts of the world, facilitated again by UASG and also community groups. ALAC chapters have been very instrumental there too in setting up local events.

The other thing that changed is 10 years ago, UASG was where those in the ICANN community who had an interest came together. Nowadays this interest is much broader, and this is also reflected by the fact that ALAC has a working group in UA, the same true for the GAC and for the ccNSO. So really, truly an honor to be here with my fellow colleagues on the Board, Amitabh, Alan in the room and others, but also full Board interest in this topic, and we look forward to the next steps here. The progress towards the UA ready work world in the past decade is truly impressive, and I commend and thank the many volunteers who have contributed to this effort.

SARMAD HUSSAIN

Thank you, Maarten, and we'll then go to Theresa next.

THERESA SWINEHART

Sounds good. Thank you, and thanks everybody for being here in the room and online. This is, as you know, an important area for many, many reasons. The ability to have one's own experience online completely, including the utilization to the right or the left of the dot and have that resolve is incredibly important, whether

one's using it for linguistical purposes or for one's presence online. So, thanks for this.

As you know, Universal Acceptance is and has been a priority for the organization. It's included in ICANN's strategic plan for the FY21-25, but it's also part of the draft strategic plan for FY26-30, of course, and as Maarten noted, some of the focus areas we would have. Given this focus as an organization, we've taken multiple additional measures to make progress on Universal Acceptance . And led by an amazing team under Sarmad and Elisa and really taking on a lot of cross-functional work.

In this regard, we've set up a cross-functional team to work on UA awareness and adoption within the organization to ensure that we have synergies across the policy development space, across the technical space, and across what we're doing under these different initiatives and partnerships. That's combined with an internal steering group and relevant executives who are involved in that part of the work. So, from an organizational standpoint, making sure that we are building synergies and efficiencies across the organization.

We've strengthened the IDN and UA program team from two full-time several years ago to five today. And also, of course, looking at how we can strengthen and create awareness within the organization to utilize skills that can contribute to this work. We're working directly to take up the UA-related work with open-source maintainers and big tech organizations. I look forward to hearing from you on that. And conducting capacity building by integrating

UA into the university curriculums and training programs for technology professionals. So, that's a core area as well as part of our engagement.

Within the organization, we continue to focus on making our own internal systems UA-ready, leading by example in that. And as a result of our efforts, only 9% of the org's applications remain on our UA adoption roadmap. That is to get those ready. Most of the remaining applications are vendor-supported products. We also have cross-functional areas of work, including with our comms team, our policy, our engagement, our government engagement team, engineering and IT, OCTO, of course, and our legal team. So, this is really an org-wide effort.

But in addition, we're also looking at further collaborations with organizations that are working in the space and can help influence and create awareness for governments and for industry, such as UNESCO reaching out to the public sector and the broader Internet community around that. And you'll see different partnership MOUs that have evolved over the years. We're also working with registries, registrars, registry service providers to help in the UA effort and to foster the digital inclusion and UA support for the RSP evaluation program for the next round.

So, we look forward to continuing to work with everybody, and any suggestions or other opportunities that you see where one can create awareness, please do. This is important. We can facilitate and engage in discussions, but it is a global effort that will need involvement by everybody. So, congratulations on all the work to

date, and we look forward to more. And with that, Sarmad, I'll turn it over to you.

SARMAD HUSSAIN

Thank you, Theresa, and thank you, Maarten. So, one of the main reasons I think we've gathered here is to appreciate and celebrate the work which has been done by the community, specifically Universal Acceptance Steering Group. This meeting marks 10 years of work by the community in this area.

The Universal Acceptance Steering Group was set up in February of 2015, and so this session is more focused on we've invited the UASG leadership team to take us through the summary of 10 years of their achievement, and I will hand it over to Anil, who's the chair of Universal Acceptance Steering Group, to get us started. And then we will go through the work of the various working groups of UASG, seeing what has been achieved so far, what, of course, still needs to be done.

In this context, of course, there's a larger community. We have the technical and other working groups of UASG, but we also, as was indicated by Maarten, also have local initiative and ambassadors who actually contribute to this work. We've actually showcased the work by local initiatives in the UA community update session during the prep week, and though we won't cover that here, we would encourage you to go and listen to the recording of that session to learn more about how the local initiatives are

contributing. And then over to Anil now to take us through the work of UASG and its working groups. Thank you.

ANIL KUMAR

Thank you, Sarmad. And let me start by thanking Maarten and other board directors in the room, on the stage, Theresa, Elisa, and Sarmad, and Seda, who, from the ICANN Board as well as from ICANN organization, are helping the UA community and UASG specifically, tremendously for the last 10 years. 1

Zero years is a big day and big time through which we have gone through this, and we have made sufficient progress when we talk about the progress on UA. Let me just take a brief time on this. Out of around 1,500+ TLDs which are delegated, around 150+ are from IDN. Similarly, the second-level domains, IDN second-level domains have crossed already 4.4 million second-level domains. The EAI, that is the emails which we measure on continuous basis, whether they are UA-ready or not, more than 28% of the emails are now UA-ready. Similarly, the websites are in the similar way. And as Maarten has said, it is very encouraging that other communities like ccNSO, ALAC, and GAC are taking steps to encourage the adoption of UA at various levels.

So let me go through the various timelines through which we have gone through this. As Sarmad has said, we were born in 2015, and then we decided to go to define the charter, understanding the UA, giving various software and software updates through the process to the community to ensure that the system are UA-ready, and

whoever want their system to be UA-ready, should be able to get those software versions up.

So, in March 2016, we published the present charter of UASG, and then through various papers which UASG has published. UASG has published around 51 papers till date, which are available on uasg.tech website, and I'll take you to various papers through with the help of my friends and colleagues here in UASG. These 51 papers is the efforts of each and every community member who are present here in person, online, and who are also not present here. So, we must thank all of them in ensuring that we are on the track and we are able to give.

Here I just want to give one more important thing. The UA definition is that all domain names through the browser and all email addresses which we enter and send to the system should be acceptable by every software, all applications, and hardware to ensure that whatever the person who is originating the request should be able to communicate the same effectively to the person who is going to receive it.

So UASG in the last 10 years is able to establish this aspect in the mind of those who concern. At the same time, we are also able to establish that yes, there are tools available in the system through ICANN, through UASG, so that you can make your system UA-ready. So, there is a possibility, a positive vibe has gone in the community that yes, there is a UA problem, but at the same time, there are solutions which are available to all of us.

One more important aspect which I want to touch before going to the next slide is that in 2023, we started an innovative idea and innovative process of celebrating Universal Acceptance Day globally. Now we already completed two celebrations, first version at New Delhi, second version at Belgrade, and third version is expected to be celebrated on 8th May at Hanoi this year.

This UA Day celebration is not only bringing the awareness which is required for the entire internet community, but now the UA Day is helping people to get trained, to conduct the workshop, to see with their own eyes how the UA system can go into their system. And latest, we have started what Theresa has said, that UA academic curricula, which is aimed that the students which are coming out of colleges and literally from the schools should understand what is UA, where the solutions are there, why community need it, and how to approach on this.

Next slide, please. Now, UASG is working with working groups, so there are five working groups which are there, which have a charter. UA Coordination Working Group, which is the group of elected leadership and also the chair and vice-chairs of the working groups. Then we have Tech Working Group, we have Communication Working Group, we have Measurement Working Group, and we have AI Working Group. So, these five working groups are there.

In addition to these five working groups, what Sarmad has also informed that we have soldiers which are available on the field, which takes the message of UA to people at large, internet users.

They are local initiatives, so we have five local initiatives which are working as on date, and the second is the UA ambassadors. So, we have individuals who have skilled talent as well as motivation to go to the field and give the message of UA, including all the technical stuff. So, we have 18 UA ambassadors who are working as on date from 10 different countries.

Next slide, please. Now, if we see that the UASG Coordination working group which has done in the last 10 years, as I said about the UA awareness, I have already discussed about the UA day. We are issuing a UA readiness report in collaboration with ICANN org on yearly basis. All the UA readiness reports are very exhaustive in nature, and I request you to please go to UA tech and download UA readiness report and use for them.

ICANN has published a business case study in 2017 for the business community to understand that why they should adopt UA. So, in 2017, there was a business case of \$9.8 billion. This study is again restarted, and we hope that the latest version of study should come out very soon. Then we have published various reports which I informed initially, and let me just take you to the various reports which are there.

UASG002 was to webmaster engagement letter informing the webmasters where their websites are not UA-ready and what they are supposed to do. Then UASG003 was why UA and how to take action to make your system UA-ready. UASG004 was test cases for UA readiness evaluation. Five was definition of the key terms for the next step to become the UA ready.

Nine was because UASG work was increasing, UA work was increasing, ICANN org was supporting, so we have to define the norms to engage external parties to help us to develop the system. So, in 009, we published the quick guide to tender contractual documentation. And 015 was a blueprint for chief internet officers. This is the internet industry edition to use in addressing the UA issues, specific tools which are required to be used. So, this is a summary of what UASG coordination team has done. Now, may I request the Measurement Working Group chair, Dr. Nabil, to take the progress of last 10 years in Measurement.

NABIL BENAMAR

Thank you, Anil. Thank you, everyone, for coming to this session. So, this is Nabil Benamar for the record. I'm the Measurement Working Group chair and also the vice chair of the UASG. So, today, I'd like to present what we have done so far in the Measurement Working Group.

We have published many documents. We are still now working on the popular e-commerce platforms, assessing them, checking if they are UA-ready. So, the documents related to this study will be published soon. We have also published the work on popular identity platforms like Okta, Auth0, OpenIAM, and this has been published in the UASG045 documents. We are also assessing popular web hosting tools like cPanel, Plesk, and ISP Config. So here, we are in different works. We are trying to check or to rank the most or the main application in a given field, in a given software

family, to make the study meaningful for the purpose of our work. And this work has been published in the UASG042 documents.

Continuing on this same topic, we have published it because we have worked on social network applications, assessing them regarding the UA readiness like Facebook, Twitter, Instagram, so major social network applications. So, the results can be found in the UASG035 documents. Content management system like WordPress, UA remediation of websites globally, this is something that we are doing with ICANN on a daily basis to see the top websites and their UA readiness.

The UA readiness framework has been also published in UASG026 documents, and also for the browsers, major browsers have been tested, have been checked, assessed to see their UA readiness level. The results have been published in UASG016.

And one of the main latest works that we have worked on is to prepare the next engineers that will deploy Universal Acceptance paradigm and principles. So, with this, we need to prepare the students at the university by developing a UA curriculum that is presenting multiple micro models. So, it's around 12 micro models with content related to UA for different courses at the university for the computer science and computer electrical engineering majors, different courses with additional courses and modules to reflect and to address the internationalization problem, a concept, and we can apply it, how we can improve and update our major programming languages to be ready for UA, not only for programming, but also for other stuff like operating systems,

networks, network security, and other paradigms like data structure, data analysis, and so on.

So, we are proud of this work about preparing this curricula. The next step is to do some train-the-trainer workshops to train faculty members that will teach this content to their students. And we are looking forward for their feedback. And you can see on the UASG website that we have now also some UA Day events related to curriculum, to academic curriculum. And we are really looking forward to see the feedback of these faculty members and interested parties, and what went well in applying and implementing this curriculum, and what's still to be improved. So, with this, thank you, and looking forward for your comments.

ANIL KUMAR

Thank you, Dr. Nabil. And I just want to inform the audience that they can raise questions any time, as Sarmad has said. But now I am now inviting Mr. Satish Babu, who is the chair of Tech Working Group, to take all of us on the progress of the last 10 years from the Tech Working Group. Over to you, Satish.

SATISH BABU

Thanks very much, Anil. I'm Satish Babu, the chair of the Tech Working Group. So, first of all, what is the scope of the Technology Working Group? As you can imagine from the name, it is to ensure that wherever there's a gap, we try to kind of plug that gap and make the software, whatever software we're talking about, UA compliant.

So, before I get into the list of things here, which is not all that important, some principles have to be understood when we look at a task like fixing the gaps. The first is that we have made a lot of progress in the last 10 years, but this progress is not just because of our work. It is a combined work of a number of actors that include big technology groups, Meta and Apple and so on, open-source communities, which have been a very important source of work for us, many different consortiums and working groups like the Unicode Consortium, W3C, IETF, and so on. If you want a full list of these institutions, you can take a look at the UASG040 document.

So, the important point is that this is both a strength and a weakness. It's a strength because it allows us to leverage a big community of programmers outside ICANN, but it's a weakness because we are not always able to persuade them to adopt our priorities. They have their own priorities, and we have our priorities. Sometimes these do not match, so that mismatch causes problems for us. But having said that, it is still very useful to work with these communities.

Secondly, while we have made significant progress, there are still some pockets of resistance where progress is not easy because these companies have their own rationale and logic, which is actually irrefutable, except that we have a different priority. So, we would like to push them into where we would like them to head. So, we continue to engage with these companies, and we hope that we will eventually be able to influence them to adopt whatever our priorities are.

Third, some of our work is one time, so we get a task done, whereas others are iterative. We revisit year after year some of this work that we do, because the technology is always emerging. There are always new things coming out, and we need to keep looking at them.

And finally, there is a significant amount of work in progress which you won't find in this list that you have in front of you. For example, we are doing a survey to identify the major impediments in the adoption of UA. That is about half done. We have initially consulted the community members. Subsequently, we hope to be able to reach out to outside agencies or a self-certification guide for website administrators to certify their own progress in compliance.

Incidentally, one of the first community feedback was that, why is ICANN not UA-ready? Actually, that situation has changed. ICANN is now quite UA-ready, if not fully. So, that's good news for us, because ICANN is an exemplar as far as the world is concerned.

So, what have we done in the last 10 years? This list that you see here is not necessarily chronological. Some of it has been done earlier and iteratively, others at one time. The first set is that one of the feedback that we got from the community is that you tell us how to do it. We are programmers. We don't have time to get into R&D. So, you show us how to kind of create UA-ready software. So, we went about developing code samples, minimum working code samples, which have been published. So, we have various libraries, React, Angular, Node, Java, Python, JavaScript, etc. Some of it is ongoing. Some of it has been published. And we think it's a very

useful thing because it allows people to directly see what a working sample looks like.

Evaluation of standards and best practices. The 040 is a document that provides us with a big list of institutions that we should be working with. For instance, I'll just name a few. So, we have W3C, the WOTWG, which is one of the standard organizations. IETF, IRTF, Unicode. Now Unicode requires special mention because it's at the base of the entire work that we're doing. So, it's very important to kind of work with them. ITU, they're an individual software like Python Software Foundation, etc. So, there are a number of agencies that we've been working with and we will continue to engage with them. That is 040.

UASG033 is about open-source code pilot. 024 is about command line networking tools. Now, especially on the Unix, Linux platforms, we have a number of command line tools that we use for simple things like resolvers. Now when we have IDNs especially, we need to have access to these tools which are capable of handling these kinds of things. So, there are a number of gaps that have been identified, but that has been done. The identification of gaps has been done.

Then we have troublesome libraries that are the mobile phone libraries. These mobile phones are such complex devices. Compared to a desktop machine, they have much more complexity built into them. And so, making a change, the developer community is not very happy to make any change because things are working, they would like to leave it as it is. So, we have actually

examined Android and iOS to see what extent they support UA. And there are some gaps. And these have been published. And we are trying to work with them to figure this out.

This last bullet, which consists of three items, sub-bullets, this is iterative. And we continue to go over and over again year after year because there are always some new libraries emerging and so on. This guide to linkification has been already mentioned. This is again a troublesome thing because when we use something like WhatsApp, for example, we see a link, we tend to click on it. And we expect that it will open up that link. But sometimes the IDNs don't kind of become clickable links because WhatsApp does not know that this is a link, this is a URL. So, that also requires handling. So, these are some of the things that we have done.

And finally, some training materials have been developed for programming languages. And people are actually, even in the UA Day, people are using these resources, training material that we have developed for carrying out these training programs. We are also getting feedback on this. So, we will continue to maintain them as a kind of living code base. So, that's it from me. Thanks very much for this opportunity. And I'll be happy to take any questions at the end of this. Back to you, Anil.

ANIL KUMAR

Thank you. Thank you very much, Satish. Wonderful job undertaken by Tech Working Group in the last 10 years. Congratulations to all who are involved in this process. And all the work which is done by all working groups, again, I am reminding is

available on uasg.tech for download for use for anybody across the globe.

And now, the next speaker is Nitin Walia. He's the vice chair of AI Working Group. And he's also vice chair of UASG leadership. Nitin will take us to all the work which is undertaken by email. And we said that email is an integral and very important part in the UA strategy. Over to you, Nitin.

NITIN WALIA

Thank you, Anil. So, Nitin Walia for the record. Basically, before I start up, you start with the EA, I think there are several newcomers out here in the room for whom UASG must be like a buzzword, who might not be aware why this working group was being formed, and what were the aspects which were being undertaken by this group. So, basically, UASG was not only tasked for the IDN domain names. The challenge was and the primary objective was that any kind of a domain name, be it IDN or ASCII, should work seamlessly in all kinds of mobile applications and softwares.

So, initially, you all know that the when the domain names were being made available, you were only having three letter domain names, which were .com, .net, or the ccTLDs, which were two letters. So, the applications were being designed accordingly that the designers or developers have thought that the domain names will never be more than three character long, or it will not be in any other language.

So, when the IDN domain names and the long name domain names like .restaurant, .network, they all were being made available by ICANN. The problem arise that these domain names were not been working in these browsers and applications. So, to resolve that challenge, ICANN formed a small working group, which was being named as UASG. So, we are the team of UASG who has been working since 2015 regarding this thing.

Now coming back to EAI. As far as the EAI is concerned for any domain name, email is one of the most essential service without which the effectiveness of domain names don't come in play. So, if you will see the slide, I'll go from bottom to up so that you will be able to gauge the journey which we have done in last 10 years. So, when this group was being formed, the leadership of UASG decided to create a small task force, which was being named as email address internalization working group. And the volunteers from the UASG decided to participate into this particular working group.

The first task we undertook was to do a technical overview. So, for which the UASG012 report was being formed to have a complete overview of the email applications which are available, and their level of readiness, is that is there any application which is supporting right now for these new domain names, including IDN domain names. Post that, a technical perspective was being done.

And then another report was being published, which was being UASG0118B, in which we cover up the softwares in the email space. Because in email, you only don't have the email software, you also have other tools and applications. So, like anti-spam, which plays

a critical role which sits as an MX gateway, and handles all the incoming and outgoing email before delivering it to your mail server. So, we did a small study on all these tools and applications, and published a report. And then finally we come up with the EAI readiness in TLDs, that which all TLDs are right and which were operational. What is the readiness in terms of EAI?

Then this group undertake a task to evaluate all major softwares and services, for which we come up with 021B and 021A. So, these were two reports which were being done back-to-back after one year, to gauge the momentum on adoption in terms of the email applications, actually. So, considering those, the naming of email addresses are accurate, then the 028 was being designed.

Formally, then when the complete evaluation of these software and services are being done, we found that we come up with two multiple reports, which were UASG30A and UASG30, in which we cover up two different angles. One was the email softwares. So, email softwares like Outlook, Yandex, Roundcube, AppleMail, Exchange, Postfix, Courier, Gmail, Exgen. So, all the emails applications which were being available, we tried to evaluate their readiness level.

Initially, we named them as Phase 1 and Phase 2 readiness, which means if you are able to send and receive the email from an email application, we always say it as a Phase 1 readiness. And if you are able to host an email address or provide an email address onto those email applications, then we say Phase 2 readiness. So accordingly, these reports were being published, and then we also

evaluate the other anti-spam and the clients which were being used, like Spamjadoo, Sendmail, and they have got Spamassassin and Thunderbird. So, regarding that, we come up with an additional report, which was UASG30A.

When this task was being done, actually, then we started towards the technical education and awareness, because the task of awareness was very critical in terms of bringing people online in terms of in email space. And also, to convince the email service providers, because it was a chicken and egg story, wherein email service providers were thinking and there's no demand coming from my customer or there's no demand coming from the market. Why I should make a change into my application? Everybody knows it's a bug which needs to be resolved, but it takes time, money, and efforts to resolve this bug.

So, for them the situation was, let the demand come from the market and then I will see. But eventually with our, several service providers were in a position to get convinced to at least become their software's AI ready in phase 1, so that at least the communication from the domain names and email addresses can start by sending and receiving. The technical evaluation and awareness community has developed in terms of Q&A for the websites for which the UASG044 was being published.

Then finally, this group undertook a major task, which we have been doing for the past three years, which was regarding creating a self-certification guide. This guide was like a Bible to all the email service providers to evaluate the situation of their email softwares.

It was giving them step-by-step guidance in terms of how to check and how to remove the challenges to make their systems AI ready. We published this report a year back, and a few of the email softwares volunteered to check their email system readiness with this self-certification report.

With this self-certification report, we also changed the paraphrasing of phase 1 and phase 2, and we come up with the different terminologies in terms of silver, gold, and platinum. And within this self-certification guide, with the help of ICANN, we were also able to build three logos, which were silver ready, gold ready, and platinum ready. These logos have been published on the uasg.tech website, and people who are voluntarily using this guide and publishing their results were allowed to use these logos to put on their brochures, to put it on their websites, so that any customer or any end user who wants to check the readiness of the email software can analyze from these logos that what is the status of these email softwares.

The silver was any email software which was able to send and receive. Gold was given all meeting silver credentials, but yes, they are also able to provide and host email addresses within the application. And platinum was, along with the inspirational features, and of declaring by default that the system is fully compatible in terms of hosting any kind of a domain name onto this email platform.

Now, recently, this working group has also undertaken a task, and which is in on the way to get published, is to enable and offer a

hosted, self-hosted environment, so that anybody who wants to test their domain name, anybody who want to have a view or a flavor of what EAI is, can simply download that thing, and install into their data center, and run. It is completely built on open source, so anybody who wants to have experience on EAI can, will be able to deploy that and run and host their own domain names to this thing.

So, this is a small journey of the efforts which has been done by this group. And as Maarten has said, the initially the task was towards awareness, but eventually the objective and the goal of the group changes from awareness to adoption, and all these steps which are being recently taken in past couple of years, were to motivate towards adoption. That's for my side. Thank you.

ANIL KUMAR

Thank you, Nitin. Commandable job which EAI working group has done in the last 10 years, not only helping people to know about the A, B, C, D to Z of the email conversion into AI, but also tools to test their email system, and also for those who want to make their UA system step-by-step, how we have to proceed on this. Thank you very much. And I want to thank Abdalmonem also, who is also vice chair of EAI, and he's also chair of ccNSO UASG group in answering various questions which people are raising in the chat with respect to AI. Thank you, Abdalmonem, for this.

And now we'll come to the Communication Working Group. Communication, as we understand, is that what Technical Working group are doing, Measurement Working Group, AI Working Group,

we have to take it effectively through various communication media to the public, to the various multi-stakeholder components, who has to use them, means the targeted audience has to be there.

So, we started having a website which is a uasg.tech website, where all information, whatever we have done, daily update of the website, interaction with the people is available. I request all audience to kindly use them on regular basis. Communication Working Group has started a social media campaign, especially targeting to the tech community to ensure that whatever developments we are able to get from the Tech Working Group, Measurement Working Group and AI Working Group should be able to reach them.

Then we have local initiatives which we discussed. Those local initiatives are doing wonderful job. They are doing jobs which actually get converted into case studies. Those case studies, especially from China, Thailand and CIS-EE are available on the usg.tech and we can work on it. As Technical Working Group, AI Working Group and Measurement Working Group has given the detail of the work which they have done, those works are also getting converted into videos. Videos are available in various languages. It is well understood by the audience to understand the videos and use various work which UASG is doing. Well, we can see that we have videos of UA technology and AI explainer videos also.

A very innovative work which Communication Working Group has done is to issue a newsletter which is issued on quarterly basis, which giving the work of UASG per se across all communities, but

also informing the audience about the UA-related work which are being undertaken in other forums. For example, ITU, IGF and other places wherever we come to know that UA-related work that is being captured and then put in the UASG newsletter.

If we come to the local initiative and ambassador, as Sarmad said, that details were discussed during the pre-week of ICANN, but just for the reputation, I just want to bring to the notice of all of you that we have five local initiatives which are China, Commonwealth of Independent States, that is CIS, and Eastern Europe. We have the third one from India, fourth one from Sri Lanka, and fifth one from Thailand. And I am happy to inform you that there is a new local initiative which have applied for it. We are evaluating it from the Europe, and we should have sixth local initiative.

At this stage, I want to appeal to other volunteers from various other countries to please come forward, join us through the local initiative. And for the work which local initiative does, there is a financial support, the material support, logistic support which is provided by ICANN. So please use it and become a messenger of UA to the field.

Then we have UA ambassadors. Photographs of the UA ambassadors is seen to all of you. We have 10 countries and 18 UA ambassadors from the 10 countries. I just want to take the name. We have one from Benin, two from Bolivia, two from St. Vincent and Grenadines, three from China, one from Egypt, five from India, two from Nigeria, one from South Africa, one from Turkey, and one from Zambia.

Now here for the UA ambassadors also, ICANN provide financial support on yearly basis to travel, to go to the community, talk to the community in general, undertake the trainings, undertake the workshops, do the awareness work, and these UA ambassadors are doing a wonderful job. One of the UA ambassadors is sitting on the dais, Abdalmonem, who is doing a wonderful job in Egypt and previously also.

So, with this, we close, and I want to stop here about giving the 10-year progress on the UASG. And now I hand over to Sarmad, because ICANN has drafted, as Maarten has and Theresa has said, the next five-year strategic plan of ICANN, where a specific focus is given to Universal Acceptance. So let us listen from Sarmad about the strategic plan and the future of Universal Acceptance through ICANN and UASG. Over to you, Sarmad.

SARMAD HUSSAIN

Thank you, Anil, and thank you, UASG leadership team, for that excellent update and summary for the work done over the last ten years. Before we move on, I just want to maybe check back with Seda, whether there are any online questions, and there is a mic up here in case somebody would like to ask a question to the panelists for the discussion so far.

SEDA AKBULUT

Thank you, Sarmad. There are a couple of questions which were mostly answered on the chat, but one of them was from Mohamed Idris Salim. The question was, standardizing few technologies to

be as UA is technically not possible, to the best of my understanding. For example, few symbols like dollar sign or N sign of a language has a predefined meaning, and it cannot be changed to make it as UA-compliant. Thanks to Pitinan, who responded to this inquiry with the IDNA 2008 standards compliance.

SARMAD HUSSAIN

Thank you, Seda. Maybe there was a response from Abdalmonem. Abdalmonem, you want to add to that?

ABDALMONEL GALILA

Yes, thank you, Dr. Sarmad. Actually, I have two responses for Mohamed's question. The first one, as said by Pitinan, it is against the standard of IDNA 2008 to use symbols for domain name and, of course, email addresses depends on domain name, so domain names and email addresses are not in the case here.

The other side that Mohamed is correct enough at this, that there is many times that we have, for example, HTTP/ Arabic domain name. At this time, there will be a confusion here. Should I rewrote this? How could English and Arabic mix it for the same domain name? It is one of the issues. Actually, when you write Arabic, it should be from right to left. When you copy this domain name from, even it is right to left, if you copy it and paste it inside Word or Notepad file, you will find that it's mixed, Arabic and English. How could the application who processes this domain name or the full address that have Arabic and English, English for protocol and

Arabic for the domain name, read this domain name from right or from left? Thank you, Dr. Sarmad.

SARMAD HUSSAIN

Thank you, Abdalmonem. Seda, any other questions online before we-- There is a question here in the room, but any other questions online first?

SEDA AKBULUT

Not at this time.

SARMAD HUSSAIN

Okay. So, please introduce yourself and please ask your question. Thank you. Here in the room.

ANANDA GAUTAM

Thank you, everyone. My name is Ananda Gautam. I'm from Nepal. So, this was really interesting one. It's been a while I've been following this Universal Acceptance in ICANN and being Nepal using Devanagari Lippi, which is very common to the transcript we use in India, but we have not seen much development in local initiative and ambassadors. I think a couple of years ago, I applied for it and I'm talking with people how we can start this in Nepal, but it has not been into progressed a lot. So, is there any prerequisite to start a local initiative or what are the steps to be followed? How can we work on this one? This is my question. Thank you.

SARMAD HUSSAIN

Thank you. Okay. So, I can provide a quick response to that. So, there is a local initiative document, which is available online at uasg.tech. That would be a starting point, which lists what a local initiative should do and what the scope of work should be. So, that is a starting point. Once you have a community interest in starting a local initiative, so it should really be a community effort. You need to put a proposal together and share that with the ICANN org, and we then take it to UASG for further consideration. So, I can, after the session, share more details with you offline, but at a high level, that would be the process. Thank you.

ANIL KUMAR

In addition to what Sarmad has informed you about the detailed requirement of the LI, which you can go on uasg.tech as well as on ICANN website, as Sarmad has said that there should be sufficient number of volunteers available with you with a community support, and you should submit a paper on the community support in undertaking this. The embers of this local initiative should have expertise to work on internet and internet related technology, because the local initiative is supposed to go to the public, go to organizations, go to governments, go to technical community to explain about the UA and the various works which are available in UA.

The last thing which I want to say that there is a support, financial support, which is given from ICANN, but at the same time that support may not be sufficient. So, there should be sufficient financial muscles available with the local initiative to ensure that

there should not be any stoppage of Universal Acceptance objective, which you people have set up in front of you. I hope we answered your question. Thank you.

ANANDA GAUTAM

Thank you. I think there are many follow-up questions, but we can take it offline.

SARMAD HUSSAIN

Thank you. So, in the interest of time, let's keep going further and we'll come back to more questions towards the later part of this session. So, then moving on, I'm going to take a few minutes to just provide an overview of how ICANN itself is focusing on this work, and then we will have Sean talk about some of the great efforts Meta team is doing towards addressing UA.

So, basically, Universal Acceptance of all domain names and email addresses is really needed to make sure that everybody can effectively use the internet. They can access resources online and communicate online. And it does require effort from a host of stakeholders and the broader internet community, and including obviously the technical community, governments, civil society, everyone.

It has been a focus of ICANN through its strategic plan and continues to be a focus in the draft ICANN strategic plan for FY26-30, which calls to promote the advancement of IDNs and UA, proactively collaborate with all relevant external parties to promote UA, and we have cultivated consumer choice,

competition, inclusivity, and innovation. You can look at details of this in the draft, which is obviously published online.

To translate that into more focused work within ICANN, ICANN organizations worked internally and drafted its own strategy for IDNs and UA for the next three years, FY25-27. And idea eventually is that this work should go a layer deeper to see what ICANN org needs to do in collaboration with all the other stakeholders to address or make progress on IDNs and UA towards its broader strategic plan. And this obviously has been part of the previous ICANN CEO's goals and is a critical piece for the New gTLD Program Next Round as well.

To just jump into slightly more detail, the strategy which ICANN org has developed for IDNs and UA has nine specific objectives with its own stakeholders and outcomes and activities designed for each of those objectives. The objectives include strengthening the messaging around IDNs and UA, engaging with big technology organizations and open-source communities to address IDN and UA support in these technology platforms, conducting outreach to tech developers and system administrators in not just raising awareness but also potentially raising capacity with this technical community.

Lead by example by making ICANN org's own systems UA ready. Onboarding the broader DNS community to support IDNs and UA which includes registries and registrars and registry service providers and also others including for example hosting providers

and other internet service providers which provide support for the end-users.

We also want to strengthen and broaden ICANN community collaboration to promote adoption of IDNs and UA. Bring IDNs and UA into the internet governance policy discussions for international organizations and governments for supporting digital inclusion. Identify and pursue additional opportunities for example to develop policy or support policy development and implementation in these areas. And last but certainly not least we obviously need to have a very clear set of indicators to measure where we are and how we progress on this over time.

Just to give you a couple of examples of some of the work we've been doing in these areas. For number two, for example, we have shown here we've actually been working with Meta trying to raise some of the UA challenges which are there with the applications but not just with Meta but with other many other organizations which currently deploy applications which are used by a large majority of users across the globe.

We've also been working with open-source communities, especially those which are in some ways critical to enable IDN and UA support in a broad variety of software. Just to give you an example, WordPress is a tool which is used for hosting almost 40% of global websites so it has a very significant user base.

One of the challenges with WordPress is that it has some internal tools and libraries which are not U- ready which makes WordPress hard to support IDNs and UA through WordPress. It's a PHP based

system and one of the libraries for example it uses at the back is a PHP mailer and one of the things we've been doing is working with maintainers of the PHP mailer to make PHP mailer UA-ready so that eventually that integration into back end of your WordPress makes eventually helps make WordPress UA-ready.

There are many other examples. We regularly provide update of the work we are doing in this area to the community. There was an update provided in this meeting during the UA community update session during the prep week and we would encourage you to go and listen to the recordings to get more details.

We also as an example we've recently have updated and are in collaboration with UNESCO to work together to raise awareness of IDNs and UA in the public sector, and that's an active ongoing collaboration where we work together with our stakeholders.

On the DNS industry side, for example, some couple of years back we published a UA roadmap for registry and registrar systems. We are currently now actively working on another study which looks at the UA roadmap for hosting providers, for example. So, there's many active threads which ICANN org is taking up in addition to of course supporting the excellent work which is being done by the community including Universal Acceptance steering group and also other community initiatives as Maarten also indicated by GAC and ccNSO and ALAC. So, this work is ongoing and we'll continue to provide you update on many of the things we undertake in this.

Another, before we go to Sean, one last thing which I wanted to highlight is also what Nabil said that we've actually developed a UA

curriculum which is focused on integrating training into university curriculum so that this work and this training work can actually become sustainable. And new developers or technical folks who are coming young professionals, they already are aware of these aspects and know how to deal with it.

And we are now rolling this out with universities. We have already done a couple of faculty trainings and now directly starting to work with a few universities trying to integrate this curriculum into their programs to learn and obviously make this even better and then once we've actually had some experience in implementing it, we would then want to see what the next steps are so that we can roll it out more broadly.

With that, so that's sort of an overview of how ICANN is more directly engaged. We also have evolved our internal structures as Theresa pointed out. We now actually have a cross-functional team within ICANN which looks at it and also a new steering committee within ICANN which oversees this work. Eventually we report into the board IDN UA working group which oversees this work by ICANN.

With that let me now pass it on to Sean Bedford, he's a principal business engineer at Meta, to share some of the great work they've been doing to make Meta's applications UA-ready. So over to you Sean.

SEAN BEDFORD

Thank you, Sarmad. So, I was asked today to come and speak a little bit about some of the work that Meta has been doing on Universal Acceptance. So, that includes top-level domains CC and G and also internationalized domain names. I'm going to talk through why there's Meta care. I'm going to talk through a little bit about the progress we've made to date. I'll talk a little bit about some of the challenges we still have, and I'll talk about some of the plans that we have along the way. And thank you ICANN drive with the clicker. Cool.

So, firstly why does Meta care about any of this? So, this is Meta's mission statement. We are here to build the future of human connection and the technology that makes it possible. On the platform right now across our family of apps and websites, that's Facebook, Instagram, WhatsApp, Oculus, Threads and I've probably forgotten something. There's quite a few. We support 3.3 billion people. That is a significant chunk of the planet. Obviously not all of those people speak English as their primary language.

So, if we're not showing up for the planet, the half or so of the planet that we cover today and the other half that we hope to at some point in the future cover, we need to meet them where they are. And that means meeting them where they are in terms of language, in terms of accessibility and in terms of their day-to-day lives. So, that's why we care about this.

Now I think when we started this journey with ICANN, we were doing a really bad job. I would still say we're not doing a great job. I think we probably started off as a C- and now maybe we're a C+.

But we're not doing great and there are a number of reasons why that is the case today. So, the first challenge we have is methods applications are incredibly complex. There are a lot of moving parts. We've alluded to this earlier. We're building on top of a lot of different things, including mobile operating systems, web technologies, mobile technologies, the internet as it stands today, the internet, where it has come from, and there are lots of different pieces of this moving.

Beyond that, we're also organizationally complex. So, if you look at this screenshot here of the Facebook app, this is the Facebook Android app, there are many product teams that own that view. There are, by my count, I think about 34 product teams that own that one view. So, that's one product team for the search bar, one product team for the reels, one product team for the people you may know section, one product team for posting comments and statuses. There's 34 product teams, 34 product managers, 34 engineering managers. Typically, a software engineering team has 10+ people in it, so we're talking at least 340 people for that view.

And that's just the Android app. You've then got the iOS app and the websites and everything else as well, and the infrastructure that powers all of it. So, there's a lot of people involved in any one of these views, even though it seems quite simple. So, getting alignment and getting everyone to agree that we want to make this kind of change and support Universal Acceptance consistently isn't always straightforward.

Beyond that, we also have a user experience desire for our platform. And because of the nature of social media, it's very easy for someone to mistype something. So, if you take my status update here, that is great, full stop, no space, it will be good to see you next week. If we linkify everything without thinking about it, what we'll do in that situation is linkify great.it. IT is obviously the ccTLD for Italy. We don't want to disadvantage Italy or Italians, but there is a downside to linkifying everything. So, balancing that user experience and also thinking about security, there are a lot of confusingly similar characters in various character sets, which you could mistake for another character.

So, one example that we have on our platform, there is a phishing website out there called facebook.com, which uses a ligatured conjoined O. It looks exactly like facebook.com, but it isn't facebook.com. And if you go there and type in your details, your credentials will be stolen. So, thinking about those security concerns as well, especially when it's easy to confuse a character for a different one, is also top of mind for us. So, we're quite careful about when we will choose to linkify something or not.

Finally, because of the sheer spectrum of IANA domains, this doesn't change very often as a list. This list remains fairly static, but it will change over time. And every time that list changes, we need to go back through this process again from the very beginning of assessing, okay, does this have high scale usage in the market? Do we see people using these TLDs and therefore should we support them? If we want to support them, are there any of these other downsides? Even if we go through all of that, we then need

to go back to all of these themes and agree again that we want to go through this journey. So, keeping on top of changes in that list and having a well-defined process at scale to handle those changes is also a key challenge for us.

That being said, though, we have made some progress. So, we've been on this journey with ICANN for about a year now, maybe a little bit over one year, and we've made a few changes. So, we actually started linkifying ccTLDs across our websites about nine months ago now. Most of those country code domains are now supported with a couple of exceptions to try and balance that user experience, as I mentioned. So, that was a fairly large change for us. It took a long time to get that change to go through. And I think one really important point I want to call out here is differentiating between how much this is a technology challenge and how much this is a people challenge.

Maybe we'll do a little bit of audience interaction here. So, can you put your hand up if you think that supporting ccTLDs across all of Facebook, it took longer than a week to implement that? If you think it took longer than a week, put your hand up. Cool. So, we've got about maybe a third of the room thinks it took longer than a week. The technical change took seven minutes. The actual technical change for this is a list of ccTLDs, seven minutes to update the list and roll it out globally. The procedural change to make this happen, this whole journey end-to-end took nine months. So, that gives you a sense of the complexity of just making these decisions, getting the right people to agree and getting everyone to align.

So, the technology supports this. I think we know at this point through a lot of the work that this group has done and a lot of what the community has done, we know how to support IDNs. We know how to support ccTLDs. We know exactly what we need to do. And there are a lot of resources that help you do it. But getting everyone to agree that that's the right thing to do, or getting everyone to even be aware that that's a problem in the first place, that's a lot of our challenge today.

So, I'll talk more about that in a second because I want to talk about mobile operating systems in a bit. But first we'll talk about the next step of this journey. So, we've done this for ccTLDs. We're going through the same journey for gTLDs right now. So, we're looking through every gTLD that is currently IANA listed, and we're looking at how do we balance out that user experience and linkification of those global TLDs. Now, one thing I do want to mention here is when I say linkification, I'm not saying that we don't linkify anything today. We actually do. So, we will actually linkify gTLDs currently and all of those ccTLDs, including the ones we excluded for user experience. But we require users to enter it in a specific format.

So, we require them to include HTTP//or HTTPS as a scheme hint, or alternatively put www dot in front, in which case we will linkify those things. What I'm talking about here is aggressive linkification as we call it internally, which is if we see something that looks like a URL, should we actually make it a link? So, we're doing that investigation for gTLDs right now, and I'm hopeful that within the next few months we'll be able to get to an agreement there and

push that change live. And again, much like the ccTLD change, this will take seven minutes or thereabouts to make it happen. So, the actual technical work here is relatively lightweight. The procedural work, the operational work of getting everyone to agree, much more involved.

The final thing here, there was actually an update that Google made to Android, the underlying Android library that determines which TLDs are legitimate and valid TLDs. That list was changed recently. So about seven or eight months ago, this list was updated to include a much more comprehensive list of domains. I think Android hadn't previously updated that list for about seven years, so it was somewhat out of date. But with that update, one of the nice things that we inherit, at least for our Android applications, is we will automatically start supporting all of those links now. So, the Google change has actually had an impact on our apps for Android, but also everyone else's apps for Android as well. So, that's been a really positive thing to see.

So, what could be better? I mentioned Android. There is a mobile operating system I did not mention that we also rely on to support what or what is not a URL. We rely on these libraries built into the mobile operating systems to understand that. If those operating systems say this thing is not a URL, by default, we will not linkify it. So, we could change our behavior here. We could do what is called forking the library and build our own version of it.

That is one approach. It's not an approach that Meta prefers because it adds computational overhead to us, it adds complexity,

it adds maintenance requirements, it adds lots of things on us, and it also differentiates us from every other app on the same platform, which is not really the best of user experiences either. If a user sees a link in one app and then a link in a different app and it's linked in one place and not the other, that's also not a great user experience. So, we believe the right level for many of these changes to happen on is the platform level and not the independent application running on top of it.

That's not to try and get away from our responsibilities, it's to make sure that users get a consistent experience. So, we strongly encourage feedback from the community to the mobile operating system vendors and the web browser vendors to drive stronger levels of consistency for Universal Acceptance everywhere.

The second challenge that we're working through, and this is more of a Meta-specific problem, and I mentioned I was going to raise the covers a little bit on how Meta does this, in coding in various languages it's not always easy. A lot of the code that I'm working through, and it does sound a little bit crazy to say this, but Meta is almost a legacy company at this point in time. The code I'm working through is from 2004-2005. This was the code like I actually touched some code the other week that was written by Mark Zuckerberg. There was this old code in the company at this point, and it doesn't support modern coding standards, so I'm working through that to update all of this.

As a result of this, we currently get things really, really wrong with IDNs. We mangle IDN URLs, we punicode everything. I think one of

the things I want to mention here around awareness is people don't even know this is a problem. If I take this to various product teams around the company and talk to them about it, they go Universal Acceptance, what's that? But many of our software engineers are Chinese, they speak Mandarin fluently. If I take to them a Mandarin URL and show them what it looks like on Facebook.com, we will punicode it. Instead of being whatever the Mandarin characters are, it's going to be HTTP://XN-47-59-CMA-something-something. They suddenly go, oh, now I understand why that's important.

I think there's a big challenge here around raising awareness and raising understanding of some of these terms. ICANN is talking about UA, and it's the right mission, it's the right thing to focus on, but it doesn't translate to anything for someone who's actually trying to comprehend what the challenge really is.

So, at the moment, we have this challenge with IDNs. I'm working through resolving that. I actually shipped a code change this morning, which is going to start to roll out over the next couple of weeks that will help here. We're not done yet. That's one of many places where this problem exists on our platform, but it's going to start to look a little bit better over the coming months. With that, I will close out and hand back to Sarmad.

ANIL KUMAR

Sarmad, one question for--

SARMAD HUSSAIN

Thank you. Let's take some questions.

NABIL BENAMAR

Thank you, Facebook, for the great presentation. I have just one question about the linkification. Linkification is needed. The example that you have just mentioned, it's really good, which is a user that forget to add the space, and it will automatically linkify it there. How are you dealing with this? Is it the application that will detect if this should not be linked using some AI tools maybe or something like this? For the difference between handling IDNs and linkification, the role of the underlying mobile OS and the software, which is Meta in this case. What is your choice in Facebook to deal directly or to implement this in Facebook application or to be dependent on the OS? Thank you.

SEAN BEDFORD

Sure. For linkification, for that example, great.it, at the moment we're doing something relatively naive. We're ignoring certain TLDs. We're not going to aggressively linkify .it at the moment, for example. If you put HTTP://great.it, we'd link it. But if you don't, then we won't at the moment. And we're only doing this based on data for what we consider to be commonly seen false positives.

Now, it is a word in English. Obviously, there's not a word in other languages. There are other TLDs, which may well be words in other languages too. We're doing this based on a static data analysis. It's actually quite hard to do this using AI machine learning because of the sheer volume of links we see. So, if you wanted to do this, you'd

have to train an AI model. You'd have to ship it to everyone's device and run it client-side. We can't have a server-side interaction for something like that. There's too high latency.

So, we could build a machine learning model. We believe at the moment for this use case it's probably overkill. It involves a lot of overhead and other downsides for users, like increasing the size of their application binary, increasing compute resources on their device, which has an impact on battery life. Lots of other things happen as a consequence of that. So, for the moment, we're doing something relatively naive and we're being picky about the TLDs that we will aggressively link.

When it comes to your second question there on platform-level support, we tend to prefer to lean on the platform. The reason for that is, as I mentioned, because we're looking at this from a user-centric perspective. So, if I'm here with my iPhone, something should be a link and it should be a link in every single application across my device and not just in one. So, Meta could choose to change this. We could choose to create our own link application team and spin up a whole new team around this for iOS, for Android, and centralize how we do that, ship our own library, ship it with a Facebook app, the Instagram app, the Oculus app, WhatsApp, and do it that way, and then change our behavior from what the base platform offers us. But we believe that isn't the best of user experiences because if you compare that to WhatsApp and, I don't know, TikTok, links may behave differently and it starts to become even more confusing for users.

SARMAD HUSSAIN

Thank you. We are running out of time, so as Seda has also put in, if you have any questions which we are not able to answer, please send it to us at uaprogram@icann.org and we'll make sure that we get back to you. Before we close, may I hand it to Maarten for some closing remarks. Thank you.

MAARTEN BOTTERMAN

Thank you very much for that and thank you for shining the light on the fact that the Internet was never built to be Universal Acceptance and serve all the IDNs, and the Internet has been built over many years, many decades, with lots of software that has developed over time. We see an acceleration in software development of AI and new technologies, and this is something we need to take into account when we are trying to truly serve the world as UASG and ICANN and also Meta, I think, stand for. We want to, it's complex, and we need to persist.

For ICANN's strategic plan, it's clear. We are committed to continue to work on this and we are also very much committed to recognize that we cannot do this alone. We need to do this together with external partners like Meta and others to really progress this. So, thank you all for your attention and looking forward for your continued attention and support in this field over the years to come.

SARMAD HUSSAIN

Thank you very much, Maarten. We are on time, so thank you all for joining and listening and interacting. I'd like to thank all the panelists for their support, technical support, translation team. Thank you all very much and we'll close the session. Thank you.

[END OF TRANSCRIPTION]