HYDERABAD – Universal Acceptance Community Update
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DON HOLLANDER: So welcome everyone. My name is Don Hollander. I'm the Universal Acceptance Steering Group. We have here Edmund Chung, who is the vice-chair of the Universal Acceptance Steering Group. Mark [inaudible], who is heading the EIA working group. Lars Stephan, who is heading the community outreach group. And Howard Lee, who is keeping everybody on their toes.

So [inaudible] is the chair, and obviously delayed, so we'll just go ahead and get started.

So, for those who don't know, universal acceptance, in a nutshell, is to make sure that all domain names and email addresses can be used by all internet enabled applications, devices, and systems. And while it sounds pretty obvious that it does, since 2001, when the first of the new TLDs were launched, that hasn't always been the case. And in 2010, when the IDN ccTLDs got launched, it became even more so.

And in 2013, when the new wave of gTLDs got launched, even worse.

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So, here is the agenda for today. Ron was going to give the welcome. I'll give the current state of the universal acceptance steering group, some of the work that they're doing. Lars is going to talk about the community outreach effort. And then Lars is actually going to leave, because he's going to do some community outreach with another one of the constituency groups.

Mark will talk about EEAI, and Sigmund, who has just joined us, is going to give us an update on ICANN IT's during [inaudible] towards UA. And then we'll have a Q&A and comment sections that Edmund will take care of.

So, now, I'll change hats. So, I'm going to talk about who we are now. We did a survey earlier in this year, and I'll give some results of that. Talk about our audience communication strategy very, very briefly, if at all, actually, because I think Lars will cover that. Talk about some of the documentation we've done, the evaluations that we have underway, and a project that I'm classifying as fixing the foundation.

So, the USG was formed in February 2015 at the ICANN meeting in Singapore. It was spawned at a gathering in Washington D.C. in January of that year, and for those of you who have been following UA issues for some time, there was, there has been sporadic and start stop efforts to make it happen.

But this meeting of a group in Washington really seemed to get some traction or some gel, and so, we went to the community. We suggested the steering group get formed, the community was very supportive. We wrote to the Board, and the Board was also very supportive. And so, we now exist. We have 230 subscribers to the UA discuss list. We presented from all five ICANN regions, though I do know that both Africa and the LAC, Latin American and Caribbean, are underrepresented, and we have more than 135 organizations participating at one level or another.

So, the survey results said, here are some things. Could you give us a ranking as to how strongly you think this is important or not important? And a low number is good. So, the first couple of things, people said, EAI is important, and EAI is Email Address Internationalization. And this means that you can send an email with a IDN domain name and/or a mailbox name Unicode. So, they said, could we produce some good practice guides for EAI? A quick guide for EAI? Those were the top two, then the next two were some [inaudible] efforts, which are underway.

And then, continue monitoring the UA readiness of common websites, and then you asked us to do, create a call logging facility, so that when you identified UA problems in the wild, they could be logged somewhere, and people would at least

keep track of them, try to follow them up, and monitor whether they're resolved or not.

So that, those were the top issues from our survey, and full details of the survey have been circulated to the UA discuss list. If anybody hasn't seen that, and want to, just ask for afterwards, but a question with an email address in the Adobe Connect chat room, and we'll get those results to you.

So, we've been focusing a lot on good documentation. When we talk to CIOs and system architects, a bit over a year ago, talking to them about the idea of universal acceptance, they got it. They understood the issue, and they said, "Right, where do I go for more information?" And the answer was, we didn't really have any place to send them.

So, we've been spending most of the past 12 months or so, getting some good, decent documentation going. So, we have some use cases. So, people who want to practice or test their systems, we have registered a number of domain names, and we have some email addresses, both Unicode and ASCII email addresses in combination of ASCII, and IDN, and IDN dot ASCII, and IDN dot IDN. And Arabic dot Arabic.

So, those use cases are published in one of our documents called UASG 004. We've developed quick guides to universal acceptance, since we have a pile of them here printed in orange,

but if you want other languages, we have those on the website. There is about 10 or 11 languages, so we have French, German, Turkish, Hindi, a whole variety of languages there.

We produced detailed technical document on universal acceptance last year. This is, or earlier this year, it got published. This is UASG 007, this is a 40 page, very detailed document with an expensive glossary and takes a computer programmer or system architect from zero knowledge to quite an extensive knowledge about universal acceptance issues and EAI.

We produced a tender and contracting document, so if you want to make sure that UA is active in your organization, these are some clauses that you can put into your contracting, your tendering document, and your contracts to ensure that your suppliers provide a UA ready applications.

And that document also has similar paragraphs for DNSSEC and IPv6. And together, we call them the broccoli issues, because they are things that are good for you, that you don't necessarily want to do right away. We have FAQs that have been recently published. We have a list of all of the relevant RFCs. We've created a knowledge base, we'll start continuing to build on that.

We have a quick guide to linkification. We have a model for how to create a local initiative where you live, whether it's at a country level, regional level, state, or city, or county. Basically, it says get these sorts of people together and organize some drinks and nibbles, and talk about UA issues.

So more documentation that's coming around EAI. So we're planning a quick guide to EAI. A detailed technical document including an evaluation, a debugging section. So, detailed analysis of how to debug. Good practice guide on EAI, so we're planning next year to bring all of the EAI practitioners together in one place so they can sit down and play computer games of sending email, yeah, can I send my email to you? Oh yes. Did you get it? No. Oh, what if I tried this? How did it display?

It didn't display quite right. What happens if I reply? So, we're going, we're very keen to encourage the existing EAI practitioners to be able to work with one another and share interoperability. So, while the RFCs are there, and everybody, I'm assuming, will be following quite carefully, that's not necessarily the real world.

So, we're trying to get people to do that. And we've got a white paper coming as well, so this is documentation. And course notes. So, we're planning on developing some lecture notes for

universal acceptance and EAI that can be used in university computer science courses.

We're doing some evaluations. This is part of our measurement program. So, we've been measuring the UA readiness of websites. And they ranged from 90% acceptance for a new short ASCII TLD, to 3% acceptance for an IDN at IDN dot IDN. We'll do… We're also working on an evaluation of browsers. The good news is almost all of the browsers displayed what we think are the quite appropriate response. The bad news is the report just hasn't been finished.

We'll do another exercise with messenger and social media applications, and that one will look particularly at the linkification IDN. And we'll do an evaluation for EAI. So we'll look at the major email software and service providers, and they'll see how EAI ready they are. And the plan is to do these all again after a year, or two years, just to see if there has been progress that's been made.

So, here is a list of the current, impending work. So, the website was launched out of Helsinki, and since then, it has been populated with additional material. We're also looking to target consultants, and people who run software development sourcing companies. So, we're looking to do, we have a model on what the economic opportunities for them are.

We just want to make sure that that model is tested by an independent party before we go too far. The university lecture notes are coming. Call logging, so that was one of the things that community had asked us to do, so ICANN global support have agreed that they will run our call logging facility.

And we should have a form on the UASG dot tech website early next week, where you can enter the real world instances that you might find. So, our plan with the call logging facility is to start small, in terms of promotion, so we'll promote it within the UASG community. This community as well, and we'll gather a number of issues.

My target is 100. Once we get to about 100 instances, then we'll have a look at the nature of the data and see if we need to revise what we're doing and how we're doing it. And then we'll repeat that and then expand to a broader community, probably the next set will be the internet industry.

So, that's the registries, registrars, ISPs and hosting companies. We've got a… We're supporting a review of the IDNA protocol, and how that relates with the Unicode versions. So, we have IDNA 2008, which is tied to a specific version of Unicode. I believe, it's six point something, and Unicode is about to launch their version 10 early next year.

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So, the IDNA protocol is not keeping up. So, we think that there might be a way to address it, or we're hoping there is, and we're supporting that initiative. There is an automated evaluation tool that's been developed by [inaudible], which is an Indian based outsourcing company.

And this is a web crawler that you can initiate, or they can make it free to the public, and it will crawl a website and make some determination as to how UA ready it is. So, we saw a demonstration of that at the UASG workshop earlier in the week, and they're going to review and revise, and share their detailed documentation to the community. So, it's available in a beta format at the moment, but a bit more work still to come.

We've commissioned the development of a white paper, economic, looking at the economic, social, and cultural benefits of early adoption. We think that there are benefits for commercial enterprises, for governments, and for community groups, to be early adopters of UA, certainly for governments to be able to communicate with their citizens in their native script. So, this is an independent paper that will look at the benefits of that, and give us an opportunity to raise the issue.

The IT coalition and echo to internet industry groups, are developing a blue print for the CIOs within the Internet industry on what they need to do to make sure their systems are UA

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ready. So, that's the registries, registrars, ISPs, and hosting. We're participating in the IGF, and we're doing the evaluation and linkification.

And then we're looking to fix the foundation. So, we've got the open source programming languages and frameworks are used by a lot of people, and many of them are not UA ready out of the box. So, we're currently working on some evaluation criteria, then we will get… We've contracted a number of parties to evaluate some popular programming language, and then we'll ask them to fix those issues and get them published.

We'll review, revise, and repeat that until we've got the bulk of the most popular programming languages done. And then, administratively, we're preparing for elections for next year, so the UASG charter has the chair and vice-chair positions are available, are two-year positions. And people are able to stand in those four two-terms of two years.

So, we'll have elections next year, and we're preparing our budget for the July 17 to June 2018 financial year. So, that's sort of a high level list of some of the things that we're doing within the UASG, and now we'll just go on through the rest of the presentations. And if you have questions, if you could just make a note of them, and save them for the end, that would be great.

Lars.

LARS STEPHAN: Thank you. Yes, I'm Lars. I'm with the committee outreach project group, the UASG, and I just want to give you a brief overview, what we are currently doing. So, on the next slide, you'll see our umbrella message, that universal acceptance is essential for the continued expansion of the internet as it ensure that new domain extensions and email addresses can be used by all internet enabled applications, devices and systems.

What does this mean? We've broken down into three core messages. So, UA provides a gateway to the next billion internet users, because we think it enables governments and societies to better serve their populations through the use of an increasing number of new TLDs, and non-Latin based language, specific domain names, including Chinese, Arabic, and many other languages that Don already mentioned.

And on the long run, from our point of view, businesses, governments, and organizations have a responsibility to ensure their systems work with a common infrastructure of the internet, and that's the domain name system, and when those parties are UA ready, it means that their systems and services will work harmoniously with a continuous expansion of the domain name space.

And will help, we will help to set them up for future opportunities, and success by supporting by the customers using the customers' chosen identities. At the end, URL ready websites, applications, and services, as Don also already mentioned, we think lead to a better user experience, because when a company is UA complaint, email addresses and any language, from any extension, are more likely to reach their destination and will not bounce, like it is nowadays, Dan already mentioned, up to 3% just for an IDN, IDN, IDN.

So, when a website is UA compliant, it will allow customers with new TLD suffixes to more successfully use the site and its forms. Next slide, please. So, Don also already mentioned, we are having several target groups we are now trying to reach out to. So, those are the ones who can make this happen.

So, the developers and system architects, and consultants who are working together with them. People who can direct to make this happen, the CALs. And people can influence to make this happen, and those are several stakeholders we have already identified that you can see on the slide. And this is the reason why we produce this diversity of outreach material, to serve every target group in that way, that it is useful, and that it is also useful for us.

So, on the next slide, you can see, we have now this foundation of material that Don already presented, and now we want to use this material to get more engagement and activities out there with our outreach and our priorities on the next slide. Is that we have this [inaudible] material, the case studies and all of the engagement material that Don already mentioned.

And on the next slide, you can see that since the last ICANN meeting in Helsinki, we published the FAQ sheet, we published a new fact sheet. We have an internal Q&A messaging document, and Don also already mentioned that we have several presentations, and articles, and progress to reach out to associations in different branches of the industry, and to continue those efforts. One of the parts we are still working on is the case study program on the next slide, so we are already in contact with several companies and organizations to produce case studies, that we have testimonials of companies and organizations that are already implementing, and already successfully implemented UA readiness in their systems and in their companies and organizations.

So, the first one will be TH Nic, so this case study will be published in the next days or weeks. Next week. And the plan is that APNIC will be the next one, and after that, we are looking forward to publish each month, one of the following case

studies, also with ICANN and also with Microsoft already mentioned on the slide.

So, there is also one project we are also working on is to get analysts more engaged. You see three examples, so we are talking to [Forester?], we are talking with IDC, and is there a reason why [inaudible]?

[SPEAKER OFF MICROPHONE]

A trademark, yeah. Okay, good. Yeah, the trademark. So, we want to also reach out to them to let them know what it is about to be UA ready, and that they can reach out to their customers and to their target groups to spread the word for us. The same is with the associations. So there are a lot of associations that are already engaged with ICANN, but also outside, that are interesting for us, because they have the outreach to the target groups we want to talk to, and those are developers, CIOs, and also Board members, spread the word, sometimes, also from the top down approach in some companies.

So, there is a small list of associations we are talking to, among them is also the [inaudible] coalitions with Christian and [inaudible] and the [inaudible] which is the umbrella organization of [inaudible] in Europe. But there are also small regional associations we want to talk to. In Germany, for example, there are associations that have a clear target group

and development branch, or this one association that's uniting all CRM and CMS systems in the open source world, for example.

So, this is very interesting also for our own website, [inaudible] and Wordpress. So, when you install forms in Wordpress, out of the box, most of them are not UIA ready. When you don't modify them on your own. And this is the plan to reach out to them to deliver more information to them, of the material, and it's one of the, part of the work we want to do.

On the next slide, we have the media engagement. Media engagement means that we also reach out to websites, to platforms, to magazines, which are engaged with our target group that we want to reach out to. There are also several examples like CIO dot com, the IT professional magazine. In Europe, I would like to reach out to the PHP magazine, for example.

But we also want to talk to organizations like O'Reiley. So, my dream would be that in every O'Reiley book there would be one chapter about the broccoli topics that Don already mentioned, just to let everybody know out there. I know no developer that has not one publication, at least, from O'Reiley. When there is a standard chapter on topics like that, that would be great, to expect the work to follow the future.

And we are also looking for influence engagement, so we are looking for, on the one hand, organizations, but on the other hand also, for individuals that we would like to get engaged on the one hand, as an advisory council, so that we have a small group of influences, that we can get in touch with, that they can give feedback and reach out to their target groups.

But and also, to have them as ambassadors, because there are some individuals, also from the developing world, that are giving on a regular basis presentations, conferences, and events. So, when they know that they are having the right target audience in front of them, we would like to have them adding UA as one part of their presentation from time to time, and to collect testimonial statements in a written way, small videos that we can use, to spread the word.

On the last slide, we have this other initiatives. So, we're also looking for [inaudible] companies and [inaudible] advertising professionals, sorry, to spread the word for universal acceptance and UA readiness. One part of it is the white paper you're planning to set up, is to have a white paper that explains and describes the advantages of making the effort to get the system UA ready, especially in the communities that are underserved, or are not connected to Latin script languages.

So, we would like to include some numbers, so how big are those regions? How big are those countries by certain terms? So, how large is the economy? How large would be the economic impact to get UA ready? How much does it cost to get UA ready? And to get a global overview, what we are talking about. So, it should include some statistics on that.

Also, the cultural value in the several regions, to serve citizens, to use the native scripts online. And this case study should also show material on new gTLD and IDN ccTLD and whatever numbers, how they could be used, also some case studies that show that universal acceptance, when it's implemented, can be a real value and benefit for the companies, for the organizations, and for the society in general.

So, this is what we are currently working on. On the very last slide, you see a small timeline, what we are working on. But Don already mentioned in his part, that in November, we begin publishing the use cases, and start with the association outreach, and start also with other engagements with material, we already have on.

In December, we plan to finalize the white paper, and plan also to use the [automated?] tool Don was talking about, and continue with the activities we started in November, and in January, so that is already the time we go ahead to the next

ICANN meeting. And we will start working with automated tool and announce it when it is finally ready.

Don already mentioned, it's in beta status. And continue with the work we've begun in November. So, there is a lot of work to do, I think we are well prepared. And if you have any suggestions, or questions about this, how we do the outreach or how we can improve our efforts, please reach out and we have this Q&A session at the end, and we're happy to… Thank you very much.

DON HOLLANDER: Thank you Lars. Mark is going to talk about EAI.

MARK: Thanks, Don. So, EAI is simple, Email Address Internationalization, which means, you can send and receive emails that have IDNs in the domain part. But it also means that you can send and receive emails that have Unicode, specifically UTF-8 Unicode, characters in the address, in the local part, in the mailbox name. So, you can imagine, this is very important for people who use IDNs in general, you know, if you want to offer email addresses to go along with your domain name as part of your business.

It's also important for people who want to use digital identities that use their native script. Next slide.

You know, I think there must be a word, maybe in German, for reviewing everyone else's slides and missing the format and change on your own slide. So, if you look at this, the example should have some Chinese characters in front of the example. It should say, user at example dot everybody.

So, just imagine there are some Chinese characters on those example lines. So, I've listed the applicable RFCs there, and it's important to note that true EAI requires the entire thing, the entire string to be UTF-8, both the local part and the domain part. You can see an example there, sort of, so again, imagine, Chinese characters for user at example dot [inaudible].

However, there is the alternate format that a lot of people have used for a while, and it's based on the idea from RFC 3492 that Puny Code is identical to IDNs. That it should always be treated exactly the same, and so in the example below, you see the Unicode, [inaudible], expressed as a Puny Code string, accent, dash, dash, and then a longer string of ASCII characters. This thing is called an A label.

And, per the RFC, everyone should be using both of those examples identically, but there is really no guarantee that any software services will use them identically. We're seeing good

progress in this, and I'll come back to that in a minute. But it's just an example of the sort of complexity that we have right now, because EAI is still relatively new in actual practice. Next.

So, for the last year or so, we've been discussing, you know, what are the good practices for EAI? And you may recall that universal acceptance is based on the idea that you can accept universally accepted strings, you can validate them, you can process them, you can store them, you can display them, without losing any fidelity and interoperability.

And so, the good practices related to these, from our master document UASG 007, indicates, you know, users should be allowed to enter in Puny Code. So in that example, the second example, where the Puny Code string was listed instead of the Unicode string. That should be acceptable. It should never be required, but it should certainly work. You should covert that to a Unicode string.

So, having entered that string, the software should change it over. You know, like when you type in a string that looks clearly like a URL, www dot something, a lot of software will immediately turn that into a clickable link. Likewise, if you enter a Puny Code string, your software should convert it to the equivalent Unicode string.

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And I give an example there, where those two strings, if I've entered the second one, it should appear as the first one. Now, that said, we're hoping that nobody is actually generating these IDN email addresses out on the wire. So, it's perfectly okay to be entering them into the user input. They should be accepted as a tenant of universal acceptance, but once it goes out on the wire, it should be in the full EAI structure, which would be Unicode at Unicode dot Unicode.

Coming back to that again though, robustness should be able to accept all of these formats, if they are presented to you on the wire, and then convert them to the proper EAI format instead. And so, these are the applicable good practices that we keep hammering on, and I'm happy to say that what we're seeing, recently, is some pretty good uptake of these practices in our recent testing, which has not been comprehensive.

It's sort of ad-hoc. We have seen that software is generally accepting the Puny Code. It is generally converting it to the Unicode. Things sent on the wire as Puny Code often end up at the other mailbox in Unicode, searching and sorting for things. A major concern was that if I have email that's in Puny Code, and I have email that's in Unicode, will they appear to be the same mailbox for the purpose of searching and sorting?

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Will they get changed when I reply to emails? And what we're seeing right now is that for the most part, things are working as recommended. So, that's some good progress that's happening right now. I think we want to skip this. Yeah, so skip that next slide for a second. Yeah.

So, there is a lot of companies who are working on EAI right now. I'm happy to say that Microsoft has made a lot of progress. Google was an early pioneer. Apple is adding more support. [Inaudible], Core Mail, [Three Way?], Saudi Nic, Open Find, you can read this. Hoard and Post Fix. I don't know if AJ Data is here in the room, but I would like to welcome X Gen Plus to our family of EAI compliant systems. They've recently announced an offering, X Gen Plus, which offers eight Indian languages, and three additional languages: Russian, Chinese and Arabic.

So, that's very exciting. It's great news. You know, it's significant because even though a lot of people are working on EAI, there are not a lot of offerings that allow you to provision a new identity. So, Core Mail can provision an identity, and I can use it on my exchange system, Office 365 or inside my corporation, but Microsoft doesn't offer those identities yet.

You can't go and sign up for one, neither does Gmail. So, it's great to see that X Gen Plus has moved ahead and is offering the

provisioning of email identities in all 11 of their languages, that's pretty exciting. Next slide please.

So, we've had a lot of activity. There is a lot to be done. But we have started to build our last of practitioners and we have started creating the next round of planning documents. So, we have a pretty good list of good practices documents. We'd like when it's dedicated just to EAI. A comprehensive technical guide, this is something that would allow you to write apps and debug other people's apps.

So, that's useful both for software developers and also IT pros who are getting complaints, perhaps, that systems are not working interoperability the way that they expect.

Good practice guides is just an extension of, you know, the good practice discussion that was in 007 that I've already mentioned on. So, identifying the practitioners and encouraging the exchange of interoperability. This is one of the things that I'd really like to get started when we meet in Seattle next spring.

So, I am happy to say that Microsoft will be hosting an event in April, for EAI participants. And it will be sort of a, you know, a reporting and status meeting, like we always have, but it will also be hackathon, de-bug-athon, where we can actually sit down and look at each other's systems, look at email headers, figure out what's going on.

At Microsoft, we call this a bug bash, where you find, file, and fix bugs. So, I'm looking forward to that. Please let us know if you are interesting in participating. It's several months ahead, but it's really not that long if you have to secure transportation.

We're also starting to reengage with the IETF. The RFCs that I listed earlier are very stable, and people are developing against them, but there are a few cases where I think they can be clarified and expanded. The IDN format email that I talked about before, is one of them. It's not explicitly listed anywhere, it is implied, because IDNs and Puny Codes should be equivalent.

But it's never explicitly stated. It would be nice if somewhere, we called that out and maybe some other formats, not from the wire. We've already declared that on the wire should be EAI, but for the purposes of input and displaying, what should you do with these other formats and how you should process them.

And then we are very nascent in starting to measure and monitor the compliance, but the other activities that we've already mentioned here, getting our list of participants, getting people active in the UASG, working towards the meeting, will help us to really do some measuring and monitoring as we go along.

I think that's it from me.

DON HOLLANDER: Thanks very much, Mark. Now, one of the most popular sessions for the UA meetings are an update from the real world of ICANN IT. So Ashwin and Sigmund, I think we have a duet, and I'm playing the keyboards.

ASHWIN: Drum roll please. Thank you, thank you so much. We have an ongoing saga that started probably a year and a half back, when ICANN started going down a path of becoming UA ready. I've had the pleasure of being invited to provide a status update regularly, and this time around, I requested our chief of programming services also to join me, so that we could get into some more detail than we normally do.

Normally, I just provide a fairly top level status report, but seeing as how much progress we've made in getting into the code and figuring out what needs to actually happen, I thought that it would be helpful to have Sigmund, who is sitting to my right, also to speak to some of the more final details.

Next slide please. There are five or six things that we will talk about. What it is, where we are, what the original plan looked like, what lessons we've learned, what's our new plan as a result

of the lessons we've learned, and also about a particular tool that was previously discussed at one of the other UA sessions.

Next slide please. Several other speakers prior to me have gone through what the definition of UA is, so I'm not going to belabor the point here. But, I think having a clear understanding is very important as a starting point, so that when you actually look back, you've addressed what needs to be addressed in its entirety.

It's not just to the left of the dot, not just right of the dot, it's not just the domain name. It's all of the things that we're talking about here, and that's what the slide is supposed to convey. Next slide please.

And the key principles, in fact, as recently a year back, these five things that we have listed here were not clear across the board. There was varied understanding as to what UA ready really meant. But I think now there was a common understanding, an increasingly wider spread understanding of this common understanding, that it is about accepting, validating, storing, processing, and displaying everything in a UA ready format.

Next slide please. It matters a great deal, you know, we've talked about UA from a technical viewpoint, but from a practical viewpoint, the internet started the way it did using Latin script, and languages that leverage Latin script became the first ones

that were capable of doing things on the internet. While content is, in fact, more and more expressed in natural language.

So, as we look at sort of a graph of the internet itself, one of the more interesting graphs that I've seen over the last few years, tracks the center of gravity of the internet as a function of the word map. And it has been steadily progressing to the east. When first I saw it, it was hovering somewhere over the North Atlantic, now it's hovering somewhere over the west of Africa.

And it's expected that within the next seven years, it will have moved significantly farther to the east, and it will be somewhere close to the Red Sea. So, that's a very interesting kind of a map, because the moment you think about that, you think of the populations that are yet to come onto the internet, they will be doing things differently from the first 3 billion.

First of all, most of them will likely experience the internet as a mobile interest. Secondly, most of them will experience it in their own local language, by jumping onto the mobile internet. And in order for them to have an experience that seamlessly intersects what the internet is capable of providing, it has to happen in languages that they know, rather than having to teach them a language right from the grass roots level.

So, there is no possibility that we will teach 3 billion people a new language faster than we're able to make the internet

understand what those 3 billion people actually speak, and already, no. So, that's the reason why this matters. Next slide please.

When we started down this pathway, we looked at it as a multi-phase project. We said, and we declared it here in this same forum, when we started the journey, that we would look at a few different platforms, so that we had a better understanding of what was entailed in making things UA ready.

And that we would also track and compile our lessons learned, so that we could share it back with this team of people, and broadcast it even wider so that people didn't have to sort of re-learn and re-invent the wheel. And last time, when I provided an update, I said that our plan, moving forward, after having learned many lessons learned early on, would in fact, be to create an ongoing plan, so that all of the services that we have in our digital services portfolio would become UA ready.

So, those are the three steps that we went through over the last year and a half. An initial plan, and then a compellation of lessons learned from that, and inform the third phase with all the lessons learned. Next slide please.

So, I'm going to briefly touch on this and hand it over to Sig, to talk about the rest of the things here. Our pilot project for becoming UA ready, started out like any other project at ICANN.

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And what you see here is an example of what we call an [inaudible], or a one page tells it all.

So, we compile all of the critical information about any project that is being run within the IT domain into this kind of format, and we track a number of different things. But beyond the formatting of it, we in this case, took upon ourselves, multiple, small but key programs on different platforms.

On in Java, one in [Rails?], one with Python, and one why PHP in Pearl. And we said, let's figure out whether it's the same lessons that we learn or different lessons. It's a good enough sample that there is variety, but it's small enough that it's contained. And representative enough that we will have lessons learned.

So, that was the first phase. The net result of that was, I think, nine or 10 programs that we were able to take care of with those small set of platforms. So, with that as the introduction, let me introduce Sigmund [inaudible]. Sig has been serving with us for about a year and a half. He didn't know anything about UA or UA compliance when he decided to accept a position with ICANN, but we disabused him of his innocence very quickly, and told him that this was one of the most important projects that he had to attend to.

Sig joined ICANN with a very illustrious career before that. Some of you may have used a product called Watch Guard in

protecting for cyber security. He is the author of it, and was responsible for running the project teams that created that multiple revisions and versions, and bringing them to market.

He is to serve there as the chief product officer, and we were lucky to snag him and bring him onboard. That is the introduction. Sig, all yours. Thank you.

SIGMUND: Thank you. So, you know, UA is, just a quick thing about UA for me. I used to tell people that eventually everybody in the world will speak English because the internet is in English, and it's so nice not to say that anymore, that instead of making people come to the internet, the internet is going to come to them, and that's always the right way to do it.

The lessons learned that we had, one was that… There is sort of two parts. One is handling long domain names, and the other is, to say it quickly, Unicode and for handling the different character sets. The long ASCII domain names is easy, from a programmer's point of view. Handling Unicode is hard. Quite a bit harder than we thought it would be.

And one of the reasons is that… There are a number… I want to go through the reasons that we have here. The standard is, you need to find every place that you use a domain, and that's where

I will come back to the [inaudible] tool a bit later. But the most time consuming portion was to be consistent in the use of Unicode throughout your service, everywhere.

Every place you miss is where a place doesn't work. There are unanticipated side effects. We had storage issues, because of course, Unicode is longer, but it's not just that a lot of our inter-service sharing of information is done by giving services access to the same database.

It's a common way to do that. They just go in and modify it. So, if you change it from ASCII to Unicode, and you haven't touched the other programs, then parts of your world start to fall apart. So, that was something that really extend the time. You have to handle that, you have to plan for that.

Third party applications, some do and some do not handle Unicode. Some browsers automatically convert, some don't. So again, especially with rails in some of our user interface focused applications, we have to test which browser it is, and make the appropriate actions. Work flow and program flow problems, sometimes we will have one platform in the backend and a different platform in the frontend, which is a common way to do it, and a successful way to do it.

But it means that you're touching different platforms to solve the one problem for one service. UTF-8 isn't always enough. We

should have foreseen, did not, there is a four byte version, UTF-8 MB4, and there are times where we really had to go there and make the system work correctly.

And then email caused an interesting testing problem. A lot of this we were doing as Ash mentioned, 12 months ago, and we didn't want to be testing Gmail or Outlook when we're trying to test our program, so we had to create our own test environment, and actually hand check email. And there is some issues there that fortunately, in the future, you won't have to go through.

But testing is a challenge because not everything in the world is ready yet, and you need to be very careful that you're testing the service that you're modifying, and not finding some backend problem that you have no hope of fixing. So, there is quite a bit of information in there. This is what makes it hard, this is what makes it, and I don't want to say…

I've got to be careful how I use the hard. It makes it complex, it makes it have a lot of pieces. It doesn't make it an impossible programming task. Each programming effort is fairly straightforward, being consistent across all of them, and finding all of them is complex. And then the most important part, is to document everything you learned because, let me tell you, the one thing you don't want to do is have to learn it again. Next slide.

So, what I really wanted to show was how team experience and knowledge helps. The first time you do this, if you do it on your own, it will take about 500% of your development guess, and about 300% of your testing guess.

Second time, it's about a third of that original time, and we sort of, and we haven't done this 100 times yet, but we're sort of guessing that the floor is in the 15 to 20% of that first time through. So, given that if you thought, and we did, that it would take three weeks to modify an application.

It will probably take you 13 to 14 weeks, the first time. The second time, it will probably take about a month, and then you're on a path of doing about two weeks a pop. So, the documentation is important. Understanding all of the side effects is important, but also not expecting that.

And a lot of it… The reason why it doesn't drop down to a few days because you've figured it all out is a lot of it is finding the trail of every little piece of every data that goes to wherever it goes, and finding it and touching it, and making sure that you use it consistently.

But you can get into an amazing rhythm with that, and it really, really does cut down, because the people who are doing it, really start to know every place they need to look. A very… A side

effect that I'm very passionately happy about is, we have a data model…

We know more about where our data is now, each time, because we had to touch each one and say, this program over here that happen to go use it, just went south, because it doesn't think in Unicode. And so, I have a data map now that's going to… By the time I finish that, our data map is going to be what I always hoped to have.

Okay. Next slide. So, we have a new plan. For this meeting, we had an emergency fix because one of our apps that's used, or replication is called [inaudible] invitation letter that's used for ICANN meetings, did not handle dot cloud email address. And that's not in Hindi, it's not, it's just more than three to four characters.

So, well, I guess I'll just say it the way I've told everybody else, I don't like looking stupid. So, first, our new plan is, we can very quickly go through and make those changes. Those changes take a couple of days each, times each of our services. And that speeds up rapidly.

So, our current plan, which isn't fully UA ready, and we acknowledge that, but our current plan is to go through every service we have, and make them so they handle long ASCII domains. There are more of those than there are currently in the

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IDN top level domains, or domains. So, we're going to go through that first.

The next step is to go through everything and run a tool, the [inaudible] tool, that helps us find all of the places that we need to touch. We didn't have that in our first pass, and that was one of the reasons it took us so long. We had to find every use of a domain, and this tool is helping us with that.

And lastly, to create the stories, we're an Agile shop. To create the stories, say this is what we need to do to track, to become UA ready, and get those stories added to the next release of each application as we touch it. So, it helps on the budget because I'm going through and saying, you are already opening the codes, you are already adding something, and we know we're going to be completely UA ready shortly because we don't leave anything alone for…

You know, we don't leave anything alone for that long. We will have touched everything. And so those stories and into our Agile list, and the test environments, are how we're going to get there. Next slide, last slide.

So, I mentioned the [inaudible] UAC analyzer. We have to change… We've got to let [inaudible] know it's not UA compliant anymore. It's UA ready. I like that much better. It's an online resource. It crawls through your website, or your

online application, excuse me, and then shows you where you have the links and validates the code.

I want to go back for just a second to the documentation. One of the prime, one of the most important parts of our internal documentation is lines of code. When I had, in Java, in Rails, in whatever platform, when I fixed the Unicode, when I fixed it so I handle Unicode, here are my lines of code, and just keep using that over and over, whether it's a copy or a module, whichever works in the proper platform.

So this is, this will be a big help and will help reduce some of our first time processes. Thank you much.

DON HOLLANDER: Thanks very much. So our chair, Rom, is here and he's going to handle the Q&A session, and Rom.

ROM: Thank you very much. There are a couple of things, before we get into the Q&A session, there are a couple of things that I wanted to mention to you. The first is that, if you look at this UA initiative, and how it got started, it got started really from the community. This is a pretty good example of what a multistakeholder effort is and how that actually works.

So, leaving the [inaudible] for multistakeholderism aside for a second, in terms of real need, the need of the time right now is really to work on universal acceptance. This is a problem that effects not just new gTLDs, it effects not just gTLDs, it effects all TLDs. And there was…

A few days ago, here, there was an Indian school of internet governance, speaking to a bunch of educators and kids there, and one of the interesting things that emerged was, what's the point of working on IDN? What's the point of building systems that can interact in your local language, if the applications, the operating systems, the programming libraries, etc. do not actually accept or identify these labels and these email address as valid?

And that's actually quite an important question to get answered. And there was a comment made that perhaps the very direct test of how you can actually increase engagement for the next half a billion, for the next billion, is to actually get universal acceptance as a clear priority, and to have that be present in the agenda is not only at developer's, not only at the sea level and at businesses, but also at regulators and also in governments and in academia.

So, with just that as a preamble, let's open this up for Q&A. [Asha]?

[ASHA]:   Thanks Rom. And I'd like to thank the panelists for a really interesting presentation today, presentations today. I was very interested to hear about the point made about outreach, and specifically about the white paper on business potential for doing UA remediation work. And yesterday, there was a confederation of Indian industries.

They had a conference, half a day seminar, and I just thought that this would be, this UA message would have been perfect message to send out to Indian industry, especially because there might have been some software developers there, and some web developers and software houses there.

So, that's just a suggestion I have. It's too late now for this ICANN meeting, but maybe for future ICANN meetings if there are business events held in parallel then this might be an idea to go and send this message out the same time.

And as a Board member of ICANN, I also speak at a lot of events, so I would be very happy to spread the gospel of UA. So anything I can do in this area, please reach out to me. Thank you.

SIGMUND: Thanks very much. There is a large number of Indian software outsourcing companies that have actually seen a first draft of the economic opportunity model for their business. Ashwin gave a presentation in early this year, the end of last year? And that people were quite interested, so we're just taking that model and we're just making, just validating it, make sure that you're getting an independent audit to make sure that the numbers are…

It's a very big number, [inaudible] outsourcing, they would be very excited about it. But I take your note as there are business events alongside an ICANN meeting, or any other meeting, that we do take advantage of that, so thank you.

ROM: Camilla. Oh, Edmund you wanted to put out a quick response to [Asha], fine, and then let's come to you, go to you Edmund now.

EDMUND CHUNG: Thank you Rom. Edmund Chung here. So, I think Ashwin brought up a very good point, and thank you for bringing us the attention. Fortunately, it's a little bit too late, but next time, this is a good thing, I guess, the team should take it back and make sure that we work with the, probably, meeting team to identify some of these things that happen at ICANN meetings as well.

But I think Ashwin mentioned one thing that early on, we talked about having ICANN leadership or I guess both the CO and the Board, as they speak, to talk about, you know, UA, spread the gospel, as you will. We weren't as ready before, now with the foundation documents, I think, we are at the point where we're ready to tell the world about this.

So, I think we should take on that and see how we can put it into action, in fact. I just think that should be something that we should follow-up on.

ROM: Thanks Edmund. And I know that Gwen is here, so perhaps Gwen, from the ICANN Coms team, so perhaps we can integrate that also as an action, so that the UA messages get integrated into the messaging for both our execs from ICANN, as well as the Board members as they go around the world.

Question from you?

UNKNOWN SPEAKER: [Inaudible] GAC from Thailand, for the record. So, I also would like to point out one of the key issues I've been following [thanks to?] the work of USG, and I've been follow some of the lists of the [IRC?]. I have some questions, because you did mention a bit about the digital identities, and I would like to point out the

concern I have that when you talk about the EAI, it's just an email, but the things that coming to enforce is the government [inaudible] government, to talk about digital identities.

Trade facilitation agreement from the [inaudible] or enforced 85 documents for [inaudible] 2020. So the next billion, either they have to start to spell their name in English, or they're going to use their own local language, and I still see that is a missing from the work, and we need to speed it up. Otherwise, I think the largest groups will be enforced, if you talk about the United Nations blue number initiative, [inaudible] register.

One of the [inaudible] entity dealing with the CAI, either they go on with their local names, or they go with the ASCII types of the email. The [inaudible] is there, the business is [inaudible], they have [inaudible] assumptions. I've been working in this PTI world digital identities since Microsoft 2000.

We have the name in UTF-8, but [inaudible] is not possible to put it in. And then, most of the people have full assumption. Even us, we just realized in the past two years, how difficult it is, then how could we speed it up, or how could we communicate? That is not ready yet.

I'm almost like being alone, talking about this, and I think that at least I have somebody ICANN chair with, it's not as easy as it is. And we have to work very hard to reach that, otherwise the

world is not waiting. You see, they talk about this [inaudible] identity, everybody need to have one. We conduct the trial [inaudible] identity that contain EAI, that [inaudible] it's the same.

It's ready, now we need to integrate it into… There is so many area that we need to work all together, and share this at faster speeds, and I do believe that you could include the digital identity as one of the major projects that need to work in parallel to EAI, otherwise we cannot match with what the markets or the demand coming from the industry, or to use the EAI, if not for the email, it's for the digital identity, and it's part of the electronic transactions that the world try to enforce the citizen to get in, without the knowledge that they are not ready. Thank you.

EDMUND CHUNG: Edmund here. I think that's a very good point you raised, especially intersecting with really, if I understood correctly, the development efforts both really ICT for development areas, including development agencies that go to places and not necessarily just about IT infrastructure, but actually E-government or engaging the even agricultural sector, as you mentioned, and they're giving out email addresses, or giving out digital identities actively right now.

And, I guess, what is being said is we need to tap into those and let them know, at least let them know there is the opportunity, there is actually the technology to allow them to provide local names and local email addresses in the local language.

And that, I think, ties into one of the things that recently we talked about in terms of more proactively reaching out to governments, who ultimately… One of the things that perhaps, if I can ask one of you two to explain a little bit further, we thought about, you know, going to governments and looking at their, you know, targeting their procurement, IT procurement, or policy areas, but you're really looking at even further, development agencies that maybe fund the cyber projects, and perhaps we can identify some of those, and you know, hit a few countries in one go.

Is that…? Where do we start? Is perhaps the question back. And I think it's a great idea, and the right place to intervene, but if there is any suggestions where we can start, I think then we can both engage the [inaudible] team, and also our network of volunteers to hit those areas.

UNKNOWN SPEAKER: Yeah, and my suggestion is that, you know, we confer, after this session is over, sit down and work together. I was smiling when you said you felt you were all alone, because when we got

started, we felt exactly the same way, that it was just us against the world. So, it's good to ban together. Mark?

MARK: Yes, I was just about to say, you're not alone. There are a lot of us who are agitating for these things. You've taken them to the next step. You see what has enabled when we have these things, and you're working ahead of the rest of us, and you need us to hurry up, and you know, catch up to you, so you can make those scenarios come true.

But I really do think the tide is turning. I am… That's why I'm so excited about Next Gen Plus, because they're giving you the ability to provision in 11 different languages now, and I do see the engineering work that's happening at places like Microsoft and Google.

We are not releasing the ability to provision these languages yet, and it's hard to say exactly when that will happen, because when you have a lot of services, the identity technologies touch a lot of things. It's like what Sigmund was saying, that you don't always know what will break, and when you have systems that are already alive on the internet, breaking a lot of people is scarier than just breaking within your corporation, which is already scary enough.

But, you aren't alone. We do hear you. And I am seeing the progress, it's just not as visible as I would like it to be. This year was a good year for us, I think. Next year will be even better, and I appreciate your patience in continuing to be forward looking, and really think about, you know, what we will do when we have this, even though we don't have it quite yet.

So, thank you. And that is, of course great feedback.

UNKNOWN SPEAKER: Thanks Mark. Howard, there are a couple of questions from online, right?

HOWARD: Yeah. There are a couple of questions from the chat box. I do apologize in the front, that if I don't say your name right. Right. So first question comes from [inaudible]. The question is, "I consider it essential ICANN should lead by public example. And so, should have its own set of IDNs and internationalized email addresses. Once ICANN IT is UA ready, will ICANN ever have its own set of IDNs and internationalized email addresses?

For example, ICANN dot, I believe that's dot org in Hindi." And the second question is, [inaudible]. He said, "I'm from the Arabic IDN text course. I want to know how I can start with your pilot

project to create and implement an Arabic IDN test cases or user stories for the Arabic UA readiness."

UNKNOWN SPEAKER: Sig, do you want to take the first one?

SIGMUND: I had a better answer for the second one, but let me try the first one. Okay, so the first one was… Give me a quick… Sorry, I got the example.

UNKNOWN SPEAKER: ICANN dot org…

SIGMUND: ICANN dot org in other, yeah. I don't know what our plans are there. I'm looking at our coms lady.

GWEN: Hi, this is Gwen from ICANN. I think that it's a good suggestion. That's something we need to take back and consider. Thank you.

SIGMUND: So, we're looking… I mean, yes, we will… We have a passion for leading the way in that form, and we have to go through our own processes, but absolutely. I think that's, you know, it comes up a lot. Let's just leave it at that. Thank you.

UNKNOWN SPEAKER: And the second one?

SIGMUND: And the second one. So, we have a fairly detailed lessons learned document that is in draft at this time. So, we plan to publish that. So, we will have our examples in Java and where we've gone. We will have a list of what we bled over, and found out, and yelled about, and that will be published in that document.

We also have our code examples, which will publish. What we won't have are platforms we didn't try in. So, we'll publish everything we have. It's in draft now, I expect it to go out first part of the year.

And then as we do more and more, as we learn more and more, that document will be a living document, so it will continue to be enhanced as we go through our next and next and next feature. I plan it as being really out view of what we've done, not the way other people have to do it, but it's the way it worked for us.

So yeah, we do plan to publish that. It will be before the next ICANN meeting, or by the next ICANN meeting.

ROM: Okay, thank you. We have time for perhaps another question or two. It's a quiet audience today. I think the internet is working very well and everyone is catching up on their email.

All right.

There was one other thing that I wanted to mention. The UASG had put together a set of recommendations and has published, as you can see, if you go to UASG dot tech, you will see the list of documents that we've published. One of the things that rose as a result, was that the chairman of the ICANN Board, Steve Crocker, took notice of it, wrote a letter, wrote back pointing out to the work that had been done.

And, you know, we intend to acknowledge, and we intend to send some thanks back for that, but the… I think there were two points there to make. One is that it's getting attention, including at the ICANN Board. I'm really pleased that we have another Board member here in attendance.

And the second is that, as the UASG is putting together information, including recommendations, what ICANN is doing is looking at that, taking note of it, adding it into an advice

registrar, and keeping track of it. So that even as ICANN takes actions, those actions get reflected. There is an accountability and a track back that happens.

And, you know, personally I'm quite pleased about that development. When we wrote our documents, I don't think we actually expected that we would get this kind of treatment coming back. This is one of those cases where it's very good treatment, it far exceeds the core expectations that we started off with.

DON HOLLANDER: Thanks very much Rom. Given there are no other questions, and given that we're… One other comment?

[SPEAKER OFF MICROPHONE]

UNKNOWN SPEAKER: We just have a comment from online. [Inaudible] again, maybe it would be useful to reach out to language groups, like for example, companies that teach languages. That's just his comment.

DON HOLLANDER: Thanks very much for the comment. Just to reiterate one of the points that Lars made, our target audience, our geeks, and not

network geeks, these are application developers, programmers. Our target audience for communications is not the general public.

So that's, so [Asha], if you're going to go talk to the Chamber of Commerce somewhere, not an issue, you know, UA is not an issue for them, but if you're going to talk to a technical group, PHP programmers, or whatever, that's our target audience.

So with that, George.

GEORGE: Hi Don, George [inaudible] from dot [inaudible]. So that actually brings a question for me. Because where then does the audience go, or the group go, in the non-technical world? We're out there, the internet community is out there, right, at hosting conferences, other conferences all over the world. We can do things with this information. Do you have a simplified version then, that we can bring out there for the non-technical community that still needs this information?

DON HOLLANDER: So the short answer is yes, so we have UASG 00 something, two or three, which is a one page straight easy to digest document. I would contend, however, that if you're talking to people at a

hosting environment, hosting conference, that they're sort of in the technical space, that they'll…

But if you're talking to your local Kiwanis or Rotary Group, probably not. So, I'm delighted to see UA articles in the CIO magazine, or in the Computer World magazine, or in the [inaudible] newspapers, but I'm not expecting to see them in the Wall Street Journal, or Time magazine, or People, or Hello. [Asha].

[ASHA]: Thank you Rom. So Don, coming back to your point, I don't think my audience I was looking to speak to is local Chambers of Commerce, but rather, like group maybe CIO Connect, or CIO Academy Asia, or business groups who are running software development businesses, because if there is no business economic benefit shown, they're not going to put the resources into looking into, you know, developing solutions.

So, I would slightly disagree with the comment that you made earlier. Thanks. But I think we're in agreement, maybe.

DON HOLLANDER: Yeah, I think we're definitely in agreement. And if you're talking to CEOs, they're definitely our audience. Those are influencers, because we want them to go back from your, where you're

speaking, to go talk to their CIO and say, isn't this fixed here yet? Or, is it fixed here?

So, no, I think we're absolutely aligned.

UNKNOWN SPEAKER: This is [inaudible] for the record. I think one of the major drivers, like I've been talking in the IGF last year, in USAG, government is the biggest consumer.   And government is binding, is compulsory. I think the biggest problem we have is awareness of the government.   They don't know anything.   They have illusions of the e-government and [inaudible], go for everything.

They forget that [inaudible] issue is without any single ASCII correctors.   Whenever they talk, it's illusion.   They've been colonized by the technology itself, if they don't do anything. That's why what I'm fighting for, for the 15 years.

ROM: [Inaudible], you make such an eloquent case… [CROSSTALK]

UNKNOWN SPEAKER: …issues, you need to create awareness at the government level to see that they are the one that needs to push the industry to go for [inaudible] for the country that do not have ASCII, that's just it.

ROM: What we need is actually your assistance, because none of us here have that 15 years of experience, you know, getting that kind of messaging out. So, you know, please come help us to make that happen.

Thank you folks. It's been, again, a pleasure to have you all at this session. As Don mentioned earlier, we'll continue to do more in this area. Please go to UASG dot tech, if you'd like to see more about what we're doing with UASG.

And Don, if you scroll down just a little bit, you'll get to see how to join the UA discuss mailing lists. A lot of… And you can get all of the data from the UASG dot tech site, but a lot of our dissemination happens through the UA discuss and the UA, basically the mailing list that we have on UA.

Thank you very much.

[END OF TRANSCRIPTION]

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