
ICANN78 | AGM – At-Large Plenary 1 ICANN and Technological Advancements
Tuesday, October 24, 2023 – 10:00 to 11:00 HAM

YEŞİM SAĞLAM:

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HADIA EL MINIAWI:

Thank you, Yeşim. Welcome all to the At-Large Plenary session: ICANN and Technological Advancements. The Internet landscape is constantly evolving with new technologies and protocols emerging. Yesterday during the opening ceremony, Tripti, ICANN Support chair, highlighted how the mere existence of the Internet has been a catalyst for innovation and emergence of new platforms, applications, and technologies. In today's session, and as ICANN marks its 25th anniversary, we will be exploring how ICANN and stakeholders are adapting to rapid advancement in technology and making sure the management of unique identifiers remains efficient and effective. We will be also looking into the future and trying to explore what to expect.

We are happy to be joined today by John Crain, Senior Vice President and Chief Technology Officer at ICANN and Steve Crocker, one of the Internet pioneers. We are also happy to have all of you with us today. So welcome, John and Steve. I will start directly with John. Thank you,

John, for being with At-Large today. Let me start by asking you how is ICANN leveraging technology for improved domain name management, DNS security and stability, and other areas under its purview?

JOHN CRAIN:

Thank you Hadia. As Hadia said, I'm John Crain, Chief Technology Officer at ICANN. I have not prepared slides because I'd like much more to have a conversational style and just talk at you.

So it's actually a really interesting question because emerging technologies is how we refer to them, and it's actually an emerging technology—in a session later today, I paid to put in plugs for upcoming sessions this afternoon—always affect what we do at ICANN. And the effect is in two ways. I want to talk a little bit about how we deal with technology at ICANN because we're slightly different to most businesses out of that purely because of our role.

So to my left here is Andre Abed. He runs ICANN's platforms. So if you're on an ICANN website or you're sending e-mails to ICANN, you're interacting with technologies that he is having to implement. You think every business has to do that, but it's slightly different at ICANN because we are affected by emerging technologies. So on my side, I look outwards, I look towards the Internet, and to what everybody else is using these technologies for, and how they advance and provides challenges, opportunities, etc., with the new technologies. Andre has to implement them. And maybe he can talk in a minute what a challenge that can be when you're implementing technologies that nobody else is doing, which is very interesting at ICANN.

So it's not new. So we've been ICANN for 25 years and we've been implementing new technologies for 25 years. Technology, as I said, presents, threats, challenges, opportunities. So one of the opportunities that you see and we all take it for granted today is this thing that's happening here. We're doing a video streaming of the meeting and we have real-time translation and real-time iteration and transcription, and we all take that for granted. Well, when I started in ICANN, which is, I guess, about 23 years ago or something, I kind of lost count, we were figuring that out. So these were technologies. They're not Internet technologies, they're application technologies. But we were figuring out how can we use new and emerging technologies to improve the ICANN mission. Big part of the ICANN mission—and everybody, I hope, knows that here—is enabling policy development. So that's one way you can look at it.

But we also have things like—well, let's go back even before ICANN. There were emerging technologies, right? 1983, something called the Domain Name System was an emerging technology back then. It got deployed, it was on a very small network that made it easier to deploy. We come back to maybe 25-30, years ago. I was involved in some of this IPv6. That's another new technology. It predates ICANN but is right in ICANN's remit, right? So it's an identifier system. It was there to deal with a challenge that we had in the IPv4 address space. But then we have to actually go make policy around that. We have the ASO for that, Address Supporting Organization. But we also need to figure out how this is going to get implemented into the ecosystem.

And that's not just a technology thing, it's also a policy thing. So if you look at the contracts for the generic TLDs, you'll see clauses in there

about some of these technologies, IPv6, one is DNSSEC. That's been emerging for quite some while. I suspect Dr. Crocker will talk a little bit about that. He's been much more involved.

But now we're looking at other things. Universal Acceptance. How are we going to make sure that these scripts and these longer strings work in the ecosystem? Andre here is having to make that work in ICANN's ecosystem, our little internal ecosystem. It's quite a challenge but we have to lead on these things. So that's another way it affects us.

So it's actually quite interesting. But to keep on top of that, that means that we also have to investigate all of these new and emerging technologies. Often you'll see what we call buzzwords. You'll see some new emerging technology that becomes really exciting and gets in the press a lot. And normally, the first question I'll get is "How does this affect ICANN?" Even an executive or a staff member or Board member, somebody from the community will come to us and say, "How does this new emerging technology affects ICANN?" That's something that I know that parts of the ALAC are interested in our low orbit satellites. We're not sure if there's going to be new identifiers, different identifiers for that. Will that have an effect on ICANN and the IANA functions? We don't actually know on that one yet. But we are talking to people. We know the people that are working on the interplanetary networking. I'm quite familiar with the people that are looking at things like lunar time zones. Did anybody know that we keep the database for the time zones? That's another thing that IANA keeps.

So the world is constantly evolving. We live in a world of technical evolution, and that's fantastic. That's a good thing. So the buzzwords

this year, only two of them. One is artificial intelligence, machine learning. We're looking a lot at that. Once again, we're looking at it from both sides. I know that Andre is looking at "Can we actually use machine learning inside the organization?" Now, I'll let you in to a secret. We're all using machine learning every day because a lot of the platforms we use are using it. It's actually not that new. We have specifically used it in the research area. So one of my responsibilities is research. We are looking at classification systems to detect abuse related to DNS abuse, of course. And for that we are actually using machine learning. So how can we use that? Other advantages in using machine learning to improve our science. Can we figure out just how practical this is?

Of course, when we do this, we share the papers that come out. We've actually got a paper coming out on this, the use of machine learning for identifying and classifying abuse. One of the biggest findings we had was just how expensive it is. It's not cheap. So people will talk about a particular new technology. And what's interesting is we will often mean different things by it. So you'll hear that I don't talk about AI, I talk about machine learning. Most people when they're actually talking about AI, they're not talking about AI in the general term. They're actually talking about specific applications of AI. So they'll be talking about ChatGPT or something else, which is interesting, but it's an application of the technology. It's not the technology itself. So we spend a lot of time looking at that.

The other buzzword these days is blockchain names or blockchain domain names. We don't actually consider them really domain names because they're not in the DNS. But that's kind of just engineers

amongst each other arguing over religion almost. We're trying to understand them. So, blockchain is one technology. The name is actually just a namespace that they're using with blockchain. So we're actually interested more in the way they're using namespaces and the fact that they're deploying blockchain for this, and there are multiple of them. So we're trying to understand how they all work. The session on emerging technologies this afternoon is actually with one of the blockchain namespace developers who are coming to tell us how does this work.

So because ICANN's role, especially from the outside facing part, my part of this, is about enabling discussions in the policy forum, it's really is important that we bring these people into the community, and then you can talk to them and you can ask your questions about, "Well, what does this mean?" So I think, if I'm correct, it's Unstoppable Domains are the guys coming this time. We've had the guys from ENS. We had the guys from a DOA, which is not blockchain-based, I think. So we've had a few of these people coming in. And as we find these rising technologies, what we do is we try and find the people that are developing them, trying to understand them from the technical standpoint ourselves, because obviously the people that are developing these technologies may have a bias and they will come and tell you they're biased. People have seen me in some of these meetings asking hard questions of these people. That's not because I don't like these new technologies. I actually love these new technologies because I believe in evolution of the system. But if we're going to have policy discussions around them, we need to know the facts. So that's sort of where we are from the sort of outside facing

from the inside facing. I thought maybe I'd ask Andre if you could talk about some of the challenges that you face as you deploy, and I'll just hand over the microphone. Thank you.

HADIA EL MINIAWI:

John, if I may, just before you hand over. You mentioned two, actually, technologies, as you say, mentioned there, like buzzwords, AI or machine learning. And you mentioned that you're already using this in trying to detect malicious use of the Domain Name System and in conducting research as well. My question to here is how do you use this outcome and how does some policy development fit in with this?

Another also, a possible use of artificial intelligence, also you mentioned in the beginning transcription and translation. So how also does AI fit there? And also, again, how does a policy development within ICANN fit within this area?

Then one more thing, because you also mentioned blockchain, again, what's the potential of using technologies like blockchain in domain name registration and management? Again, does policy development within ICANN need to play a role there? Thank you.

JOHN CRAIN:

Okay. I want to leave some time for Steve. That was a lot of questions. What we're actually doing is we're classifying data from other people who are detecting the abuse. And what we're looking at is whether or not they've correctly classified it. What we've seen is there's a lot of data mismatch between different researchers when you see their reports. Now, luckily, with some of these research papers, we have

access to the same data. But we end up with, well, not completely different but very different stories from the data. What we thought was, “Are we reading the data wrong or are they reading the data wrong?” And how can you actually scientifically look at that and make a decision on that rather than just only applying your bias? You always apply your bias, right? It’s important to realize that you can’t get rid of them. And that’s why we did that.

Now, in some ways this does apply to policy because it tells you that it can be done and it tells you how it can be done. If we take another project we did which didn’t use machine learning, which was the DAAR project, which measures the reputation of systems, one of the big reasons we did that was because people told us it couldn’t be done. And now the question is, can you better classify abuse reports to actually check them? If they’re not evidenced very well, can you actually still look at those and actually classify them? We thought that was an interesting question. So research starts with a question, right? Always. You shouldn’t do research without a research question. And the question was really “Can we find a way using machine learning to get better fidelity on the data sources?” and the answer is yes. We will publish a paper on that. Then anybody else who wants to do the same thing can go and do it. That’s how it can be applied.

You can make policy around that, right? So you can’t make policy around something that can’t be done. It’s good to know whether something is actually physically possible. You can make a policy that say all planes must stay in the air forever but you can’t physically do that. So it’s important to actually understand the technologies and

know the facts behind those technologies if you're going to make policy around it.

On the translation, I'm going to ask over to Andre because that's the other side of the coin.

ANDRE ABED:

Sure. For the record, I'm Andre Abed, VP of Engineering and IT for ICANN. To complement what John said earlier about some of the challenges we face when it comes to emerging technologies, to his point, the Office of the Chief Technology Officer is very forward-looking looking at the value and the impact these emerging technologies will have. And on my end, looking at it internally, the challenge is when there is a decision to evaluate a new emerging technology and see how it applies, both internally and for community facing, the challenge for me first is do we have the capacity and the skillset to implement it and support it? Where does that skillset come from? How do we develop that skillset? Once that question is answered, then the question is how do we implement first and support that technology within the parameters that we need to be mindful of including security and legal parameters and data privacy and such?

The other challenge I would mention here is that we have to be agile. If we wait and try to check every box of those parameters, then we miss an opportunity. If you move too fast, you could be implementing something that is not within the parameters that you had defined. So I think that's always been a challenge and it will always be a challenge for emerging technologies.

Now, back to the question of the artificial intelligence and how we are looking at utilizing that technology. AI is lots of things. At the same time, it's not a lot of things. So as John said, there's a lot of hype and excitement. So you have to be careful and ask the question, what problem am I trying to solve? And how does AI help me solve that problem?

So we're looking at very specific use cases, one of which is supporting language translation and transcription in meetings. Internally, we're looking at the possibility of using AI for how do we manage internal IT tickets. So that when we receive a request or an incident of something not working, how do we quickly respond to that end user or customer when they're reaching out? And how can I use AI to quickly provide some answers that might be helpful to them?

The other is around document search. Because we do have a lot of content, create a lot of content and documents, how do we use AI for search? Just to mention a couple of parameters that also are very critical in this as we apply AI is who owns the intellectual property that is created using AI?

I'll give you an example. When we looked at setting up an updated acceptable use policy, which essentially tells our staff how to use technology properly, just to test it, because we had to augment our document to say, "How do you properly use artificial intelligence?" we actually asked ChatGPT to write a section about how to properly use AI. So who owns that content? That intellectual property and data privacy and security... Anyway, those are the parameters we're looking for, how to put guardrails around the use of that technology.

So more to come on that, especially around how do we support these meetings with language translation and transcription using AI. Thank you.

JOHN CRAIN:

And on the blockchain question, that's another one that is interesting because it's ledger technology, right? It's ways of putting more validity, more trust in things that are in ledgers. Now, obviously, the DNS is a ledger of sorts and pretty much every database we keep at the IANA, which there are about 3000 of them is a ledger of some sort. So you could foresee that there might be blockchain uses.

Now, a lot of people say, "Let's use blockchain for the DNS." There are some major scaling questions when it comes to the DNS. Billions and billions, if not trillions, of queries a day, and obviously, blockchain—I'm not going to say obviously because maybe not everybody here knows this—but blockchain does take computational power. The DNS is designed to use as little as possible of. So there are lots of questions about where it can be used in large scale systems like the DNS.

So the answer is, I think, we don't know, but there are people out in universities experimenting with this. I know of a few universities that have projects of looking at various implementations of what they call blockchain in the DNS. I'm not sure if that's what we would call blockchain in the DNS, but they are definitely studying it. So it's an area of interest.

On the use of AI in the DNS, we also asked ChatGPT. They came up with really interesting things like, "Can we improve caching

algorithms?” That’s an interesting thought, right? Could you use machine learning or artificial intelligence to improve the caching algorithm on a DNS server? I don’t know. But I suspect, because evolution is a beautiful thing, that we will see these systems evolve and people will find new ways to do that.

I will warn or I will raise the issue that when we had emerging technologies like the DNS and e-mail and FTP years ago, it was a very small network. When it’s a small network and it’s not being used for critical functions, it’s much easier to deploy emerging technologies. But it’s not that anymore. There are more than 5 billion people using the Internet for everything. Not even hospitals, emergency services, the financial trading. So it’s a little bit harder now to deploy anything that is revolutionary into the system. So things really need to often be evolutionary and they have to be done with a little bit of care.

HADIA EL MINIAWI:

Thank you, John. I open the floor for questions. Maybe only one or two because we have Steve now. So Siva?

SIVASUBRAMANIAN MUTHUSAMY: Just a question on what John said that it is very difficult to deploy technologies when they have scaled up. If it’s difficult, then scaled up. If not ICANN, is there anybody else who could do it if it’s difficult? It particularly requires an organization like ICANN to deploy that, to look into that. Thank you.

JOHN CRAIN:

It's different layers of the Internet, it's different levels of difficulty. So it's not that hard to deploy a new application. Something like social media or something like that that sits on top. The problem with the things that we work on is they sit in the lower layers and really inside the infrastructure of the Internet. It's interesting. Coordination is an interesting term here that the Internet in and of itself is a network of networks and it's designed so that the network operators have a certain amount of freedom. So you cannot go and say, "Next week, everybody's going to be going on to IP version 11.746, and that's what we're all going to do because it's a network of networks. But what we do with our partners, people like the Internet Engineering Task Force, is we design—it is mainly the IETF that does this—protocols and standards that everybody can agree to. And then what ICANN can do is it can help promote them. Some things we can do because they're within in our realm.

A little bit more—not forcefully but with a little bit more push, for example, having all the registries sign DNSSEC in their contracts. But a lot of things, it has to be driven by the actual need of the system. So if people don't perceive the need and there is, in their mind, no added value, it's very hard. So that's why we spend a lot of time doing education and outreach around some of these emerging technologies, especially the ones that have a security benefit for the network. DNSSEC and RPKI are two that you can think of.

Security's like insurance. Nobody wants to pay for it until something goes wrong. Everyone's like, "Oh, I wish I'd insured for that," or "I wish I put that security thing in place." So we do have, if nothing else, a moral obligation, but I would argue that our Bylaws also give us an

obligation to go out there and push for more secure systems but it's hard.

HADIA EL MINIAWI:

Thank you, John. I will only take Sebastien now, and then I will ask the rest of their questions in chat. If we have time in the end, I will take the rest of the questions live. Sebastien, please go ahead.

SÉBASTIEN BACHOLLET:

Sebastien on mic. I am sorry, but I will force you to take your headsets. I'm sorry, I bother everyone with that. But I think it's really important to use all the tools that we have at our disposal. I'm not starting my question now. I give everyone the chance to take their headsets.

Why do I speak in French? Well, I wanted to go back to the question of the interpretation tools. There are studies that have been put into place. It's very easy in ICANN meetings, we can go from one language to another, but we do not use this tool. So I understood throughout the answer of the communication director, Sally, that it was a question of money because it was really expensive. So I wanted to know, do you have at your disposal some cheap solutions that would allow us to get from one language to another? Thank you.

JOHN CRAIN:

Let me clarify the question. Are you talking about text to text or voice to text or voice to voice?

SÉBASTIEN BACHOLLET: I am mainly talking about voice to voice.

JOHN CRAIN: Do you want to take that question?

ANDRE ABED: Just to clarify, your question is do we have at our disposal or access to tools that are less expensive, cheaper solutions?

SÉBASTIEN BACHOLLET: You see the problem we have that? We have interpretation and we have difficulty to understand. I know that I don't speak well French and well English. But my question is the following. We have a tool here within Zoom, allow us to go from one language to another very easily. When we have conference call between the ICANN meetings, we need to have three phones. We need to have one in Spanish, one in English, one in French. How we can deal to have the same type of easy-to-use tool within Zoom for different languages? But as it seems that the current system is very expensive. Do you have something less expensive in your treasures?

ANDRE ABED: Yeah. Thanks for the question. So today's solution we're using, it's human-based. So that's where the cost comes from. But one of the things that we'll be looking at for future use is actually Zoom offers a telephony service which is a parallel service to their meeting platform so that the same translation technology that is deployed and used by companies around the world that Zoom offers, they will offer the same

on the telephony site. So it can be a conference call or a number you dial into, and then have access to that same translation service. But at this point, they're offering that on a screen. So you'd still need a screen when you're making that call.

JOHN CRAIN:

I think a lot of these services are getting cheaper by their nature. I think this is exactly one of the areas where things like AI is going to help out. We've seen real-time translation services. I don't know if everybody's seen these, but there are real-time translation devices, one language to another. So the technology, they're not brilliant, but they're pretty good. The technology is evolving. It's getting there. It doesn't seem to be there yet, but we will keep looking at these new technologies and see whether or not they will work.

Now, of course, for this platform, we are using Zoom's technology. So a lot of it depends on where they go and how they price it. We do thousands of meetings, literally—I've seen the numbers, it's scary—every year, so the cost does go up exponentially as you do them. I mean, it costs a lot of money to do these meetings. It's not cheap but it's a good value because we have a lot of people here, it's a big meeting. I think Sally said this. We will keep looking at this, and at some point, it's going to make sense.

HADIA EL MINIAWI:

Thank you, John. We have also with us today Avri and Leon. I would like to listen also to your thoughts. But I would first give the floor to Steve to talk about the future. Thank you. Dr. Steve Crocker?

STEVE CROCKER:

John and I are sitting next to each other and have known each other for a good long time, but I need to say that in preparation for this duet, we did zero, absolutely zero coordination, no communication whatsoever. So this is a independent experiment, if you will, on addressing the same topic, although, I think, at least as I understood, my assignment was to look even a little further ahead. So with that, I scribbled a couple of thoughts down. Next slide, please.

So there's lots of choices about what to talk about. So there's five thoughts: cryptography everywhere; facial recognition for good or for evil; data analysis; automatic translation, which we've just had some very pointed questions about; and discussion facilitation. So of these—next slide, please.

I decided I'll just focus on the last two of these. There's plenty of things to talk about in the others, all reasonable, but I'll just focus on this for the moment. Next slide.

So with respect to language translation, you have dictation speech to text, we have translation, ChatGPT. These are in there. They're not quite in their earliest stage, but they're definitely not in their last most mature completely soft stage. So they're kind of rough technologies but useful nonetheless. Next slide, please.

The question of, "Could you have real-time translation of voice to voice automatically?" and although I hadn't thought about it quite the way it was being asked, but I just assumed that in being automatic, automatically it also takes care of the cost issue, that instead of having

a lot of people in the way and having to pay them and the delays that are involved, just imagine that it's instantaneous and, for all practical purposes, free. So the idea of that was socialized in Hitchhiker's Guide to the Galaxy some years ago with the idea of a Babel fish that stick in your ear and it translates all languages. So that was kind of a whimsical thought. Next slide.

So I asked Raj Reddy. Who's Raj Reddy? Raj Reddy is a Senior Computer Scientist at Carnegie Mellon University. I had the pleasure of writing checks when I worked for the government to support some of his work in early speech understanding research 50 years ago. This is 2023. Last year 2022, we had a meeting that focused on 50 years of development since a major demonstration that he carried out in 1972. I said, "So what's the future for this?" and he said it was already on record, published a year before 2021, that within 10 years, 8 years from now, you'll have the kind of automatic translation voice to voice real time, between 100 different languages, any pair of 100 different languages.

Whether that's going to happen exactly on schedule, that's a whole nother matter. We're talking here about whether the technology will come into existence. The adoption of that technology obviously depends upon how mature it is, and what the business propositions are, and how hard it is to integrate it into what we're doing. But if we want to look ahead a little bit beyond what the vicissitudes of taking current technology and adopting it and just say, "What's coming down the pike?" there's one prediction. And for most of us, and even me, I hope, this is within our lifetime. Something positive to look forward to. Next slide.

What do we do here at ICANN? There's a lot of technology. There's the identifiers, the Domain Name System, and so forth. But the most obvious thing we do is we talk to each other, and we talk to each other, and we talk to each other. And we negotiate, and we write down positions, and we summarize them, and we circulate those, and we try to come to some sort of conclusions. Painfully slow. So here's a dream which I hope most of you have had. Wouldn't it be nice if all of that was facilitated so that you got a clean summaries that were short and to the point and complete nonetheless, and where what people are saying was compared to see if they matched up or if you're talking past each other? What are the key ideas that are in them? How do those ideas fit together? So you got a much more efficient and effective process in this policy development process.

I've now taken time since stepping off the Board six years ago to reengage and sit in some of these very detailed policy discussions. It is terrible, it is just awful. The content level is so low that it is a real stretch to stay awake and be patient with what people think. Everybody's earnest, everybody's got something to contribute. But the amount of repetition and the amount of stuff that just doesn't line up exactly is tremendous. And it's possible to make some fairly bad jokes about what would happen if you squeezed out all of the extraneous stuff.

But looking forward from a technology point of view, one could imagine that the kind of technology, not only that's in ChatGPT but other AI-based systems, could do a decent job of not only generating text but understanding text and building useful products based upon that summaries and positions and so forth. So there's another dream.

Is that 10 years off? I don't know. It could be shorter than that. I suspect we'll have various versions of this creeping in subtly. There may not be a dramatic breakthrough or there might. But one could imagine that kind of technology coming. It'll be useful, of course, for lots and lots of situations, not just ICANN, but certainly, given that ICANN is in the business of having people talk to each other and try to compare ideas, I suspect that this would be a great place for adoption of that kind of technology. I think there's one more slide.

Oh, yeah. So I've talked about those two choices. And another one came to mind as I was preparing this is it wasn't too hard, but why did I have to spend time preparing these slides? I should have just been able to say, "Yeah, generate slides like this," and then we're off and running. And the next step, of course, is why do I have to actually present them? Thank you.

HADIA EL MINIAWI:

Thank you, Steve. So quite insightful. You did talk about technologies for the future to support stakeholders' engagement, contribution, and output, automatic translation and facilitating dialogue. However, we skipped on crypto and data analysis. Anyway, we have some time now. I would like to invite Avri if you have some thoughts that you would like to share. Avri Doria from the Board.

AVRI DORIA:

Okay. Thank you. Gee, I better have something worth saying now after all that. I actually appreciated both talks. I think starting with the second one, I want all of those things. I want that Babel fish now. I

probably pronounced it differently, but I really want that Babel fish now. And also everything you say about discussions in disambiguation and pointing to the agreements is stuff to be excited about.

In John's talk—and this is just a brief comment—one of the things I've always mourned about DNS, when DNS came out, I thought it was the most glorious protocol. And it had the ability to handle many different classes of names. And we wouldn't have had to worry about whether they were using our names or we were using their names, because they all came with a different class marker, the software would have dealt with it and we would have never had this problem. It's a problem that I see often in software development is somebody creates something really wonderful, then the people that implemented, implemented a little less carefully, and then all of a sudden when we really need a feature, it becomes impossible to fix it. It becomes impossible to use it. That in possibility is one of the things that I look at and sort of say, "We have this beautiful thing. Anyway, go back and read original DNS and look at it." It had the ability to deal with some of these issues that John was mentioning now, and yet as far as I could tell, we don't have anybody that's looking at it, and it wouldn't be massive. I mean, it would be hard. There would be an amazing amount of existing equipment that would need to be dealt with, but why don't we have anybody that's looking at how do we fix this wonderful tool that we share responsibility with with the IETF to make it work again? So that was the thought that I had going through.

I think a lot of these things can be dealt with with policy. We sort of developed a mantra in an ICANN. John doesn't use it quite as much as the rest of us do. It's not technology that will fix things, it's policy. And

I think sometimes we actually forget that it is technology that will assist us in being able to fix it with a simpler degree of policy so that our policy doesn't get quite as gothic as sometimes it gets.

I'm three days away from the journey that Steve was describing, yeah, of stepping down off the Board and looking at things in a more permissive way.

HADIA EL MINIAWI: Avri?

AVRI DORIA: I'll stop.

HADIA EL MINIAWI: It's just because of the time.

JOHN CRAIN: Don't leave, Avri. Don't leave the table. She's gone back. But you're right. Absolutely, there are lots of things that can be changed. And the DNS is adaptable. We add new record types all the time. People are lazy implementers especially, and we put things in text records that maybe should have been a new record type. Every time you raise the issue of "What about the classes?" people seem to run away. But you said you're going in three days, so hopefully you're going back to the IETF and you're going to raise this issue, and DNS Ops. And we're going to use these things. But you're right, a lot of people do say, "Oh, it's too hard. Let's not use the technology." As you said, I don't say that as

much. I love evolution of the technologies. They do help us achieve what they want. You need both. You need policy and you need technology. I don't think you can just deploy technology without policy but you have to have the technology. So I'm looking forward to seeing you in DNS Ops.

HADIA EL MINIAWI:

Thank you, John. And now, León Sánchez, Board member. He's ALAC appointed Board member.

LEÓN SÁNCHEZ:

Thank you very much, Hadia. I'm going to speak in Spanish. So if you don't have a fish ear set, go get yours. It's only nine years away.

Predicting the future is the biggest challenge we have ahead. It is almost impossible to see what is coming. But it is easy once we have the results. It is easy to say, "Okay, this was obvious because this was supposed to happen." However, after hearing John and Steve and Avri, I have a concern, and this is whether in ICANN we're being endogamic. What do I mean by this? Of course, I might be wrong. But it seems that we are pretty sure that there is not going to be another technology that we don't see that another technology is feasible or that another technology will substitute the Domain Name System. In this sense, I think that I don't know if whether in 5, 10, or 20 years, I don't know exactly when, but I believe that there are going to be multiple systems, multiple name systems on identifiers that will live together, they will be interacting, and they will be interoperable. This

is what John said is relevant, because we need the policies helping us to work with these systems and to coordinate the systems.

But I don't see ICANN in time point to decide whether this is going to happen or whether this may happen or not. I believe that ICANN is now observing and is in a position of observing and participating in that change as we're doing it right now. So, in addition to focusing on something or believing that something is not going to happen, I think that we have to observe and we have to think and see how we can shape that future, how we can contribute and ensure that the current DNS system of being obsolete may evolve in order to be able to allow those new other identifier systems or name or number systems.

Today, we have a sort of barrier because these alternative systems are not easy to use for end users, particularly for those who have no technical knowledge. When we overcome this barrier and when these technologies will be easier to adopt, so there is the point where we will start seeing the challenge. And the challenge would be that these multiple systems should coordinate and should work or interact, and we will need a sort of integration for users to be able to use the diverse systems.

So I think that that is what the future holds. Of course, I have a lack of technical knowledge and I might be saying or talking nonsense, and perhaps I am realizing things, but I thank you for being so patient with me, for taking my words. But talking seriously, I believe that that is the horizon we have ahead and that is what we should be looking at ICANN, how we can contribute to the discussion, how we can shape

the discussion, and see how we can achieve that interaction. Thank you.

HADIA EL MINIAWI:

Any comments from John, Steve?

JOHN CRAIN:

The interaction of different namespaces is what you're talking about. There is a really both simple and complex problem at the same time. So we don't have a mechanism for an application on your device. We don't have a protocol for this to determine what namespace it's in and to choose namespace and to distinguish between namespaces. So we don't have the technical capability of that. But many of these namespaces that are emerging, they're very new. They're new into this space. Some of them are a reaction to the managed system to the fact that the DNS has policy in place. They might not like some of these policies. Some of them are developed to be immutable to mean you can't take them away. They don't like that you can take away a domain name. So there are very distinct use cases that require policy. And many of these environments, many of these developments, they don't have mature policy spaces yet.

I meet with many people from developers of the systems and they are well meaning, and they have defined a problem that they're trying to solve, and they're trying to evolve the system. So these are not bad people doing bad things. These are often engineers trying to engineer around a problem. But there needs to be policy. So Leon's talking about how we need to coordinate. Well, coordination isn't a technical

thing. It's a policy thing that need we need to have policies around this.

Some of these namespaces, not all of them, but some of them, by definition are designed not to be coordinated. And it's a free world. People can go out and design whatever technology they want. And if they make it better, more usable, more successful within the DNS, I'm not sure that's the end of the world because that is what evolution is. Now, if they can do that without breaking all the systems, that's a really interesting future. Let's see where they go. Now, I will say that more and more of them are coming into these forums and talking to us, and that's a good thing, and we should talk to them, and we should look to see how these technologies work. We should understand the risks, and we should understand that with these risks also come opportunities.

So, yes, I think it's a really interesting problem space. I don't think technology is going to solve it and I don't think policy is going to solve it, or at least neither of them on their own. So if you get to meet some of these people here—am I going to do another plug for the emerging technologies? Yes, I am. Come talk to these people. See what they're doing. Figure out what the problem is they're trying to solve. Some of these problems could probably be resolved in the DNS.

HADIA EL MINIAWI:

John, thank you so much. I would like to give the floor to Steve for some final thoughts.

STEVE CROCKER: Thank you. Actually, I was hoping to hear more. I didn't want to consume too much. But anybody want to poke at the suggestions that I made or make any comments particularly on... I think we've covered the automatic translation well enough for the setting. But the idea of having facilitated summaries and sort of competent understanding of what's being said and sorting out of consistent and inconsistent statements in the massive amounts of text that get generated.

HADIA EL MINIAWI: Steve, actually, I don't know if anyone wants to take the floor on this same thing, on this same topic. Because there are many others before you and had cards on, but does anyone have a response to this particular point? Bram?

BRAM FUDZULANI: I was going to say the question is in the chat room also.

HADIA EL MINIAWI: Yes, it's just we don't have time. We're already at the top of the hour. Justine? Tijani, do you want to respond to this specific part? Because you had your card before? Thank you.

TIJANI BEN JEMAA: Sorry. I will not respond to the question of Steve but a general remark. John, you said that the question we have to ask is how this technology can affect ICANN. I think the right question is how these technologies can affect the Internet.

HADIA EL MINIAWI: Okay. I'm sorry, Tijani. Could you put it in the chat box? Thank you.

So, Steve, responding to your question, I personally do think that discussion facilitation is actually a great thing. Identifying agreements and consensus, clean summaries to the point, demonstrating key ideas, that would be great. You said automatic translation would take like about maybe eight years from now. But when it comes to discussion facilitation, what's your prediction there, the timeline?

STEVE CROCKER: You've got to be kidding. I don't know. These things go in spurts. It takes a long time, and then all of a sudden, you have a major success. It's hard to see accurately more than, say, five years ahead. Because five years ahead, already the technology is in the laboratory, and you're talking about what it takes to adopt it and sort of commercialize it and so forth. But I'm not sure we're that far away from having some interesting experiments at the kind of thing that I'm talking about. And from there, things move along fairly rapidly. So I would look forward to... Let's keep that question live and bring it up over the next year. Maybe a year from now, maybe sooner, and see if there's any tendrils coming up from the ground of things along that line. There may well be. I'm not that close to the frontier of research in that area at the moment, but it'd be fun to find out.

HADIA EL MINIAWI: Thank you so much, Steve, and thank you, John. Thank you all for being with us today. We are sorry. We were not able to take more

questions. We will get back to you in relation to the questions posted. I think that we might need a second part. We were not able to have the discussions that we were looking forward to. So, I thank you all again for being here today and I look forward to part two of this session. Thank you.

[END OF TRANSCRIPTION]