ICANN79 | CF – ccNSO: Internet Fragmentation Work Session
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CLAUDIA RUIZ: Hello, and welcome to the ccNSO Internet Fragment Work session. My name is Claudia Ruiz, and I will be the remote participation manager for this session. Please note this session is being recorded and is governed by the ICANN Expected Standards of Behavior.

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Thank you. And with that, I will now hand the floor over to Annaliese Williams, session chair. Thank you.

ANNALIESE WILLIAMS: Thank you. My name is Annaliese Williams. I'm the chair of the Internet Governance Liaison Committee which has worked to bring you this session today.

The purpose of this session is to explore the issue of Internet fragmentation from the perspective of a ccTLD. Internet fragmentation is one of those issues that doesn't have a universally agreed definition. It can mean different things to different people in different contexts. The Internet Governance Forum Policy Network on Internet Fragmentation has identified three key elements: fragmentation of user experience, technical fragmentation, and fragmentation of governance and coordination. But however we look at it, there can be potentially significant implications for ccTLDs.

So our speakers today will be bringing perspectives from .za, .br, and the Africa Top-Level Domain Organization. We are joined by some external guests today as well. So we have Elena from ICANN, and Bruna is joining us online. Thank you both for making the time to come to the ccNSO.

Our first speaker today is Elena Plexida, ICANN's Vice President of Government and IGO Engagement. We've invited her here to share ICANN's perspective on Internet fragmentation. So I'll pass over to you. Thank you, Elena.

ELENA PLEXIDA: Thank you, Annaliese. I was not escaping. I was just running for some water. I realized I will need it and I did not prepare. Thank you for organizing this discussion. It's a very interesting topic. And as you very

rightly said, it is a topic that is being discussed widely. But not everyone discusses it from the same perspective or means the same thing.

From ICANN Org perspective, we think that to start talking about internal fragmentation, one should I actually start by defining by singling out what it is that makes the Internet One single. Because we all know that it's not one thing, it's many different networks running through all sorts of communication infrastructure. So what is it that binds all that together? And the answer, of course, is no other than the unique identifiers, the namespace, the domain name system, the IP addresses, and the IP protocols. It's this sort of common technical language that helps every device that is connected on the Internet find each other. That's the way we have one single Internet. I would say the emphasis actually is on the word unique identifier is this uniqueness that gives us the global Internet. As long as different networks and devices can find each other on the Internet and we have this uniqueness, we'll have one Internet. And this is exactly ICANN's mission. So, as you know, we are part of a family of technical organizations. It's not just ICANN. It's IETF, it's the RIRs. The ccTLDs are part of this family of technical organizations that help maintain and give the world one global Internet.

So I would say that a fragmented Internet would go against everything ICANN was created to do, was put in place to do. But what is Internet fragmentation therefore? At content level, there are already limitations. Content is not available to everyone everywhere. That has been happening for years. It's not something new. It's even desirable in some cases, think about parental control. In other cases, of course,

it is not. But that's not a broken Internet. It's not anything that is broken in different pieces. Its limitations as to the content, the user can access, user experience limitation, but not Internet fragmentation. So here you might already hear me saying that we differentiate a little bit from—and Bruna will discuss more about that with respect to the definition or the categories that the IGF Policy Network has come up with. I think—and that's my personal take—that it can be confusing to just talk about internal fragmentation and put everything in the same bucket because people can live in a discussion, a debate, thinking that the Internet's already fragmented. That can become a kind of self-fulfilling prophecy, if you will.

I have an example to share from discussing with an elected member of the European Parliament in Brussels. It was actually about the NIS2 and the suggestion to regulate the root server operators back then, which, fortunately, is not in the legislation. So we were discussing. I was trying to make the argument that in the long run, if you start interfering with the governance of the unique identifiers, that will lead in developments that could break up/ fragment the Internet. The response I got spontaneously was, "But I don't understand what's the problem. It's already fragmented, isn't it?" That's because in the context of other discussions, content related discussions, it was presented as we have fragmentation here, fragmentation there. The one thing we should be doing is diversify better.

So the Internet is not broken at a technical level today, of course. Could it be broken? Yes, definitely. My colleagues, if we have alternative namespaces, the uniqueness is gone, it will have a second root, the uniqueness is gone, it will have different IP standards. The

uniqueness is again gone. My colleagues in OCTO, as you might be aware—and I'm seeing Adiel here in the back—are following a number of developments, technological or business side of things, that could potentially threaten that uniqueness. The IP protocol replacement like new IP is promoted or has been promoted as a replacement for IP. As far as I understand, again, from my OCTO colleagues, new IP address today to be far from being mature enough to be a credible alternative or the alternative namespaces based on blockchain technologies. Because there is no bridge between these technologies and the DNS or even between these technologies themselves, large scale adoption could threaten the uniqueness, create different incompatible Internet ecosystems. But again, understand we're far away from landscape. Speak slower, yes, story of my life. But, if you will, the real threats to the Internet is not technology. Technology advancements, you can even say is a good thing. Besides, you don't need alternative protocols to create splinter in Internet. You could use the ones that already are there. It can be done.

Fragmented Internet, although a technical issue in our view, will not really come from technological developments or from the technical world. If it comes indefinitely—I'm sure we will hope it doesn't come—it will most likely come from the political world deliberately or by accident, and the accident being the one that really concerns me the most. Because I do strongly believe that no one really wants to break the Internet intentionally. There is so much strong self-interest in all of us being on the same network, social economic benefits that no one really, I think up until today at least, would want to do that intentionally.

Still, the million dollar question is, will the global Internet survive a fragmented world? The Internet's developed in a point in time where we're going from nation states to globalization, we all loved each other, there was a togetherness, we wanted free trade, all of these things. This togetherness is reflected, I would say, in the Internet itself as an invention. It's borderless, permissionless, and its governance. It's a governance system that if you think about it, it's really outside sovereignty. That's what we're doing here. Governments are just sitting with us, debating and discussing and taking the decision. They're not the ones that are taking the decision.

Okay. That said, the world is definitely not the same place anymore. You can even say that we're going backwards towards a more nation state approach. There are tensions between international actors. And these tensions have started playing out in our field as well. I mean, the identifier space. For example, the notion of distal sovereignty, which is being primarily applied somewhere else, we are seeing it now getting applied at the level of the identifiers in the form of legislative initiatives, for example, that are targeting the DNS. Once upon a time, we did have legislative initiatives that unintentionally would touch on the DNS. Now, I would bring that to your attention as a change, we have legislative initiatives that are targeting the DNS. Overall, I would say these tensions on the identifiers level, we're seeing politicization over the identifiers. The debate about moving the governance of the identifiers to a purely governmental form is not, of course, something new. But it's something that might be coming back. The legislative part, which I just mentioned, I think is a new trend to pay attention to. A big example showing this politicization trend is, of course, the fact

that identifiers are being leveraged in even in the context of conflicts. For example, look at the letter that ICANN and [drive] received in the context of the conflict between Ukraine and Russia when this broke out.

So overall, there is a tendency to reassert nation style governance even over the identifiers, I would say, and drawing them into the geopolitical agenda, although it used to be that they're just purely technical operations. Drawing the identifiers into the geopolitical agenda can jeopardize the very global nature of the Internet. And the reason for that is that everything is really based on trust. No one makes anyone use this set of identifiers, this unique set of identifiers. They're being used because they're trusted and because the governance is trusted. So efforts that could challenge the governance system or introducing legislative initiatives that could lead to inconsistent DNS answers, standards that are government mandated, all these kinds of things, they can challenge and threaten the trust, which is really the glue that keeps the Internet together. And in that way, little by little, you're pulling the rug out from under the feet of the global Internet.

From ICANN perspective or up for debate with the participants what we should do, or what we could do, or what we consider, first of all, do not take the Internet for granted. We know it here in this room, but I think we should propagate this message outside. People think that it will just work, the Internet will just work. Well, it needs to be taken care of.

Differentiates between content and the technical level, there tends to be debates, particularly at the policy level world where everything is seen as one thing. That can unintentionally lead to things being back at it in a way that would create problems. Also, maybe moving away the debate on the Internet fragmentation topic, instead of just trying to define it, taking it a step further and start saying what are the actual elements that should not be tampered with in order to continue having a global Internet? Thank you.

ANNALIESE WILLIAMS: Thank you very much for that, Elena. I think we have time for a couple of questions, if there are any. And if there is time at the end of the session, we can come back to questions for any of our speakers. But any questions for or Elena now?

ELENA PLEXIDA: It was so fast no one understood anything.

ANNALIESE WILLIAMS: Yes, I saw a question over there. Go ahead, please.

MICHAEL GARGIULO: Hello, Elena. Thank you for that wonderful presentation. My name is Michael from vpn.com. I'm curious on the conflict policy approach that ICANN has around wars in countries that don't necessarily do the greatest things with their ccTLD. You're seeing this splintering in countries like Iran have been doing this for 10 years or they basically use the .ir ccTLD to be the only Internet that their people have. What's

the policy position around this? Is this something that's endorsed by ICANN? Is this something that countries should be leery of in some way? Or how does ICANN as a body tackle the thought of countries doing this more and more and more which will splinter the Internet over time?

ELENA PLEXIDA: Michael, thank you for the question. I'm sure you're aware and other colleagues that are ccTLD managers in this room will tell you, ccs are a national resource and they're serving the countries. And as such, everything that has to do with ccs is their own business, if I can put it that way. So ICANN doesn't have a view or an influence and nor should it have any view or influence over what the cc is doing or not. Aside from that, if I may continue this, the worst thing that can happen is what I was describing before, politicizing these kind of debates, because that's what will lead us to not the good paths. I don't know if any of my colleagues—

MICHAEL GARGIULO: I appreciate that. Just one follow-up, I just find it personally interesting how we have commercially all these policies for domain names, trademark infringement, abuse of names, all of these policies are in place about what a person or an entity can do with their names. And then when it comes to a country, doing things that are far, far worse than infringement, it just seems interesting, the dichotomy that we have there. I just personally find that interesting and how I get the hands-off approach. But why are we so strict on the business but so

hands-off on the country? I just find that interesting. I just wanted to share that. Thank you.

ANNALIESE WILLIAMS: Thank you. I think we'll take that one as a comment. We do have several speakers to get through. But we can discuss further at another time. Thank you, Elena, and thank you for your question.

So our next guest today is Bruna Martins dos Santos. You may know her from her role as a GNSO councilor, but she's also one of the co-facilitators of the IGF's Policy Network on Internet Fragmentation. And it is that capacity in which we invited her to speak today. So I will pass over to you, Bruna, thank you.

BRUNA MARTINS DOS SANTOS: Thanks, Annaliese. Hi, everyone. I'm very happy to be here. And thanks again to ccNSO for the invitation. Perhaps leading on the point, I think we were addressing really… Actually, let me restart. But the way we started discussing Internet fragmentation as part of one of the IGF's intersessional work was because a lot of the discussions kind of delegated the debate on potential political or even like user related effects of fragmentation of some market practices and things like that as something that should be overlooked or something like that. So a lot of folks that were trying to come into the Internet fragmentation debate with examples such as Internet shutdowns or even what's the role of big tech in closing up spaces in market spaces, they really wanted to know what the relation with Internet fragmentation was. And up until we started the Policy Network, the debate was very much

framed into what Elena was kind of explaining. A lot of the technical aspects and whether or not things such as the DNS were working, or the domain name, or even IP numbers were being distributed and things like that.

So what I feel is that a lot of the Policy Network and Internet Fragmentation work, a lot of what it does—and we can go to the next slide—is kind of build up on some questions and concerns that other communities had, like in questions really about what's the relationship between some effects and what goes on at the Internet regardless of the layer? How can we better collect and analyze case studies to understand what's going on? Or even how can we establish shared principles, recommendations, or even codes of conduct that can put forward this basic nature of the Internet as open, interconnected, and interoperable? It was really about connecting a lot of these examples and questions to some of the discussions on the grounds, and even connecting different kinds of expertise into this debate. We can go to the next slide as well.

So the Policy Network really builds up on a set framework that has a general goal of guiding and orienting, coming up with a tool for guiding and orienting, this continuation of the debate around fragmentation and bringing in more people and stakeholders to allow this more holistic and inclusive debate. And at the same time, create a space for focused discussions and work towards concrete solutions, policy approaches, and guidelines. I just had the notice. I'm speaking slower. I'm sorry. We can go to the next slide as well. Next two slides, I guess. The next one, too. Yeah.

On 2022, the Policy Network comes up with a framework. That's what you see in the screen on the left. So it basically creates three-set baskets for Internet fragmentation or for the discussions around Internet fragmentation.

The first one is the classic debates. Internet fragmentation at the technical layer. So it's everything we have been discussing and everything, that it's very close to ICANN as an org and as a community.

The second layer is the fragmentation of the user experience. So it's kind of this ongoing questions on whether Internet shutdowns or fragmentation, market practices or fragmentation, or even if a certain regulation prevents the users from having access to one certain type of content, whether that is fragmentation or not.

The third basket that we worked on is the fragmentation of Internet governance and coordination. This last one is basically, in my opinion, the most important one because it dives into a lot of the debates we have been doing in the past two to three years about duplication of spaces, need for better coordination between technical institutions and also multistakeholder spaces. It's really relevant for us to kind of come up with even stronger coordination level for spaces such as the IGF and ICANN, or even how do these used spaces talk with processes such as the global digital compact or the WSIS review.

Then we take this into 2023. In 2023, the work is basically divided into three new kinds of baskets that we basically address as unpacking, prioritizing, and avoiding or addressing. And this is the way we've decided to work to dive into each of the baskets. So it's basically what the name says. But the idea is to work on something around the

identification and prioritization. So identifying which kinds of fragmentation or related actions we were referring to, what were the actual risks that we were talking about, and whether or not they should be addressed. The second part about the work is also about prevention and addressing. So defining what could be the practices, guidelines, and principles to prevent or address fragmentation. We can go to the next slide.

This is just about some of the webinars in the work over the year. We did have one webinar and very deep discussion for each of the three baskets that we were working on. We did assemble some working groups to discuss each of the debates, and that led us into the discussion paper that was issued ahead of the IGF last year. We can go to the next slide.

This discussion paper dives into the three baskets in the concepts. So when we look into Internet governance and coordination, as I was saying, we were discussing basically how this set fragmentation of Internet governance relates to the need for interaction between global Internet governance and standard groups or standard bodies. When these bodies don't coordinate inclusively, it can or could result in fragmentation of the debate itself. That's basically what we say. This fragmentation could manifest in more silos or duplicated discussions and the exclusion of specific groups from participation. Just to quote one example, I think that's a little bit of the movements that was done last year around the GDC and this attempt or even this initial conclusion that the technical community wouldn't have a place like speaking slots in the GDC debates could be a very good example of what we are addressing. When it all happens, what we argued, is that it

could result in decisions being taken without consensus from the global multistakeholder community. Also, the last point about this is that fragmentation at the governance level can create knock on effects for fragmentation at the technical and user experience layers. When, let's say, either new policies or new principles, they can be rolled out without bridging with the proper expertise. We can go to the next slide, which is about recommendations for this first one.

Then we're basically here going to what can be done to avoid fragmentation at the governance level, which is avoiding duplicate mandates, avoiding closed forums or exclusive participation and the need for taking action with the right measures at the right level. In terms of practical steps, we have considered the need for not introducing further bodies into the Internet governance landscape. We can definitely leverage on what already exists and leverage on the long-term expertise of spaces like ICANN and the IGF and many others, IETF, just to quote a few. But at the same time, there is a need for improving coordination between all of those existing bodies.

A second step that we recommend is to avoid siloed public policy discussions. And then also pushing for a more inclusive debate like when we talk about multistakeholder, we mean everyone and not just siloed debates or not just member states. Obviously, they have their mandates to discuss some of these topics in certain fora. But they should be liaising with almost all stakeholders and driving from our expertise.

The last one is that the existing global Internet governance forums must engage more closely with national governments, just so we have

a more streamlined conversation and kind of a better relationship. Then we can go to the technical layer debate. Next slide, please.

Oh, no. Internet user, sorry. About the Internet user, that was the most complicated bit because it did have a lot of quite open questions, as I was saying. We've ended up defining it as the phenomenon by which different end users can when trying to perform the same action online are presented with different content options on interfaces. This can happen because of the use of different client side instruments, different server side platforms, languages, ways of expression, but also some level of intervention from governments or different parts of the world. It's also important to note that this is the result of per user customizations applied by services like we do acknowledge that the Internet or the Internet experience in a lot of platforms have been built based on this possibility of customization, but also make a point about it not always being positive. Just on this point, when fragmentation is forced upon the end user by other parties, or when it hampers the communication among end users and their ability to access content and services, what we say is that it can deny the advantages and freedoms that the Internet is supposed to offer. So here is it's more like a reinforcement of the basic characteristics of the Internet of the Web. And whenever there is some sort of intervention, we are the ones being deprived of fully leveraging on its potential and so on. We can go to the next slide.

Then for this part, we basically have five recommendations for the user experience. It's basically principles. We talk about the quality principles, so every user needs to be able to access what was intended to be made publicly available in the same manner. So regardless of

being in Lebanon or in Brussels, we should all be able to have access to the same level of content.

We talk about the enhancements principle as well. So measures to enhance the user experience by making it more relevant, meaningful, understandable, secure, and so on. All of these measures should not be considered as bad fragmentation, but they need to have some sort of an exercise, an understanding what could be the effect on the uniformity of access to the Internet.

Then we go into the impact assessment principle. Again, any measure that's rolled out, whether by governments, private sector, or technical actors, that might have an effect on users, they should be evaluated prior to its introduction or implementation to ensure that it's basically proportionate, that it addresses harm or that it's aimed towards respecting human rights.

We also talk about harmonization and about fragmentation that might be driven by diverse national regulatory or legislative approaches to protect human rights or legitimate interests, and could be avoided through cooperation and multilateral instruments.

The last principle, in that sense, is the free choice. In here, we basically make a point on no user of the Internet should be coerced or incentivized to use a particular platform technology or service provider, especially in order to provide access to content and resources. Everyone should be able to choose the applications, instruments, and services they use, and should not be subjected to unfair conditions. So as you guys can see the user experience one is basically addressing debates around human rights, fairness,

distribution of services and resources. Then we can go to the last basket in the next slide.

Technical infrastructure fragmentation. Here, it's really where we're discussing where we started the panel with ICANN's intervention on fragmentation. When it comes to the technical layer it's not a clearly defined term. And trying to arrive at a definition needs further exploration. Like here for us, the Internet is definitely made up of technical infrastructure that collectively interoperates at a global scale. It's reachable and can be transported over technology. So in that sense, we just reinforced that the technical infrastructure relates to a range of challenges to this interoperability at the technical transport layer. And that is what really makes the Internet work and upon which applications and services are reliant. We can go to the next slide.

Then we go to the last part of recommendations. That is what can we do to avoid fragmentation of the Internet technical infrastructure? Our take on this one was to recognize that there are critical properties of the Internet/public core that can and should require multistakeholder protection, also being able to roll out some measurements to monitor the extent and nature of different types of technical fragmentation. Third point is critically assess and avoid technical proposals which reduce interoperability or otherwise will take the Internet away from some of its properties and design principles. And last but not least, protect the multistakeholder approach. We can go to the next slide.

I'm almost wrapping as well, because I know I spoke a lot. But just to say that you probably heard a lot of me like saying multistakeholder

everywhere, but really it was part of the PNIF assessment last year that it was really a once in a lifetime, perhaps an inflection point, that the multistakeholder model was under threat. And we really thought it was a good political statement to put out that we needed to protect this model of participation and then in the way we do things not just in ICANN but at the IGF as well. So it does drive a lot more recommendations in that sense. But we do believe it was an important piece of information.

Last but not least, this is a work that's continuing this year. We just got the confirmation that the Policy Network on Internet Fragmentation will have its third year as an intersessional work. And our goal for 2024 is to work on the implementation of the recommendations I just highlighted to you all. So if anyone would like to join or be part of the conversation, we definitely need a lot more ccs in this debate. There might be a lot of technical aspects we might be forgetting on this discussion. So ccNSO is more than welcome to join, and I'm very happy to be on this session. Thanks a lot.

ANNALIESE WILLIAMS: Thank you, Bruna. Thanks for joining us. I think the Policy Network is an excellent example of the good work that the IGF is doing in between its annual conferences. We might come back to questions at the end if there is time. But I did want to just note that the report has been put into the chat. Thank you, Kim, for putting that in. So if you wanted to have a look at the 2023 Policy Network on Internet Fragmentation Report, you can click straight in there.

So we will move now to our member presentations. Our first presentation is from Molehe Wesi, the CEO of the .za Domain Name Authority. Go ahead.

Molehe Wesi: Thank you, Annaliese. Good morning to everyone and good afternoon and evening to those joining us online. Next slide, please.

Even though it seems like it's a long presentation, I tried to sort of collapse it into nine slides or even less. As introduced, I come from the .za ccTLD. I work for the Authority. I have to confess, Bruna and Elena stole my thunder. But really, I think that's the golden thread in terms of what we are going to discuss. Next slide, please.

By way of introduction, really, we are a statutory organization, meaning that we have a piece of legislation that brought us to be. Our core mandate is to raise public awareness and also ensure that the namespace is well-managed and administered. We also have the privilege of being the custodian of the Internet governance within the country. What's quite unique about us even though I said we are a regulator, we report to a government department but we also have members, and those members guide us in terms of policy direction. Also, of course, from time to time we get into a boxing match, which one quite enjoys a lot, because you can never have the same opinion about the same thing. So different opinions actually build one's perspective. Next slide, please.

This just summarizes from the Act, the mandates that one tried to explain. Next slide, please.

I'll just go straight into the core functions of .ZADNA and really talk about what Internet regulation enables. Therefore, themes there, which is market creation and market growth, competition enablement, protection of consumers, and also a stable and accessible .za namespace. What do I mean about it? We have to have policies that provide standardization and interoperability of our domain name space with other spaces. Furthermore, competition, because there's economic interest within the space and within, of course, the Internet as one tool for one to generate money, there has to be transparency and we have to build measures of antitrust to create a fair market for all which is accessible to multiple players.

Protection of consumers, which most of the time, as a regulator, you're sort of reduced to that. We also provide from a .za namespace perspective, intellectual property rights protection, establishing trust to a certain extent by ensuring that there's minimal domain name abuse cases within the space. One important aspect, those that are providing these, it's not us, it's those that are within the technical communities within the country, we provide technical skills to them from time to time. As a matter of fact, I believe the end of this month, we have an introductory technical DNS training for those that are within the space. Of course, we believe that if you are skilled, you're able to better protect the consumers that you're providing a service to.

Stable and accessible .za. It might sound like a duplication. However, yes, we do have standards within the space, and we have to ensure that there's adequate continuity and security. That's, of course, providing assurance, trust, and all the other aspects that I've mentioned. Next slide, please.

Unfortunately, as the previous speakers have mentioned with all the work that we do and many others, those that are similar with us or have common interest, we tend to lead to Internet fragmentation. For example, we have extra territorial laws, whereby everyone just believes that my law is much more superior than yours. And of course, we're talking about sovereignty. Of course, we have to respect that but there has to be a balance. But unfortunately, the unintended consequence of that is that they will lead to a fragmented Internet.

Differing standards and protocols. I think it has all expansively explained by Bruna and Elena as to what are these and what is currently to, which is a double-edged sword for us from an African perspective, but it has to be mentioned, digital sovereignty. I'm mentioning this is a double-edged sword because from an IGLC perspective, we have put it up there as one of the hot topics from an African perspective. But in the same breath, it could lead to Internet fragmentation, just to maybe spend a little bit more time on this. From Africa, you find that there is a consumerization mentality, whereby there is a lot of platforms, a lot of tech that is being pushed towards the continent and we consume, we like to have our own self-identity produce our own innovation, that it be consumed by our own people. I think that's the stance we are taking. Of course, we like to, really, in the same breath, protect the data of those citizens on the continent. Unfortunately, you cannot do that if you are engaging through platforms and means of global conglomerates.

National security and data localization linked to sovereignty. We're talking about interest of a state to protect its own citizens against any online hubs. I think that is quite self-explanatory. Moving on.

Contrary to the previous speakers, I'll show the bad side of One Internet, which is really the inverse of what I've just mentioned, which is reduced control over information. Why is this important? We're not talking about censoring here. We're talking about other players that have ill intent of harm, misconstruction of facts, misinformation, and so forth.

You have cultural identity challenges. One of the aspects that I mentioned there, you will see that a later stage, there's a new concept of cognitive warfare where, really, with the Internet, there is quite a substantial influence of national identity and national culture. And those effects we cannot run away from.

Economic disadvantage. Most of the time, those that are consumers have a tech that is provided through Internet technology become sort of steamrolled into taking decisions, either take it or leave it.

Security concerns. You have players that are outside the borders of any country that are actually pushing tech through the Internet. Of course, in some cases, this might expose your citizenry to harm, and especially in areas where there is very low digital skill and awareness, and so forth.

I will move on to what is it that we are doing from a South African perspective. For South Africa, we firmly believe that—well, flowing from our Constitution, I have to establish that there has to be the right of freedom of expression, equality and non-discrimination and privacy, and protection of privacy. Flowing from that clause or bill of rights within our Constitution, the Act that created .za Domain Name Authority came in to be, which is the Electronic Communications and

Transactions Act, which, of course, prevents censorship and promotes free flow of information. Of course, outlines data collection, storage and protection of privacy. These have subsequently been replaced by our own version of GDPR, which is called the Protection of Personal Information Act.

Last but not least, there has to be equal access of electronic communication and transactions to all South Africans and those that have a vested interest in the space. Just to draw everyone to the picture I believe it's on your left, well, how do we achieve this? We achieve this through a multistakeholder governance model. I think the previous speakers have spoken to that. More specifically, we believe in open and transparent policy formulation. We have a system that we call the socio-economic impact system which replaced another system called the regulatory impact analysis. The intent of this system is to really assess those that have a social and economic interest in any piece of law, they participate openly and all those comments, inputs are taken into consideration before any law is passed. In fact, any law will not be signed or regulation or any policy will not be signed if you don't provide a certificate validating that that process is taking place within the country.

Harmonization of standards and regulation. While, of course, we are not saying we are the best, but from a country perspective, there has been intent to drive and remove all red tape and ensure that any duplication is removed. In cases where there is no law, we rely on international law, and we do take counsel on best practices.

Targeted and proportionate regulation. Instead of just casting the net as wide as possible, we have regulation that speaks to specific issues within the country. What's quite important because of our historical past, we have a transformational agenda that simply implies that leave no one behind, ensuring that those that have been deprived of access are given the equitable access in terms of experience and also if they look towards there for livelihood also from that perspective of economic beneficiation.

I think, lastly, Elena touched on this one to talk about, is there really one Internet? I attempted perceived one Internet because of the geopolitical climate currently that we are engaged in. I went further to say—next slide, please. The issue of one Internet is far more utopic, considering the differing ideologies within the world. And this is not made any easy, considering that there's alternatives through the DNS that are emerging, Web 3.0, you're talking about the Metaverse, you're talking about blockchain technology, and so forth.

Economic and policy mistrust. We normally, as sovereign states, when we engage in one form or the other, they engage from a perspective, say, "Why would you do that?" rather than "How can we add value to whatever endeavor that you're trying to achieve?" And of course, we have spoken about digital sovereignty. One is also touched on securities, speaking up, of course, about cognitive warfare, where this is manipulation of the masses to achieve a goal which is not benefiting a specific group of individuals.

With that said, it goes without saying, even with this, the Internet shall remain interconnected, and I think that's what we need to strive for.

Maintaining at the technical level, there's interoperability. Ensuring that those that are within their specific countries are able to access services outside of their borders, because in one way or the other, that's how we expose our citizenry to other cultures and have different conversations. So that brings me to the end of my presentation. I think that was within time. Thank you.

ANNALIESE WILLIAMS: Thank you, Molehe. Are there any questions either in the room or in the Zoom Room for Molehe? I think I saw one down the back. Go ahead, please.

YANIRA ZOE FILOMENO VAZQUEZ: Hello.

My name is Zoe Filomeno. I am an ICANN79 Fellow. I will be speaking on my own behalf. Thank you so much talking about certain realities within the idea of not only cognitive warfare but also the fact of how the fragmentation is real. I do find it interesting in these situations where we don't want to talk on the humanistic aspects of the end user, especially when ICANN79 is taking place in the oldest colony of the world, Puerto Rico, and how modern situations with geopolitical—I guess you can say problems always are dealt with extremely clinical and not humanistic. So I would like to not only thank you, but ask you how do you find dealing with transparency of the real issues with the end users?

ANNALIESE WILLIAMS: We might take that one offline. And we can have a chat about that one later.

YANIRA ZOE FILOMENO VAZQUEZ: Thank you.

ANNALIESE WILLIAMS: Thank you for your comment. We do need to move on to our next speaker. We are a little bit over time. Again, if there is time at the end, we can come back to questions. But now I will introduce our next speaker, Demi Getschko, the chair of the Brazilian Network Information Center.

DEMI GETSCHKO: Thank you, Annaliese. Good morning to everybody. I will be making the presentation language that resembles English. So I count on your indulgence on that.

Anyway, we had three very good presentations before me and I have little space to do something behind all what occurred until now. But I've gone back to some fundamentals of the Internet. Like, for example, the Barlow's Declaration of Cyberspace Independence in '96. I'm not an activist, but just an Internet fan, an old one, but anyway. The idea of this brief presentation is more provocative than informative in some points. I could go in the same way that the other speakers did.

I aim the presentation on three main points. First of all, defending the single and global Internet, understanding that there'll be some confusion on the concept of that. We heard South Africa, for example, what we mean with a single and global Internet. In the second point, I will present some Brazilian specifics, how the Internet Steering Committee in Brazil deals with the issue. The Brazilian Steering Committee is not a regulatory board. They have no enforcement on the Internet, but it produces rules and good practices for the Brazilian Internet. And in some way, we have some good products from them. And in the third point of my presentation, I'll be very brief in presenting what I think the risks of language in defining Internet concepts. These risks which may allow malicious actors to expand what they mean beyond what seems to be normal.

So, here in the screen, we have a set of principles that the Brazilian Steering Committee did in 2009 and presented in Vilnius IGF in Lithuania. I flagged the principles that are more involved with our theme today. For example, of course, the first one is involved with what I'm trying to say today, freedom, privacy, and human rights. The second is democratic and collaborative governance. I understand the governance in the Internet is fragmented, but it seems that it has to be fragmented in some way. Of course, we have to have some points that are coordinated and collaborative. But of course, there are different issues in different countries that have to be respected. Next slide, please.

Okay. Of course, the third point, universality. Internet has been universal, become a tool for human and social development. And so diversity, of course, is the fourth topic. Innovation is important

because we are in favor, of course, the open innovation. You're free to do anything you want in the Internet. If it will survive or not, it depends on the users. As Joseph [Rego] said some time ago, the click is the vote of the users. If no one clicks in your application, probably it will be dying in short time. Next slide.

Okay. The sixth point is, of course, the focus, the focal point of our presentation, network neutrality. It stated in 2009 that filtering or traffic privileges must meet ethical and technical criteria. And we cannot allow discrimination or preferential treatment based in commercial, religious, or cultural factors.

The seventh, it's also important. The intermediaries are not liable of the content if we define what is intermediaries. The problem is, of course, don't kill the messenger is in place. It's important to keep this concept. But of course, some messages are more than messages. Of course, it has to be adopted accordingly.

The eighth is functionality, security, and stability. Okay, next slide.

Of course, standardization and the regulatory environment. We have quite light regulatory environment in Brazil. I think these 10 principles is responsible for keeping the Internet more or less sticking to the original principles of the network. As I said, I am old fan of the principles of the Internet, like Barlow said in the Declaration of Independence. Okay. Next slide, please.

This slide I borrowed from Steve Crocker. This is a real pioneer of the Internet. I think this hourglass shows what we are trying to say when I'm saying that we have to define what we mean by Internet. Here we

have the complete environment of the digital system. We have the lower level, the telecoms are involved. Of course, it's a regulated environment, very specific. This is an old slide. We have just 3g here. We have much more advanced in this area. But this is not the Internet. This is the way we reach the Internet. Then we have the waist of the hourglass. It's the IP Internet Protocol. And going up from the IP, while we're really inside the Internet. This arises my question. At what level stops the Internet and begins the applications over the Internet? I will try to say that these white levels aren't really Internet, and what is upper is applications. Of course, the innovation is open, you have to be open for innovations. The click stream is your vote, as I said. But we will not confuse the upper levels with the Internet. So, when we say Internet is fragmented, what we will try to say it's important to define the word Internet in the first point, and then we can define if it is fragmented or not. Next slide, please.

Okay. This is the same, as I was just explaining the diversity of transmissions, the multiplicity of users, and the upper levels with applications. Next slide, please.

Okay. Of course, the white levels here are the work of the IETF, Internet Engineering Task Force. In the upper levels are open to anyone that wants to make applications on the Internet. I think if you have some problem with one or another application, it's not really a problem with the Internet. A very common example, we are all in favor of electricity, but maybe are not in favor of an electrical source that can destroy the forest. So the one thing is the applications of the electricity or there is the electricity itself. I think we have to agree that

as a technology Internet, they have to be kept it as it is today for the benefit of all of us. Next slide, please.

So this is also a slide borrowed from Steve Crocker's presentation. I want to stress these three open at the end of this slide, we have an open protocol stack with permissionless innovation. We have an open standard process, IETF as I said, and we have an open free documentation, the RFCs, as all of you know. Next slide, please.

So when we're talking about fragmentation of the Internet, in my strict explanation, maybe we are doing with fragmentation in DNS, it was very bad to have two routes or alternative routes or something like that, this really deals to Internet fragment. We can have fragmentation in the protocols. If we have a new IP, I put some examples here for alternate name systems or alternate IP proposals. We have to be careful with that. Of course, we can have interconnected things. But I think this is really a danger of fragmentation if you go forward in DNS or IP fragmentation. Next slide, please.

Finally, dealing with my third issue that technology, what is the Internet, when Internet ends and application begins? It's important to define this, because when we talk about fragmentation, what we are meaning on this? I'm really not much worried if some countries, again, some kind of application or some kind of community in the Internet, it's bad, but it's not as bad as if, again, the protocols that give you way to reach that application. You can go there and not use it, but you have to have the way to go there. Then maybe we need a taxonomy and defined semantics, and semantics to avoid mistakes that are difficult to correct later. Next one, please.

So the Internet has many layers. It's a very complex system. And we have to define what we are trying to say with protocols with the Internet, with applications. Because, of course, Internet may encompass everything's connected, but maybe we have to separate what is the underlying infrastructure and what is these applications over there. Next.

Okay. We are finishing here. Just to go a little bit in direction of the intermediaries. When we have applications you have to try to have a taxonomy on them. Because the application can be private or open, the application can collect data or not, the application can have users that houses risks or harms associated with it. This is different for the protocols, the Internet infrastructure. Next one.

So this is from Steve Crocker also. Technology improves, human nature doesn't. And we have to have good luck. Next one, please.

Okay. This is an ending phrase from Chesterton. It's an old writer. "We did a lot of many clever things. Maybe the next task is to learn not to do them." Thank you.

ANNALIESE WILLIAMS: Thank you, Demi. Do we have any questions for Demi? I'm not seeing any, so we may have time at the end if you do think of one. But for now we will move on to our final speaker, Barrack Otieno, the general manager of the African Top-Level Domain Organization. Thank you.

BARRACK OTIENO: Thank you very much. Next slide. All right. After the interesting presentations that have been made, I promise to be very brief. But I'll also share some reflections from a regional perspective on some of the issues that my esteemed colleagues have touched on. My presentation will focus on developing a common understanding of Internet fragmentation, some of the factors that contribute to Internet fragmentation. I'll give a regional perspective and then I'll conclude. Next slide.

According to the Internet Society, any policy or decision that undermines the open global interoperable nature of the Internet, the very attributes that have empowered people everywhere to benefit from it contributes to fragmenting the Internet. And I think this has been very well elaborated by the previous presenter. Next slide.

Some of the factors that contribute to Internet fragmentation, again, I refer to an issue paper developed by the Internet Society and several perspectives that have been heavily presented by the previous speakers are emerging technologies. We are seeing a lot of securitization of the Internet. Yesterday, sitting and listening to Tech Day, there are a lot of apps that are being developed that look at the security of the DNS, DNSSEC, and so on. And the questions that kept coming up on the floor yesterday is "Why do we need that particular application?" I think this is also a relevant question, even as we discuss Internet fragmentation. We are seeing more walled gardens, basically, Intranets, an increasing desire for digital sovereignty by state actors. I think Molehe has touched on this subject very well. There's the subject of Internet shutdowns that is very prevalent in the Global South and in other regions of the world. There's the issue of limiting global access,

basically, geopolitics. The issue of national Internet gateways, regulating business relationships and regulation of DNS infrastructure. In my country, currently, there's a discussion around reviewing the country's laws with respect to connectivity and communication. There's a lot of conversation around Internet gateways. Never mind whether it is an informed conversation. Next slide.

Just sharing our regional perspective, and I think this also applies to other regions. I'll refer to data by Access Now, which most of you might be aware of the work that it is doing. I'll go back to 2022. In 2022 alone, governments in seven African countries shut down the Internet nine times. African political leaders have increasingly shown willingness to shut down Internet during major political events. And I believe this is something that is also increasingly becoming fashionable in other regions. In 2024, 17 African countries with a combined population of around 310 million people, of which 58% or over 180 million are eligible to vote will have political events. Of course, I can also refer to it as elections. Growing pushback from non-state actors has barely deterred governments from employing Internet shutdowns. In 2022 alone, it is estimated that Africa lost $261 million (USD) to Internet shutdowns. The shutdowns lasted for a total of 9,532 hours and affected 132.2 million people. Again, according to another school of thought, techpoint.africa, Sub-Saharan Africa lost 1.74 billion in 2023 due to government-induced Internet shutdowns. Sub-Saharan Africa came in second after Europe, with losses spread over 30,785 hours and affecting 84.5 million Internet users. Bringing it closer home, 42% of ccTLDs based on a desk study that we did two years ago at AFTLD are under oversight from various government agencies. Could be

regulatory bodies or some form of organization that has oversight from government. This is an existential threat that could contribute to fragmentation. Next slide.

As I conclude in this slide, Internet shutdowns, and by extension, fragmentation are inherently disproportionate and unjustified and cannot be justified under international human rights law. This is according to the United Nations. What can ccTLDs do in light of this? ccTLDs can and should contribute in pushing back against Internet fragmentation. This can be achieved through various means. I have given a few proposals which are not exhaustive. One could be championing the multistakeholder model of Internet governance. In the past, regional organizations, that is, AFTLD, CENTR, APTLD, and LACTLD, jointly organized sessions at the Global Internet Governance Forum to bring more awareness on the issues that we've discussed in this session. At some point, we went slow on these sessions, presumably because the initial objectives had been attained. But I think as we start discussing this conversation of Internet fragmentation, it might be of interest that we renew this conversation, especially at the global IGF or other fora that are provided. Again, ccTLDs can embrace multistakeholderism in their governance to minimize state capture. Regional organizations have in the past and more recently also developed issue papers that could guide state and state actors on issues such as this. I think most recently, CENTR has developed an issue paper around this, which might be of interest to all of us to have a look at.

ccTLDs and regional organizations can and should contribute to policy development processes at national level. They can be at the forefront

of capacity building and capacity development of state and non-state actors through schools of Internet governance at national and regional level. AFTLD has in the past contributed to fora such as the Africa School of Internet Governance. ICANN has in the past in the region organized sessions for law enforcement officers, where we've also had an opportunity to come and speak to them so that they can understand the intricacies of the domain name system.

ccTLDs and regional organizations should conduct research and publish issue papers and policy briefs that highlight the factors that contribute to Internet fragmentation and the economic impact of the same within their jurisdictions. This is an interesting subject, but unless we bring it home with respect to how it actually impacts economies in our countries and in our regions, we are likely to see a lot of malfeasance in that area conducted by state or, in some cases, non-state actors who might not know the impact of some of the actions or decisions that they are making.

Finally, ccTLDs and regional organizations should convene thought leadership sessions such as this that encourage discussions on factors that contribute to Internet fragmentation within their jurisdiction. With that, I come to the end of my presentation and save you more time. Thank you.

ANNALIESE WILLIAMS: Thank you, Barrack. I think we have made up some time along the way. So we do have time for questions, if there are any, for Barrack. Yes, please.

JAVIER RUA: Thank you very much. Javier Rua for the record. Great presentations, everyone. A question for Barrack. What is your specific source for that UN statement? You cite the UN on the notion that the UN has expressed something on Internet shutdowns within the narrative of fragmentation as it being not acceptable or something to that effect. Thank you.

BARRACK OTIENO: I was reading an UNCTAD report. Sorry, I didn't cite it properly.

JAVIER RUA: If there's a link or something to that report, I'd love to have it. Thank you.

ANNALIESE WILLIAMS: Any other questions? I don't see any in the Zoom either. Are there any questions for any of our other speakers that anyone didn't get an opportunity to ask before? I'm seeing a question down the back, and then I'll come to the middle.

BYRON HOLLAND: Byron Holland for the record. Thanks to all the speakers. Barrack, I thought your presentation was quite eye-opening. The statistics that you presented were remarkable, to say the least. Thank you for sharing that and highlighting it. It's certainly, I think, an eye-opener for all of us who run parts of this network of networks to see how it's

being treated in your region. I'm wondering, you made your observations and you talked about some of the conclusions and recommendations. As we head into the WSIS + 20 environment over the next 18 to 24 months, I'm wondering if your regional organization is thinking about that and how might the issues that you raise feed into that process and your thinking and actions by your regional organization and/or any of the individual countries within the organization.

BARRACK OTIENO: Thanks, Byron. As I indicated in my presentation, majority of the Internet governance convenings across the African continent are largely backstopped or supported by country-code top-level domain registries. At AFTLD, I would say, one, we are active within the I-star processes, where to the extent possible, we are giving our contribution. Again, we just had our typical regional top-level domain organizations meeting here, and that's something that featured in our conversation. Although we are not very clear if we should take a more substantive position, but I believe going forward, we should be able to reach a consensus on the input that we should give. But in Africa, I would say that yes, we are active in the different processes that gear towards the next phases of the WSIS process. And at local and national level, most of the ccTLDs are the ones convening the Internet governance conversation or supporting the convening. Actually, my presentation was a call to action because when we are absent as ccTLDs from these particular convenings, then discussions are made that impact how we operate. Decisions are made regarding the policy frameworks within which the ccTLDs operate. And you find that by the

time we are coming back to solve the problems, it's too late and the governments are gone. The issue is governments also like humans, they keep changing. You may find one supportive government, one visionary government, then you find another one that is rogue. By the time we fix the mess, then it's too late. Thank you.

ANNALIESE WILLIAMS: Thanks, Barrack. And thanks for the question. Was there another question? Yes, go ahead.

IGNACIO SANCHEZ: Thank you. My name is Ignacio Sanchez. I'm an ICANN79 Fellow from Chile. My question is, I think, most directly to the PNIF or, of course, if any other speaker has an answer, I would appreciate it a lot. So my question is regarding Internet fragmentation, do the people that is in this group have direct communication or outreaching, for example, to international organizations such as the World Trade Organization, for example, in the context on the joint initiative on electronic commerce that is taking place? Having in mind that regional actions have been addressing Internet fragmentation in trade aspects. For example, the Pacific Alliance on Free Trade Agreements or the Digital Economy Partnership Agreement as the first experiences in binding agreements, inserting Internet principles such as free standards and other stuff regarding fragmentation. So that would be my question. Do you have outreaching approaches to international organizations more than directly to a country? Thank you so much.

ANNALIESE WILLIAMS: Thank you. I think that was a question to Bruna if you are still there. I think the question is, is there outreach between the policy network on Internet fragmentation to other organizations? Do we have Bruna?

BRUNA MARTINS DOS SANTOS: Yes, I'm around. Hope you can still hear me, Annaliese.

ANNALIESE WILLIAMS: I can. Go ahead.

BRUNA MARTINS DOS SANTOS: Amazing. Directly on trade, we don't have so far anyone engaging from this perspective. But over the last two years in the PNIF, we had engagement from a couple of governmental representatives. We also had engagement of ISOC as well, a couple of MFAs like Brazil, United Kingdom as well. In the terms of the INGOs, the one that has engaged the most with us so far was UNESCO. So there's obviously space for improving those engagements. And if you have any suggestions of names the PNIF could reach out to, it's more than welcome. But replying directly to the question when it comes to trade, not necessarily. That's it.

IGNACIO SANCHEZ: Thank you.

ANNALIESE WILLIAMS: Thanks, Bruna. Yes, please.

NICK WENBAN-SMITH: Hi. It's Nick Wenban-Smith from Nominet for the Record. I've found this whole session extremely thought-provoking and interesting. I thought the topics and the presentations are all really nicely constructed. So big thank you for everybody to put the effort on. I know it takes a lot of work and preparation.

I suppose what I was thinking about and my question is really for the panel around when you talk about fragmentation, it means different things depending on the context and the audience and the technical identifiers versus the content providers and platforms. Certainly, if you look at, say, the regulatory position in the EU or the United Kingdom, there's a lot of direct legislative action around, say, things like online harms, which is done within the national context or the regional context. So what is harmful in the United Kingdom is done through regulators and platform regulation, whether it's tackling misinformation or extremism content or promotion of suicide and self-harm and all these sorts of things. That's a completely different type of thing for when I think about Internet fragmentation. I think it's completely normal and natural that individual parts of the globe, which are hugely diverse in terms of the legal and cultural backgrounds and environments that they are in, that seems completely fine to have that sort of fragmentation.

I suppose what I'm most concerned about is on the technical layer. For example, those of us who are a ccTLD, we will have a very close interest in, say, the IANA route. And that cannot be fragmented

because then that does break everything. So I'm interested in where, say for example, governments supply a local technical shutdown of the whole Internet. Why is it that they feel that there aren't other remedies? For example, in the UK, some of the ISPs sometimes have accidental shutdowns or technical failures, but there's no blanket top-down shutdown in that sense. It's done through more nuanced approach if there's undesirable content, which is illegal in that jurisdiction, then it's tackled through completely different means. I'm flabbergasted that governments basically blanket shutdown the Internet. Is that out of frustration or there are no other remedies for content which is criminal on those jurisdictions? It's something I'm quite profoundly disturbed by, if I'm honest. I'll be interested if there's any observations around this area. Is it just something that we just need to improve education or other initiatives which can avoid these terrible instances?

ANNALIESE WILLIAMS: Was that a specific question to one of our speakers, Nick?

NICK WENBAN-SMITH: It's not a specific question. It's sort of a monologue rant.

ANNALIESE WILLIAMS: In that case, I would just invite any of our speakers whether anybody does want to address that.

BARRACK OTIENO: Thanks, Nick. Maybe I will attempt and respond to your question the best way I've had it and I'll share an experience. Three years ago, I was the chair of the Multistakeholder Advisory Group of the Kenya Internet Governance Forum. It happened during an election year. I recall having a conversation about almost a similar presentation. There was a government agency that was charged with national cohesion. We came to a point where we needed a presidential rerun in the election. Things were really hot offline and online. They came to us and said, "Wait, you guys gave us a policy brief and told us not to shut down the Internet. What are we supposed to do? You can see how the situation is."

We formed a think-tank and explored a number of ways in which we could deal with the situation. To cut the long story short, we had to use bloggers for alternative communications. And the decision was made there and then not to interfere with the Internet infrastructure. That's what I think opportunities such as the one that we are having to discuss present us when decision-makers find themselves in a situation where do they switch off for the public good or do they retain it. And sometimes they really don't know what to do for lack of an opportunity such as the ones that we have. That's what I would use as my response. Thank you.

ANNALIESE WILLIAMS: Thanks, Barrack. I see Bruna also wants to respond to this question. We are almost at the end of time, Bruna. So I will give you the floor quickly.

BRUNA MARTINS DOS SANTOS: I'll be very brief. Thanks. Thanks, Nick, for the question as well. Just to say that on the PNIF Report, we have also flagged other types of intervention on access that could also be just as concerning in terms of the lack of proportionality or lack of good justification for interfering in access to certain types of contents or discussions. If you go beyond just a shutdown conversation, there was also certain content takedowns and blocking orders that could possibly have a global effect because sometimes it can demand that a certain content is made unavailable globally and not just locally because of VPNs. Also, this said digital protectionism via lack of competition and user choice in digital markets, that basically means that some states might be more prone into favoring national and state-owned services that might lack some technical aspects or characteristics and that might also harm users' privacy or safety online. These are just two of the examples.

Just to say this is a year where we're having 70 elections worldwide, more than two billion people going voting, and we're seeing a more and more growing presence of Internet shutdowns. Right now, Bangladesh is going through one. I just posted on the chat where the government is not only discussing a blanket blocking on social media but also VPNs. So it's definitely just adding a plus one on how concerning the moment and the issues are, but hopefully we'll manage to set out an interesting enough mapping of those things. Thanks.

ANNALIESE WILLIAMS: Thank you, Bruna. It's been a very thought-provoking session. I think we are certainly in very complex times at the moment. And there are some challenges with balancing national interests and cultural interests with the global Internet. But I think, for me, the key takeaway from the session today is that ccTLDs do have an important role to play in thought leadership in these spaces.

I would like to thank all of our speakers. It has been a series of really interesting presentations. Please join me in thanking Elena, Bruna, Molehe, Demi, and Barrack. And also, of course, my colleagues on the small team who organized this and our support staff. Thank you, Joke. It was a lot of late nights and early mornings for you on this one in particular. So thank you. Thank you everyone. The meeting is closed. Thanks all.

[END OF TRANSCRIPION]