Accessible Europe: ICT 4 All session 3: State of Web Accessibility: Realities and Good Practices
12/14/2023

>> Hello, everyone. Welcome. I just wanted to make a quick announcement. We will be starting our sessions ten minutes later than initially planned. We still have some participants coming in. We want to accommodate them as well. Just a 10-minute -- let's say -- yeah. Delay.
>> Hello. May I ask everyone to get seated please? Thank you.
Okay. Good morning, esteemed participants and guests. It is my pleasure to welcome you to the second day of Accessible Europe: ICT 4 All. Just as a recap, we began with a pre-forum workshop lead by the senior coordinator at ITU with the valuable contributions of European Commission. We first explored the fundamentals of ICT Accessibility together. We established the focus for our forum. We were honored with the insightful addresses of many leaders in the field. We had the special addresses from ITU and Commissioner Dalli. Then we had the keynote addresses here on sight for her excellency, Maria Gonzalez, Secretary of State in Spain, and her excellency Maria Martinez, Secretary of State of Social Rights in Spain. We also had the opening remarks from head of IT Europe. And accessibility animation director, and also the director of Accessible ITU and we had European Disability Forum here with us. We first delved into the European regulatory landscape together for our first session. This was followed by special message from Mr. Tawfik Jelassi. Then we had a special UN session with many UN entities present here. Finally the culminated with 11 companies, and awarded the winner and running up of the pitching competition. Once again I would like to congratulate the winners. This is how it went yesterday. As we start today's program, we really hope that we carry forward the momentum, insights, and inspirations from yesterday. We just continue this collective to create a digital inclusive society in Europe. Welcome to day two of the forum. Welcome to the day two of the forum. Now we have the third session of our forum which will be moduated by me. Please let me change my spot. I will be introducing and inviting our speakers to the stage one by one. I would like to first of all have Mr. Guillermo Rodriguez here. Dr. Eric Velleman. Mr. Daniel Montalvo. And Mr. Stein Erik Skotkjerra. We have one joining remotely.
>> ECMEL AYSU SÜRMEN: Okay. I think we're good. Distinguished participants and guests, welcome to the Session 3: State of Web Accessibility: Realities and Good Practices. I'm Ecmel Srmen. It is an absolute honor to moderate the session. Today we will examine the present state of web accessibility, addressing both the challenges and successes that shape this vital area. We have the very -- we have a wealth -- speakers bring a wealth of knowledge here today. Let me first introduce you to our distinguished panel. First of all we have Mr. Guillermo Rodriguez from the Government of Spain respecting accessibility. He has a double bachelor degrees in computer science and mathematics and masters in data science. We leads the area of web sites, design, and accessibility in the general accessibility in the government of Spain. We also have Susanna Laurin joining us remotely, as you can see. She's the chief research and innovation officer at Funka, and also at the representative to the EU for the global initiative for inclusive ICTs. She's bringing over 20 years of experience, digitalization, insolution, and eGovernment. Next up we have Dr. Eric Velleman here. Welcome. He's a professor of inclusive digital design and engineering at HAN University of applies sciences. He's also a founder of the accessibility foundation in the Netherlands. He's also innovation expert at the Institute for

the Blind and Visually Impaired. Then we have Mr. Daniel Montalvo. He's an accessibility specialist at the worldwide consortium. He is enrolled in editing on the accessibility and supporting various groups and task forces. Last but not least, Mr. Stein Erik Skotkjerra joining us here. He's a certified web accessibility specialist. He has over 20 years of experience in ICT accessibility from dual technologies. As you can see, the session promises to be a deep dive into the realities of web accessibility today with the esteemed speakers bring so much knowledge. So I would like to leave the floor to them. First of all, we would like to start a first round of questions. To each one of them. I'll start with Mr. Guillermo Rodriguez. With the Spanish Observatory on Web Accessibility, can you share your insight into how the observatory's methodologies and what lessons can be applicable across Europe? Thank you.
>> GUILLERMO RODRIGUEZ: Thank you, Ecmel. First of all, thank you for the opportunity to participate in the event. I recognize this is the first time I am going to participate in this kind of webinar as a speaker. Sorry in advance, if I make some mistakes. The web accessibility observatory monitors the state of the public sector. We prepare a percent to the European Union. One of our main objectives is to have organizations to improve accessibility and comply with European regulation. We have some tools for the organizations. We have tools to automatically check the accessibility of the web site. This is one of our main assets. With this tool, we check more than 50-year requirement. We also generate a report with the location. With the suggestion of how to solve them. We can analyze the web site with Europe. And we had got a tool to generate the facility declaration and a tool to automatically check that an accessibility web site has got the facility declaration and the current steps. We are continually trying to improve our tools. We are going to put into production other tools next month. We want to be able to -- we're going to be able to use our accessibility checker. Make them share to you, especially for these -- for these web sites that are not on the Internet. We want to be able to receive automatically requests. These facility tool is provided for public sector. But we have the project open on Gif Hub for everybody. We want to improve the mechanisms that you tool in the tool. We are going to generate the course from the part. And check the facility requirement, because the first part is more specifically for Spain and equality of organizations. It can be useful for everybody. We want to increase the capabilities of our accessibility checker, including the possibility to analyze PDF documents. It is not only the content of the web site will be checked, but also the document. With this measure, we will going to increase the accuracy of the estimation. I think that there are many initiatives.
>> ECMEL AYSU SÜRMEN: Thank you very much. We started the session with a concrete, good practice example from Spain. Now I would like to go more into the policy and legislation area. As I would like to turn to Ms. Susanna Laurin next who is joining us remotely. Susanna, can you hear us? Can you confirm?
>> SUSANNA LAURIN: Yes.
>> ECMEL AYSU SÜRMEN: Perfect. Welcome. I just wanted to ask you so given your extensive work in the EU policy in legislation on accessibility, I just wanted to know how do you currently evaluate the alignment of these policies, especially with regards to the evolving web accessibility needs of diverse user groups. If you have any strategies that you would suggest for enhancing the implementation and uniform application across Europe, it would be much appreciated. Thank you.
>> SUSANNA LAURIN: Thank you. Thank you for making sure I can do my contribution online. I'm sorry I couldn't be with you today. So let me first start with what we heard from the observatory in Spain. I think it is extremely

important to understand that the monitoring methodology used in all of the member states are built up on two different parts. There's the simplified method to use the automatic tool to monitor. That can only monitor non-compliance. You can find things that are not working. Within the automatic tool and the simplified method, you can never say that something is actually accessible. To do that, you need to check all of the requirements. There are no tools in the world that can do that today. Also there's a need for manual evaluation. That's why we have the in-depth evaluation as well. That's how the web accessibility directive monitoring methodology is set up. Myself and Eric Velleman and other experts created that. We know it very much in depth. It is extremely important not to mix the two and believe that automatic tool can actually check what is accessible, because that's not what they do. Just to clarify that, first of all. Otherwise --
>> GUILLERMO RODRIGUEZ: Sorry. Sorry. One question. I focused my presentation on automatic reviews, but obviously we made manual reports.
All of the organizations make manual reports.
>> ECMEL AYSU SÜRMEN: Okay. Thank you. Let's not answer questions from the contributions. Thank you. We can do it afterwards. Thank you. Please, Ms. Laurin.
>> SUSANNA LAURIN: Yes. When we did the review of the implementation of the accessibility within the success of the implementation in the different member states, we found many good practices. For me very positively. I've been working with the transposition of the latest legislation. We had quite a lot of pushback in the early days from the member states. But when the monitoring agencies have started the work, we've seen a lot of positive effects. Obviously, in both the public sector and monitoring agencies are generally very positive. There are things that can be improved and so on. But really the good thing is that most of the member states are focusing not so much on the monitoring, but rather supporting. Facilitating, training, and making sure that the public sector bodies that are in scope or that have the chance of being evaluated or monitored that they get the support they need. So that it is not just the police coming and saying, hey, you are making mistakes here. Rather saying look what we found. Here's how you can solve it. Having the approach, I think that's really the best practice across Europe. Then there are many tools and good ways of doing this. But your question was if the policies are meeting the requirements for the actual users. Then I would say, unfortunately, no. Not yet. That has to do with mostly two things. The standards, and I'm also doing standards. I'm not -- I believe standards are ebbing dreamily important. We need them and so on. The current standards that we have the technical requirements mostly focusing on people with physical disabilities and technical parts. It means how the assistive technology works together with the web site. Which is extremely important. Really it is the baseline. Everyone needs to solve that. But there are at least two-thirds or so of the user needs that we don't control for that extent. Those are mainly soft recommendations. They are not part of the legislation. That, I think, is something that needs to be improved in the future. I hope that in the current update of the standards, the act as performance for the legislation that we will be able to sneak in some requirements that make this more useful for the broader scope. Standards continues to be updated. Also I think it is a problem with -- it has to be this way. We get new assistive technologies. The user is changing very quickly. Of course, standards, policies, regulations, they do not keep up with this development. We will always be as policymakers and standard development organizations, we will always be a little bit behind, I think, or sometimes a lot behind. But everyone is doing their best to make sure that we get to the

point where the technology really supports as many users as possible. Another thing that I think is really something that needs to be improved, not only when it comes to the implementation of the web accessibility directive, but in general when it comes to accessibility work is that we need to involve the actual users much more. We need to be able to involve users with disabilities in standardization and also in monitoring and in testing and I hope that more and more people with disabilities will make their voices heard. Because there's a really good right in the web accessibility directive for providing feedback. Which is, of course, golden gifts. If the public sector body web site responsible for the web site or web site owner if they get real actual feedback from real users. That's so much more valuable than what any technical expert can provide in the boring report. So involving the users in every step of the way and, of course, in development and design and so on. That's extremely important. We see, also, that's one of the biggest gaps in how the implementation of the directive is happening across the board in the European member states. That's what I'm really hoping for in the future. We in standardization are trying our best to make sure the standardization processes and methods are as accessible as possible. I also want to make sure that everyone knows maybe in the audience we only have standardization experts. Then it is not an issue. But this time around when we update the EON13549, which is the European standard that's act as performance for the web accessibility directive and also when it enters into force in 2025, this time we have a much more transparent process. Even if you are not involved in standardization yet, which I, of course, hope that you are and will continue to be. Then there's still a chance to make comments and follow the work and give up that ETSI has provided. If you have views on how the standard can be improved, the contributions from everyone is most welcome. It is also easier now to understand how the process of this work is happening. Because we have this open forum for discussions around the requirements.
Thank you.
>> ECMEL AYSU SÜRMEN: Thank you very much for the great overview. The session is titled state of accessibility. Ms. Laurin has provided what is currently at stake and where there's room for improvement. It is much appreciated. Now I would like to return to Mr. Daniel Montalvo. I would like to just go -- okay. We have two very, very -- let's say hot topic discussions later during the day. We're going to be looking at AI and metaverse and so on. I would just like to start a bit on the theme with the -- basically just having the link between the emerging technologies and how web accessibility is keeping up. I would like to ask Mr. Daniel Montalvo at the worldwide web consortium is how are you using AI and attractive media into global and web accessibility standards and how do you see the global standards supporting complimenting the regional accessibility efforts?
>> ERIC VELLEMAN Thank you very much for more question. It is a pleasure to be with you all. First thing we need to do is gather and make sure there's a solid basis for us to be able to include the requirements in the standards. Of course, artificial intelligence, we are doing that actively. We have some documents that collect user requirements in the context of augmented reality and multimedia and -- those requirements are now a little bit -- probably old now. They were started in 2019. But, of course, we could update those in the future. There's also active promotion of research from within W3C in addition to artificial intelligence. We have had two symposium or related to AI and accessibility. The last of those was actually more focused on evaluation, how artificial intelligence can influence accessibility evaluation. At this point, I would like to bring up a question as to what actually do we mean by AI? AI

can be so many things. AI to evaluate the web site better than we're doing now with our tools. It may or may not be possible. But AI may also be used as an assistive technology. So we could have AI that's able to query the information on the web site. Based on people's questions or people's input, they can give you the information you are looking for. They can give you summaries. Basically there's all sorts of things that respond by the name. We are actively tracking those. As to how this is going to be part of the standards, this is -- I'm sorry to say this is premature at the moment to say. We do anticipate that probably the performance models of future standards may be influenced by what artificial intelligence can do in terms of evaluation and how they can express the result and outcomes of the evaluation. As you probably already know, it is based on whether you pass or fail. The criteria. There's been, of course, comments that this is unfair in some situations. I completely get that. So maybe in the prospects there's and probably should be another way or different way to see which we can actually express the accessibility evaluation outcomes. That's pretty much what, I think, for the first question is good. Let me just remind in other efforts that we're doing in W3C could be potentially affected by artificial intelligence and for which artificial intelligence may end up being part of. There's -- in W3C under the accessibility guidelines working group, we have the accessibility performance testing. This is basically making sure we can reduce as much as possible the ambiguity and the test results disparity between the different tools and methodologies. I do see we're working already on that. The ways in which we can use artificial intelligence to make sure that we first expand our current set of -- test cases. So that we have probably, of course, a broader range of task case, and also, you know, more realistic test cases that come probably from real web sites that then can be used for actually making sure they adhere to the rules -- the rules format. So, yeah, I would encourage people to keep an eye on that. It is a theory that we can all share. Hopefully there's a follow-up with the organizers. We will be sending URLs for you to follow the work of the W3C is doing in that regard. But we're basically on that. Yeah. Artificial intelligence at the moment -- we're not quite sure, first of all, how this can be so fast and quick the way some things are moving. You know, from the standards of perspective where everything happens at a long pace. It is difficult to predict at the moment. But we are definitely on top of that. And we're actively monitoring the results.

>> Thank you very much. First of all, I would like to say Secondly it is complex, because you are not always in control of your digital solutions. You may procure something third party from another vendor. You may be using off of the shelf products where you, at least to little extent, can improve the accessibility. We need to work on really a lot of different levels. It is a lot of advocacy work and a lot of inspirational work. And looking at some solutions for this, I think, including inclusive design and accessibility into curriculum and higher education is one of the key factors. The second barrier that we meet is slightly related. Because it is technically complex and many of the building blocks, if you will, or systems that we're working with in this field are almost actively working against us. Because they don't support the needs that we as accessibility experts and accessibility advocates or users or web site owners or app developers have. So every little bit of work that we do needs to be almost customized. Sometimes it feels like we're building -- building electric trains with Lego bricks. For each time we need to build something, we have to file to look like electric train tracks, instead of just having building blocks that we can use out of the box that will bring some level of accessibility as a basic. I think that's another factor where we need to focus on building as much support for our work in the systems that we use. That

can be anything from the PDF generation software to component libraries for developing apps. And a third aspect that I would like to point to is the concept of compliance. Because compliance is only -- only gets you as far as the lower -- they directly pointed out the interesting thing here is whether it works for the users. In principle, the user doesn't care if something is compliant, if it doesn't work for them the way they need to use it. We need to ensure that these building blocks become better. We need to ensure not only involvement of users, but meaningful involvement of users. Because if it is not meaningful, then it can be more of a show off thing than the actual improvement to the process and the work. From our experience, starting from a compliance perspective is very rarely constructive. Our experience tells us that the best way to approach improving accessibility in any organization or project is to start by creating a shared language around the accessibility, a shared understanding of the user needs that we're needing to think about. Building empathy and understanding. On top of that implementing the processes that we can trust. If we trust the processes, we'll also as a -- almost as a by-product end up building compliance solutions. Because legislation is a good trigger and motivator. It is not the end goal. In my view, it should not be the tool that we use to drive the work. It can be a trigger motivators. It should not be the tool. Those are some of the perspectives from our world. They resonate in both the private sector and public sector in my experience.

>> ECMEL AYSU SÜRMEN: Thank you very much. First of all, I would like to say that we also have another panel following up on universal design and standardizations. We had a really nice introductions within the context of web accessibility as well. Which is super appreciated. Now I would like to turn to Dr. Eric Velleman here. I will have a bit of a futuristic question for you. Because you have extensive research in the area. I would like to hear from you about the I merging frontiers and research that you believe will significantly influence policy and practice in the near future, especially with regards to the realm of inclusive web design. Thank you.

>> ERIC VELLEMAN: Yes. That is not really a simple question. I prepared a 20-page document here. Just to see where to start. You know, the emerging technologies are also on the program today. We'll have people presenting about AI and about the metaverse and about other technologies. I work at HAN. At the HAN we're currently supporting next generation Internet projects that the EU has these continuing calls. Like everybody who is interested here. Every two months there's a technical call. Where you can fill out a forum of about three page. Then within three weeks, you know, if you get your funding, and the funding is up 50,000 euros. You are working on innovative, next generation Internet applications. Looking at accessibility, security, privacy, and aspects like that. If you are wanting to build an open-source platform or whatever, a tool to test for accessibility, this might be the best instrument to get funding for that. So at the moment, we will supporting about 600 of these innovation projects. We all send them information about accessibility. And we help them with other partners. We help them on privacy, security, packaging, diversity, inclusion, everything. To make sure they implement accessibility from the start of their project. We have not only auditors at HAN University and a lot of organizations work with us. But we also have users with disabilities. We try to sort of link them up with the projects. Then I said 600 projects. I don't know if you have any idea how much work it is to consult 600 projects on accessibility. It is fairly easy. Because I think about half of the projects and -- I'll say beforehand, I work at HAN. I work at a technical part of the University of Applies Sciences. I'm surrounded by technical people. I think -- half is too much. One third of the project we have really difficulty

understanding what they are doing. So that's the level of innovation that we're looking at. And that's also if you look at the guidelines and the standards, it is something that is difficult to catch in standards. We see a lot of application. New projects where we have difficulty applying existing standards. So we sort of have to sit down with users and sort of think up of a way of what will the standards have meant or what will users have meant that these standards exist? What does that mean for this specific application or project? That's really gigantic work. 600 projects. It is great fun. We see the newest things going by. The idea is the funding of the next generation. The idea is that, I think, out of 100 projects, maybe 600 projects there's one that's the next Facebook or the next Twitter or -- well, whatever or the next Tesla. But we have a few problems. We also at HAN and other organization that I work, we get a lot of questions now from industry. I mean we talked about public sector body organizations and how they implement accessibility. We learned a lot from that. But now we're getting questions from industry. Looking at the accessibility act and getting sort of alarmed. In one and a half years, they have to comply. And what you see is that they first -- they are searching for help. Some of them need a lot of help. We talk to two bank in the Netherlands. Every one of those banks has more than we think 1,000 products and services. So after all of the products and services, they are looking to have audits. Basically the audits, they want to have plans on how to approach this, to be ready and on the 28th of June, 2025, which is closer than you would think. What we see is that at the same time, the Dutch Government in this case is asking us to audit all public sector body web sites, which in the Netherlands, which is a really small country, about 16,000 web sites. Just imagine every audit by a user and professional today using the tools and manual audit, maybe one day still 16,000 days. That's -- I think it is two days. It will be around 32,000 days. Then that's just the public sector body. They haven't looked at all of the companies who are -- you looked at the list. It was presented yesterday by -- this gigantic list of companies that have to comply with the accessibility act. So what are we missing? We are missing professionals. We are missing like Stein Erik said in the curriculum. I see no curricula where accessibility, diversity, equity, and inclusion is a part. At the moment there are still students coming out of university who have never heard of accessibility. I liked the approach by Susanna Laurin who said the approach, not just send a boring report, but help them. I like that. For that, we need a lot of people. The other thing is the users. Where can we find the users to actually help these organizations? Like in the Netherlands like the 16,000 web sites. But all of the companies in the accessibility act. We have to come up with a way of involving users. And finding the users. In the Netherlands, this is very difficult. Then this new technology where, I mean, if you've never heard of accessibility, and then you are in some sort of the strange technology, how would you even understand what you have to do? So let me see. The last one here. Then I see the approach is Stein Erik also addressed this. This is mostly on compliance. I think what is missing is the organizational processes. I did my PhD on it. That's why I always come back to organizational processes. I'm sure that's a thing. Making web site is not accessible or making technology accessible is not the work of an individual in the organization. It is an organizational process where the individual is supported. Where his colleagues receive training and there are users who help. If you can find them and professionals. It is not only a technical job, it is not only normative, it is not only compliance, it is a nice start. I think Susanna said. There's more to it. You should look at which organizational processes influence the successful initiation and implementation of accessibility. That's, I think, a work that we still have to do a lot of

work on. I know that W3C has a document on that. The maturity model, I think, they call it. I think it would be good for everyone to have a look there and see what the maturity model entails and how you can implement it into your own organization. In my PhD study, I found a sort of relation, correlation between five processes and the actual successful implementation of web accessibility. So anyone interested can have a read there.
>> ECMEL AYSU SÜRMEN: Wonderful. Thank you so much. The context set with the expert from diverse backgrounds and expertise on the panel. We discussed policy standards, design, innovation as well as altogether right now. Now I would like to -- well, we have ten more minutes left. I would like to just make a very brief second round with one question for all of our panelist. It would be more of a takeaway message from you. We've already addressed the current state and where a lot of gaps are remaining, like difficulty applying standards, need for more experts, compliance, functionality, and also involvement of users with lived experience. But I would like to hear from each of our panelist. What do you perceive as the most pressing gap in web accessibility and what practice would you recommend to address this gap directly. This is a very short message. We can have time for the coffee break. What do you think should be prioritized? I would like to leave the floor to Mr. Guillermo Rodriguez.
>> GUILLERMO RODRIGUEZ: Thank you. I think it is different between the organizations. Obvious at 500 and having the same capacities to improve the ministry apart from that, the speaker is saying we recognize that the difficult to include the facility in development cycles. Sometimes difficult is not playing into accessibility until the web site is developed. At this moment, it is difficult to tour back. In the organism and digital Organization secretary, we established the methodology. We check the science and solving the problems early. And we -- annually. It is the facility of reports. And when we -- and when we identify problems, we establish three-month period to solve them. And after this period, we review again and verify that the problems are solved. We have an initiative that is designed system. We have a break. I think the initiative is first, because apart from another benefit from the common language, uniformity, and usability, we create web accessible web competence. We guarantee accessibility and another organization use them. It is going to be more difficult to make mistakes. No more.
>> ECMEL AYSU SÜRMEN: Thank you very much. From what I understand, you do have a structured process that's working well. Congratulations on that. I would like to return to Ms. Laurin for the same question please.
>> SUSANNA LAURIN: I think we've touched on the most important parts which is the lack of competence and the need to train more experts and so on. I think personally for me the industry is working backwards. I don't see why we first developed things that are inaccessible. I would like to change that and shift back. It would be the best way to do this. It is by default built in accessible from the start. We don't need the whole group of experts. I mean I've been living from doing that my whole life. It is a nice job. I think our competency can be used better than remediating the same problems over and over again. Really the biggest gap is the attitude of society. This is still seen as something that you can discuss it if it is a small or big group. But still a specific thing for specific people or specific target audiences. I think that's the mindset that we need to change. Because with Internet being such -- or digital interfaces being such a big part of everyone's life these days, accessibility isn't just about -- it is really about everyone. We see in all of our research that users who do not claim to have any accessibility issues or any disability whatsoever still struggle with similar issues that people with the facilities do. We're all human. I think that attitude shift and making it --

making sure accessibilities is kind of a broad and holistic part of what every designer -- UX designer or content manager -- should think about. It should be a natural part of working with the digital interfaces. That's where I think the biggest gap is. We have -- may I ask if there are questions in the Q & A. Will we have time to respond to them? Or will I have to respond in writing?
>> ECMEL AYSU SÜRMEN: We might take one question. The Q & A of the colleagues, if you would like to answer on the chat as well. We might be able to take one question. Let's see.
Okay. So thank you very much. I would like to without further adieu, let's turn to Mr. Daniel Montalvo.
>> DANIEL MONTALVO: Thank you very much. I'm not -- some of the questions for me -- sorry. I can answer right now. I guess those are the means for the specifics. Briefly lack of competence. To expand that, there's two main focuses for the developers and designers that don't know much about accessibility. There's also the issue that authoring tools that's probably W3C very specific term, LMS, CMS, the tool that we use to create the web site. No one sits around and writes their own HTML and Java script code. You can have your own tool and stuff. These tools could do more for accessibility. Let's put it that way. That could solve so many issues from the beginning, if we had a tool that's able to create accessible content. At the brass level, what's happening there. Browsers are now much more forgiving if you make a mistake. Pretty much nothing happens. You get a warning or error on the consult. No one will look at that. But they could also try to not solve a list and guide the author in the way they are creating the accessible content. I'm thinking more how they focus and how to handle some of the keyboard interactions that you, yourself, have to code or have to rely on the tool that you are using this has been coded correctly. Those are the main issues that I see there.
In terms of best practices, there's a lot happening these days in the W3C system in the web platform. In addition to the world tour, this is a test. FYI, there's a lot of white area. We're trying to move in terms of testing to the automated test. That's going to give much more reliability as to what kind of area that we can use and how we can use that. There's a lot of resources and a lot of outreach, resources, and the W3C and you can see and check. Last thing for me, the main takeaway all of the things that I said aren't important. This one is very important. Don't go straightaway. Don't do that. This is not useful if you don't, you know, if you need some information, go to the other resources first. Get information and then -- I know so many people that, you know, get to the tool. They are not able to understand that. They never came back to the web site. That's a problem. Because we do really have resources that are informative and that are good for outreach. But it, you know, if you go straightaway, that's a document. It is not for everybody to meet and understand. We do want people that's trained in accessibility and competence. The first thing they should do is get to the other resources that we have.
>> ECMEL AYSU SÜRMEN: Thank you very much. Now I would like to turn to Mr. Stein Eric Skotkjerra.
>> STEIN ERIK SKOTKJERRA: Thank you. Thank you to Eric for making it clear to me what my proposition would be for the biggest gap. You are exactly right. I think our biggest challenge is scalability and sustainability. Because as much as I love supporting organizations and working with inclusive design and accessibility, there are only so many of us accessibility experts and also users to support this. We need to build out more scalable ways of ensuring that accessibility is -- let's say, become the default in any system and in any innovation process. So that they do not need support on remediate as Susanna excellently put it. We need to build out the educational resources and systems

that support us rather than work against us. We clearly also need innovation to be able to handle these things without intervention of consultants at every step. That's my main takeaway from this session.
>> ECMEL AYSU SÜRMEN: Thank you very much. Last but not least, Dr. Velleman, please.
>> ERIC VELLEMAN: I think I've made my point. I support what the other speakers in the panel said. I really agree with them. I think make sure you get this in the processes in your organization and don't leave accessibility to one person or two person. Make sure everybody supports this. This is also the mindset, I think, that Susanna talked about. That's needed in the whole of society.
>> ECMEL AYSU SÜRMEN: Thank you very much. With this contribution, I would like to thank all of our panelist. I believe we have gathered immensely helpful insights into the web accessibility -- the current state of web accessibility and what is to come as well. Of course for that to be helpful, we need a realistic picture of what we have on hand. I believe that your insights have really helped us understand better what specific challenges are applying and how we can address them effectively. Thank you very much for all of our speakers for being here today with us. Now I would like to invite everyone for a 15-minute coffee break in the next room. As you can see it is to the right. We will reconvene at 11:30. Thank you.
(Applause)
Accessible Europe: ICT 4 Al
Session 4: Universal Design of Technology for Digital Accessibility.
.
>> ECMEL AYSU SÜRMEN: Hello, everyone. Can I ask everyone to get seated please? Thank you.
Please get seated so we can start. Thank you.
Hello, everyone. Welcome back from the coffee break. I hope you had a nice little break. Now we're going back to the sessions. Now we will be delving into universal design and standardization. So this specific session will be moderated with many thanks to IT telecommunications standardization bureau. By Kaoru Mizuno. I would like to invite Ms. Kaoru Mizuno to the stage. Welcome. We will be joined by an impressive lineup of speakers. Welcome. Perfect. I would like to invite a senior expert at the author for universal design of ICT of Norway, Adil Hussain. Next up is Lidia Best. From the European federation of hard of hearing people. Next up Ricardo Bahamonde. And last but not least, Catherine Bohill. I would like to thank all of our esteemed panelist. I leave the floor to our moderator, Ms. Kaoru Mizuno. Thank you.
>> KAORU MIZUNO: Thank you very much, panelist and participants. Hello and welcome to session 4 on Universal Design of Technology for Digital Accessibility. It is my great honor to be the moderator for this session. As already introduce, I'm part of the ITU standardization sector. Working on related to accessibility. Working on the standardization, and as the coordination group, related to accessibility and also within the entities to foster and to avoid the duplication of efforts. For those who are not familiar with ITU, it develops the international standards known as recommendations. It's work on accessibility started slowly. By the standards on accessibility have been developed since then. ITU's upload is based on universal design concept. That's products and establishes the complying standards of usable by all people to the greatest extend possible without the need for adaptation for specialized design. IT standards are built on the consensus collaborating with the organizations in Europe, of course. We also collaborate with other agency to develop the standards on accessibility of EU health. Now the session will explore how universal design is integrated in technology. As said by several

panelist yesterday and today, it is one of the most important things for developing accessible technologies. I'm very excited that we are joined today by leading experts in the area from both private and government sectors share the experience with us. I would like to ask a general question by understanding the focused work, activities, experiences, and they have vast experiences in the area. I would appreciate if you could include a very brief introduction for yourself before the answer. Now please join me in welcoming our first panelist. I would like to ask Mr. Adil Hussain, who is an expert in uniier sal design from Norway.
>> ADIL HUSSAIN: Thanks for the floor. I'm Adil Hussain. I'm from Norway agency. We use the term universal design in Norway instead of accessibility. When we say universal design, it is accessibility. The part of the universal design in Norway is responsible for the regulation of ICT. It is linked to the act on equal -- equality and anti-discrimination. So our task in Norway is to check the organization is complying with the department for the best solutions and self-service machines, including electronic documents and mobile applications. We also have enrolled to inform and advice on legal and professional ICT and universal design for the national and international level. We obtain an all new status on universal design in Norway. Being the expert author in developing the universal design. We're also responsible for the development of all regulations linked to universal design both nationally and internationally. We want in Norway want a society. In Europe we want a society where everyone can participate. Therefore the universal design of the legal department for both public and private sector. We work continuously on development of regulations, development of standards, the businesses both in public and private sector to understand the legal and technical requirements on the universal design.
>> KAORU MIZUNO: Thank you very much for sharing the comprehensive information of the universal design concept. Now I would like to ask Mr. Ricardo Bahamonde. My question is how does it universal design be more effectively integrated into the process to create universally accessibility that's digital products. And what role does standardization play?
>> RICARDO GARCIA BAHAMONDE: Thank you. This is more difficult than before. When we talk about universal design, all of the information about it. A lot of years ago we talked about Tokyo. They say it is not possible to guarantee universal design. This is the most important topic that we need to know when we write the standard. The most important topic is to involve the company, administration, and people with disability when we develop the standard. Because we need to create something that's this all of the corners. We cannot create the standard. We are talking about the people. We cannot create standard that change completely the activities, the life of people without giving them benefits. Our work is difficult work. For the possibility. I was going to say select the situation like the connective disabilities that are not yet a lot out yet. But we need to guarantee that all of the environment is we are need to increase the knowledge. We need to develop the note about the facility. We need to have designers that know about the facility. We need to work in the big field for guarantee the utopia of universal design. We have some experience, for example, in Italy. We have set one standard. I think we'll talk later about this one. Involving also people with disability for a methodology to evaluate the side to go over the requirement of the European directive.
>> KAORU MIZUNO: Thank you very much. Your insight and thank you for sharing the practical experience from Italy. Now I would like to ask Mr. Lidia Best for the organization of hard of hearing people, I know very well through the work of

the co-vice chair of the group. She's an active contributor to the standardization on accessibility. I think I would kindly ask Lidia to consider to the question. Taking the consideration of recently achieved ideas and standards such as the overview of legal captions services, listening the guidelines for personal sound and accessible. Now, Lidia, you have the floor.
>> ROBERTO SCANO: Thank you very much for inviting me here. It is nice introduction. I have my standard for accessibility. I was just thrown in the deep standard. I had to learn how to swing.
>> LIDIA BEST: I have a degree in the way of legal experience. Understanding how myself and colleagues and members are using the technology in the day-to-day life. It is so important to make sure that there are standardizations and requirements which provide for a very same expectations regardless of where you are. When I'm in the UK, when I'm leaving, I know that the expectation and the level of captions will be exactly as I expect in the U.S.
But there could be some other countries which may not have the same level of captioning. That's a disappointment that I can't follow. I can't -- for this reason, we've developed together with ITU the overview of the captioning. Right now the most popular is very much permission. And to make sure that this is the standard. This is what we need to get to. We know it is not possible to get. You have to train the people. You have to use the right tools. But this is where we go. Progress of perfection. This is perfection. That's where all of the standards. I, myself, as a producer. I need access to captioning. I also need access to sound. For example, hearing groups, assistive listening devices create the similar requirement of universal design and the standardization. Again we work together to provide the overview to make less technical and more approachable to people new to those kind of topics. Haasly the latest one was thanks to the pandemic and telemedicine moving into the media conferences where a lot of persons with disabilities have been left behind again as always. What we needed again is to make sure that the persons with disabilities, myself and other experts, work together. We work with the organization to bring out the minimal requirements to understand what is possible and what is not possible and what needs to be a minimum requirement. Everybody, no matter where we live, we get the same access. The same expectations are there. And I have to say it is -- it would not happen without the global initiative on accessible ICT from U.S. who is a member of ITU. Make sure to provide with delegation and platform to participate in the standardization directly. I think, you know, we got that. I would not be able to participate. So that's for sure. Now I'm also a proud member of 6,000 professionals in competencies. I have moved truly from fashion to -- I hope, you know, this brings some understanding of where the universal design comes in and where the standardization comes in. The minimum key performance indicators that gives us the understanding if we are providing the right access. I'm just recently flying with airlines to Japan. Just flying last night, in the barrier, it was huge difference. Some airlines have entertainment. On the airline that was flying to Japan, there was a kind of entry. Which I couldn't substitute with the part or just normal headphone jack. I couldn't substitute for the assistive listening devices. I could do that now. There's a lot of international design that applies. Thank you.
>> KAORU MIZUNO: Thank you very much, Lidia, for sharing the work that you've been involved with and you highlighted the importance of collaborative work. I also would like to thank you for mentioning Japan in your recent experience. There's a lot of difference in culture. Now I would like to ask Mr. Ricardo Garcia Bahamonde. He's the head of accessibility and digital inclusion at ATOS IBeria. How can it be more integrated in the development process to create universal accessibility and what role do they play in the integration?

>> RICARDO GARCIA BAHAMONDE: Thank you so much. Good morning, everyone. I want to thank the ITU for inviting me to be in the panel. It is a great question. We have touched on some of the key aspects that need to be considered. We are connecting the dots here or the ideas that make sense in the whole discourse that we're putting together. We have standards. I mean we have many elements. So as to be able to work effectively in making products and services more accessible and usable by everyone. I think universal design are the key areas or the key aspects, of course, that should be followed. It should be followed by whom? We've been talking during the coffee break and early this morning. Yesterday as well. Of the shortage of accessibility professionals that need to know about accessibility in the daily tasks, not only in design of the daily products and services and actually different business processes that take place in an organization like ATOS or in any government organization. Different levels on the daily basis. The first question is who is involved here? Who is affected by the accessibility and work flows on the daily basis. In this case, we were talking earlier this morning. The panelist were talking about the shortage of persons with disabilities or users with disabilities or experts with disabilities that get involved, become involved in the -- these work flows in designing products or services. I think at this point, it is really important to think of the different user personas that we can incorporate when designing something. When designing a product or service. And the users. Because eventually this is -- as it's already been mentioned here, this is all about what you do on the daily basis when we go shopping, when we work, you know, when we travel, tourism, when we try to do some procedure with -- you know, some government entity. File our taxes. It is about being able to do it and being able to do it in equal terms. And eventually have a reasonably good experience; right? This is the user experience. The famous user experience thing. We're working on improving the employee experience. The employee experience is about us being an employee of the organization. From the moment we get through the recruitment process to the onboarding, retention, develop our career until we leave the company. During all of that time, we're going to need several things. To make our life easier and to become productive and whatever we do. It has to have a really good impact on our productivity; right? This is all about our experience. So where does the universal design and what's the role that universal design, for example, plays in a work environment. In the workplace environment. Obviously, accessibility; right? Are these accessibility present in terms of all of the fools that are applied or are used during the recruitment process? The job portals; right? They can become -- applied to a job online on equal terms. No. We know that. Even if the job portal and the application form, we've all had to go through application forms filling them out. We know it is a headache. You can make an application forum very accessible to meet the standards. What about the usability? It can be accessible, it can be conforming to the standards. Maybe it is a nightmare in terms of usability. We need a project years ago. Some of you may remember it. We tested it. In the job portals. Some of them were more accessible conforming than other. But some of the usability of the some of those portals was -- you know, some of the testers with disabilities that were involved were telling me regardless you are my friend. I'm going to stick to the end. We're going to try to complete it. Otherwise, I would have left. This is impossible; right? So this is all about bringing in people that -- more and more people that can work in accessibility in the different stages of developing and using something. Obviously, you are to design a product and service that's going to be used by a whole range of users. You need to know what those whole range of users are going to need; right? Involving persons with those different needs. Any of us. Right.

Whether you have a disability or not or some kind of impairment, or you are in the gray area. Many of us are in the gray area. You need to say something about that. I would like this to be this way or the other; right? We know that's very optimistic. That's very, very challenging to do. Obviously, the standards are there to provide some common ground for minimum basics to be able to work on words for designing something that makes the whole experience much better. Just real quick, we are working on, as I said, generating more professionals or bringing in more professionals with disability -- more professionals that work in accessibility. Ask with accessibility possible, we're working on different programs. This is one of the key challenges that we're facing. The lack of accessibility professionals that become aware. I can work hands on in applying accessibility for accessibility principles in one way or the other. If different business processes within the organization. Whether it is testing, whether it is coding, application, whether it is procuring something, of course. And in different areas. So that's my take on this. Thank you.
>> KAORU MIZUNO: Thank you very much for your insights and sharing your experience in various processes to make the services more accessible and highlighting the implementing aspect. You highlighted the importance of usability of services, including challenges and the need to be addressed. Now I would like to as Mr. Catherine Bohill, the Director of ESG Development and Impact from Telefonica. I direct you the same question.
>>CATHERINE BOHILL: Thank you. Okay. First of all, I would like to echo my fellow panelist. Like everyone here, I'm looking for a utopia as well. I want to make accessibility or universal design fashionable. Like Lidia. Because why? Why does Telefonica want the utopia. It is a question of business. It is a question of reaching more people with our products and services. It is a question of getting more talent. You know, there's a war on talent at the moment. If we want to make our companies inclusive as possible, to get the best people no matter what disability, further ability, this is an opportunity. We really believe it. Now I agree. I think it was really interesting to hear Ricardo. You know, there's a lack of accessibility professionals. And this certainly is true. Looking around the room and this great line of panelist, there's loads of brains, loads of clever people, loads of technical people here in the room. I can't imagine what everybody here is capable of doing. The problem is not here in the room, the problem is everybody else; right? And it is easy to say it is everybody else. What can we do? Well, it is our job to change the culture, to make this a CEO problem in the case of the corporation. You describe Lidia, that experience between the unnamed provider and the wonderful Iberia. I can tell you that wasn't the case a few years behind. Again I'm fortune enough and I currently don't have a disability. I may have in the future. There's lots of things as a person without a disability I benefit. Telefonica's customers benefit by accommodating. That portion of frustration, I've had. It is nothing to do with a disability. To summarize, it is about customer and employee experience. It is about reaching more people and achieving. You know, you guys all know -- guys and girls all know the statistics. 50% of the population have some kind of a disability; right? And we need to provide for that. We need to access this talent and this is why it is a priority. At Telefonica, this is something that's from the topdown. Our mission is to connect people that want to be connected. We have echoed these. He's very vocal. It is a priority. Within our strategic plan we have clear objectives to address accessibility. You know, we still have a long way to go. I loved the last panelist. It is really sad what she said. Her name was Susanna. She connected by video. It is very hard to rectify things post. We

need to try to address things by design. It goes back to my colleague from the region and design. That's the way we need to focus. Thank you.
>> KAORU MIZUNO: Thank you very much, Catherine. Thank you for the beautiful employment sector helping to make services more inclusive for the people. Now I would like to go to the second round of the questions. So first I would like to ask Adil. In fostering the universal design in ICT in the national authority, please collaborate key strategies to effectively support implementation of requirements of national and EU decorations on universal design. What are the challenges and opportunities that you see from your experience? Thank you.
>> ADIL HUSSAIN: Thanks again. I think the design to create the products, services, environment, and everyone can access that without your abilities and our disabilities. They have accessibility standards with the guidelines and education training and lack of accessible professionals. I will go -- I will just go -- I will not go through all of the discussion that have all been. It helps us to provide the baseline. This shouldn't be the goal compliance. I guess companies need to integrate universal design and accessibility into the policy. Furthermore, I guess the standards that are being developed should be interoperable, like the standard and short accessibility feature to work consistently across different devices and application. There have been very much focused on web accessibility. I want to elaborate also the accessibility issued connected to the mobile applications and electronic document. The problem is I don't know the statistics, but the majority of population have access to smartphones. Unfortunately, most of the mobile applications being developed are not universally designed. There's not much focus on mobile applications. The lack of -- there are standards, for example, also apply to application. There are lack of guidance and there are lack of procedures. There are lack of besting and providing the documentation. When it comes to documents, there's a lot of documents. PDF, many people have PDF which are not always accessible. I guess there's lack of guideline, universal guideline and harmonizing the standard how these industry standards and these standard can be applied across different platform and different devices and different ICT solutions and I think one person are the mobile application is the document. It is the information of just trust. Trust, I think, is a group between all of the relations. When you land on the other side, for example, the government should apply the job application. You have a trust that if you land, you -- this provides you a kind of opportunity to actually apply the job without any frustration, without any hurdle, without any barrier. If I'm sitting on this, I have a trust that I will not bow down out. If we are standing on the floor, for example, we have trust on the floor. This floor will not get the insight. We have trust. I guess when the user for the web site, the user will have initial trust. But then they infract with their ICT solution are the environment and service. So there's trust is actually being, because the services are in the products, they are in the environment, are not accessible for the person. I guess we have to keep that trust built on having to make the trust strong. Then the next point that I want to elaborate is collaboration and industry involvement. There have been many discussions about the user involvement. Yes, the user is very important. Because they are the people who are going to use the applications. Yes, the business think why we should mention the universal design. It is about the business. You get more user parts if you have 100 part user and 50% of the population in the country is not able to assess your solution, then you are missing 15% of the customer that could be your customer if your product is universally designed. I guess the businesses need to put their trust on one side and come to the collaborative environment where they can sit and put their business and trust behind and user interest on top of that.

And contribution to standards. They've been mentioning a lot of the colleagues today. There are working with the guidelines. We need more people to contribute. We have -- I have been part of the project. My colleagues are working. That product that we've been working with the contend. We have developed a community in that. We need more volunteers to actually contribute and the community to develop these harmonized task flows that can be used. Not only across the Europe, but across the world. This is also one of the challenges different countries have different understanding. In Europe I'll just focus on Europe. We need such harmonizing and standards to test. For the more inclusive appliment and inclusive precurement, this is very important. I guess inclusive environment will need diverse people in the organization. Which know their pain. Then they can again the goal and the other people in pain. In Norway, we have Norwegian standardization which is responsible for developing standard. They have actually dropped two standards which are soon for the parliament in the first standard. It is about inclusive employment. Digitalization and the standard actually in digitalization and universal design to achieve inclusive employment. And the other standard which is soon on hearing is digitalliization and universal design and procurement. The personal experience is people who are working in procurement, they have lack of competence in universal design. They don't know the standard and requirement. By the product and services, they see. There's a requirement for universal design. They don't have the competence to best the products against the legal requirement. We should emphasize on the procurement department to have inclusive employment experience. We have inclusive product that deliver. I don't have more time to speak. Okay. Because I have a lot of stress normally. After the complementation of web accessibility directives. We are only 22 people who are working in the party. In the Norwegian, we are not capable of supervising all of the industries and all of the businesses. But up for the implementation of web accessibility directives, we have almost 6,000 web applications that we have to perform testing and mobile applications. As I said, we have lack of testing procedures. They are testing too to use to test 6 ,000 in a year. We have 7,800 pages that are not talking about -- the web pages that we have addressed regarding the international and EU legislation. We have a lot of automatic services. Like the check-in machine and airport. We have self-service machines in Norway and I hope in other European country we have self-terminal where we can buy the things and pay and go outside. We have self-service machines. We have in Norway, we have almost 36. We have 180,000 machines which come under the national and international. It is very hard, actually, to cover all of the -- therefore we perform supervision which is risk-based supervisions. We do not test all. We do test some. Which, in fact, we test some solutions and some businesses which affect the whole society. We have a supervision process. Get accessible IT solutions. If it is a web site. It is automatic machine or electronic document. We have the web accessibility guidelines. Based on that accessibility, interpretation, we have developed our own task rules. I want to also mention that our interpretation is also integrated in ACT tools that have been developed and used. Now we are developing also to test for mobile applications for the new requirements as well. We are almost done. We have just three months in the project. We will be publishing our task rules for mobile application as well later in this March. After we test, we send a report to the company. We have discussions with that business and our company and we give them 12 weeks deadline to correct that. If they correct that, the case is closed. They don't correct the violations in 12 weeks, then we fine and in 2022, we actually have performed on one of the largest in Norway. They had to pay 150,000. As I said, we perform supervision

which is risk-based in the society. We perform the examine system in one university, and used in all universities. If they force their supply and their record to fix the violations, it means all of the universities in Norway were using this system will have the universally designed ICT solution. So I don't want to go and take a lot of time. I just want to come to the last point of accessibility how we're implementing and how we are handling the web accessibility. As my colleagues mentioned, there are two -- I will say three main things in web accessibility directive. It is simplified monitoring, in-depth monitoring, and web accessibility statement. I will start with the web accessibility statement. I have thought it is a shame that businesses have to publish a statement about their ICT solutions. What part of their ICT solution is not accessible and they have to provide feedback function. This is required by the web accessibility. I guess the feedback is very important. We hear the user. User -- we hear users. Users are experienced. What are they feeling on the ICT solutions? We get the feedback and develop the standardized solution for businesses to register their web accessibility so all of the users if they have on the web site for the Norwegian hospital to have the same format and same method to read the web accessibility statement as if they have read the web accessibility statement of policy web site. So the web accessibility statement we develop is fully accessible. If the businesses use that, then the web accessibility statement will be accessible for all of the businesses. That's how we do. We do one standard. Then we have the whole society. For -- just ten seconds maybe. First simply by monitoring, we have developed our own play form to perform. We used the automatic tool. Run by the Portuguese friends. That's integrated in the pay phone. It is the industry standard. For in-depth monitoring, we have all of the experience. We have our manual inspection to perform. Thanks.

>> KAORU MIZUNO: Thank you very much for providing the comprehensive reviews and experiences from the perspective of national authority. And highlighting various aspects of accessible solutions and the processes. Now I would like to ask Roberto, considering your first experience, as being expert in web accessibility and being a member of ETSI and AccessibleEU as well as being the chairperson of the accessibility commission in the Italian National Body, how do you see the impact of the standardization on effectiveness in universal design in environments. Could you share an example that's related to significant improvements in accessibility?

>> ROBERTO SCANO: Thank you. I want to thank you. Reply is the answer of the question. We have also in Italy some situation that the company understands the business. And understands that they have the standard and more accessible business and services. This is the most important topic. When the friend that we see before remembered all of the phrases, so I want to suggest also to read the why for the business part. Because it is the most important topic for integrated promoted, universal design. If the company understands the benefit of the facility, they will improve the accessibility in their service. Then we note, in Italy, for example, we expand to the companies. They pay an amount to reach 5% of the balance. We put this one. Because a little fee, they prefer to pay the fee. Because the fee costs less than upgrading the service. But we see that those with the Italian lab requirement, we don't talk with technical department. We talk with compliance. We talk with the corporate structures and responsibility. They put accessibility inside the corporate social responsibility. Now we talk about sustainability. We need to put more accessibility also in the topic. So if we develop standards that standard evolves. We have a stable standard that can be happier. We have a lot of company that creates new products and services that help also customers to be

compliant. You talked before about the PDF. We have a lot of product that we can create. Documents that are compliant. But we need to teach to the customer, to the employer of the company to use correctly. To export correctly the documents. Also this case there's lack of knowledge of the power of the problems that they have. So the most important topic -- am I close? So we can move to other experts. Is that we have the standards. We have the implementation of the standard. What we need, we need to expand the interest of the companies to update the standard as an opportunity not as a lab requirement.
>> KAORU MIZUNO: Thank you very much for sharing your practical example. How to force the implementation and highlighting it is an opportunity not requirement. Thank you very much. Now I would like to ask Lidia, given your unique perspective, as an expert with life experience, how do you see standardization in the universal design in digital solutions for the hard of hearing people? What standards do you believe are crucial in this context? And I have additional question. How do you see the roads like your road of CPACC supporting the standardization?
>> LIDIA BEST: Thank you very much for the floor again. I heard yesterday there was a lot of discussion. They've been working on the accessibility rights and created to ensure that the persons with disabilities become themselves experts in accessibility and bring that expertise further. Of course, it is not enough. You need more. We keep hearing that. This is the start. This is a collaboration with international accessibility professionals which provides a certification. They are, of course, working with one to work with accessibility. We have made sure, especially hard of hearing we can apply to participate in standardization further and provide expertise. It is important. It is important to encourage our experts. Personally, sometimes I'm looking around and I see all of the different job offers for accessibility professionals. I'm just keeping away from it. Because it doesn't feel like it is something that I can give to the persons, to the companies. And, yeah, it is sometimes -- it is very confusing and complicated. I once asked it is mostly around where visual issues. Which is true, you know, but for ICTs themselves are not accessible. But when my experience we were at a length with ICT. Yes. It is also accessibility. I think we need to be much more encouraging and more creative in bringing expertise to the table as well to make sure the experts as well. You may need have the job description, but you can work in another one. You need to widen the scope basically. Not narrow it. But one thing, in terms of standards which are a requirement for the majority of people who have a hearing loss, they use hearing devices be it hearing aids or Cochlear implants, access to sound is important. Often it is enough from some of the people. We need to be able to either have access to environment like here build the environment with hearing loss which acts as directive to the microphone or assistive devices. We can simply plug into whatever ICT is out there. We can swap this from standard headphones. Finally captioning. Captions and the quality of it. Yes, very often we see captions being provided. Is it actually usable? Is this something we can use? If someone provides me on the entertainment on the plane or anywhere else a movie with captioning, which is transferring. It is very difficult to read the captioning, especially when it is white background in the movie. You haven't provided me with accessibility. You think you did. But I can't follow it. I can't read it. Therefore it isn't one. This standard is very important. Another standard which is inclusively important and needed is telehealth. We are just starting the telehealth. What I've seen and what I think everybody else in the room have discovered that medical professionals have discovered in telehealth as widening the reach to different people and also not realizing it can stop you from gaining access to

help professionals. So the accessibility of vast services are crucial. If I'm supposed to make a call to my practitioner, they send me an information on the short message, here is your appointment. If you want to change it, make a call. I'm sorry. This is not accessible. No. You have to make sure that I can actually do it. You see my mobile. You see the application. I think that's both very important parts. Of course, the ability -- what I see also is the trend of going -- pushing for the digital way as much as possible. Without having a backup. So don't break something or trend something that is working well. Just use complimentary services when the user does not feel comfortable in using the ICTs. And, you know, we think about the majority of the people with hearing loss. People who are older. They will struggle. We need to make sure we're catering both ways. They are great. Sometimes the traditional ways are important. I don't think I can add more. There's discussion for another time. There's part of the global initiative for inclusive ICTs. Our organizations is drawing from the knowledge and participating in smart devices for all and making sure that cities are accessibility. My colleague is here as well. She's just hiding there. She's leading the program. Just widen the scope. You may not know who you've got. But also ensure that the whatever is brought in and brought forward, like everyone else before me has said, start from the beginning. It is so difficult to change things afterwards. Thank you.
>> KAORU MIZUNO: Thank you very much, Lidia. Sorry. I was not aware of the time restrictions. How much time do we have? Okay. So maybe I'll do ask quickly, quickly Ricardo and Catherine to add the final comment. Probably I prepared a question I'm going to ask you as a final comment and as a takeaway. Thank you.
>> RICARDO GARCIA BAHAMONDE: Thank you. Final comment. We've been talking about implementation of accessibility and standards at different levels, country levels like Europe. I think it is really important the country level, national level, and regional level even so it can trickle down or transfer on to the organizations. There's a change in the narrative. Someone mentioned persons with visibilities to the extent is invisible. Other topics have been successful. I want to give credit for what they've been doing in the last 30 or 45 years. In this case, Mr. Jesus Hernandez has been playing a huge role in that. I think it is really, really important to send the message and let the message sink into society. That's the way it is going to sink into organizations. In what they do. Within the organization, they need to become aware of all of this from a government standpoint. Policy is super critical. As I was mentioning today. Without the governance and policy, we adopted that. We tend to see accessibility barriers as pollution. As pollution as a result of the production process and in the case the digital production process that generates accessibility barriers, if not all of the standards are followed or all of the rules are followed. You are going to have pollution; right? And Eric Velleman this morning mentioned accessibility standards as well. We do a lot of models as well. The best takeaway that I get from those is you open the eyes to the people that you talk. In the organization. You do the maturity model assessment. You involve people from different key areas. You talk about this. You ask them the questions. We analyze and you guide them. They open their eyes to stuff they didn't know about. You know, they were not aware in their own business areas as to why this is important and how they are affected and what they need to do about that to move to the next level of maturity. We've successfully implemented the accessibility into other procurement processes. That's been along a pretty -- the milestone -- significant milestone. You are proud of that. That's going to start -- that's going to trigger other processes with the vendors internally as well; right? Finally

just to highlight. In order to gain traction and scalability, all of the processes need to be interconnected. Obviously, the key to me to raise all of the awareness and get all of the process started is to gain buy-in from the top leadership of the government. Whether it is government or public sector or private sector and corporate. That's all from me. Thank you.
>> KAORU MIZUNO: Thank you very much. Catherine?
>>CATHERINE BOHILL: Yeah. Just quickly. Three points. First point) this is about business. I think that's very clear. We just have to make the global people take a consciously that this is valid. I think we need to work hard. Everybody is spreading the message and getting it to the leaders. Right? Also the second point is this is by design. We need to think about accessibility by design. We're doing this Telefonica. We have goals for 100% of the new products and services by 2025 that will be accessible along with sustainability and artificial intelligence ethical criteria. Accessibility is a key pillar. It has to be done by design. Rectifying things after it takes longer and is more costly. The third point is this is a huge echo system. This is about working together. With alliances, we're work, the ITU. We don't work in isolation. My colleague was explains about the problems with mobile apps. We deliver mobile services. Mobile apps is part. We can't do this alone. We have to do our part. This is why standards and international standards are so important. I think the ITU, my last role in Telefonica with spectrum. They seem to be able to get et spectrums bands very well organized in the global area. I just wonder because it is closer to the money. I think we need to make sure that accessibility is understood as being close to the money. Thank you.
>> KAORU MIZUNO: Thank you very much, dear panelist, for sharing your view and experiences. I believe the discussion will continue for the afternoon session in the AI and the metaverse, the new areas of technology that we need to work hard, further and together. I would direct you. Thank you for all of your kind attention.
With that, this session has concluded.
Thank you.
>> ECMEL AYSU SÜRMEN: Thank you very much to all of our panelist for their valuable insights. Now I would like to invite everyone to the lunch break in the next room. We'll reconvene at 2:00 here in the main room. Thank you.

Accessible Europe: ICT 4 6:00 all
Session 6: Accessibility in the Metaverse: Crafting Inclusive Virtual Worlds
Accessible Europe: ICT 4 All Session 6: Accessibility in the Metaverse: Crafting Inclusive Virtual Worlds
>> ECMEL AYSU SÜRMEN: Can I please ask everyone to get seated please? Thank you.
>> ECMEL AYSU SÜRMEN: Can everyone get seated please? We're about to start. Hello, welcome back, everybody. I hope you had a nice lunch break and you are enjoying all of the delicacies Spain has to offer. Now we're kicking off with the last part of our event. Now in the afternoon we're going to have two sessions. One on AI and emerging technologies and a second one on metaverse. It is quite future oriented, I would say. To begin with, I would like to first of all invite to the stage our next panelist and the moderator of the AI emerging technologies and improving accessibility session. I would like to invite to the stage Mr. Guillermo, officer of ITU. I would like to announce that this session is thanks to GM. We're happy to have them here with us today.
Next up, I would like to invite Ms. Alcaide. Yes. And then next up we have

Mr. Casas, accessibility policy officer from European disability forum. Welcome. Nix up we have Djordje, founder of Sign Avatar. We have two speakers join us Rejon line today. I would like to introdeuce Ms. Maria and their participation is also thanks to the Zero Project they are partnering with. So we're going to have them on the screen soon. Next up we have Dr. Carlos Duarte. We have Dr. Miguel Angel Duboy joining us today. And finally last but not least, we have another removed panelist joining us. He's the secretary of International Federation of Hear Hearing Young People. We're excited to have an impressive lineup of speakers. I wish you the best with your session. Thank you very much.

>> Thank you very much. I hope everyone can hear me well. Dear colleagues, distinguished panelist, and participants, good afternoon, everyone. I would like to thank you all for inviting the IT to join the panel. I'm Guillem Roura at ITU in Geneva, I'm working for the AI4Good. It is on sustainable and inclusive artificial intelligence. It is organized together with 40 UN sister organizations and convene with Switzerland. It is a privilege to introduce the panel and moderate the panel for digital accessibility and accessible Europe 2023. As AI continues to advance, its impact becomes evident in all aspects of our life, demonstrating tremendous potential for social good. The ways in AI can really enable economic and social progress are endless with a transformative character that really can help us achieve the sustainable development goals that were agreed five years ago by the member states of the United Nations to improve life by 2030. AI4Good was created really for this to identify the practice call solutions, using AI. Scale the solutions for global impact and really help accelerate progress towards sustainable development goals. As we navigate the ever-evolving, it is crucial to recognize that inclusivity is not a mere option but essential element for a truly digital society. It is a powerful tool holding the immense promise for reaching the accessibility gap to fully participate in everyday life. Today we gather here to delve into the latest developments in AI accessibility, explore emerging trends by our expert panel on the topic and discuss the channels and opportunities ahead. -- challenges and opportunities ahead. Today we want -- I think it is the first of much more. Digital accessibility is not just a goal, but a reality for all. The session will contribute of two main parts. In the first part we'll look into use cases and opportunities on AI when it comes to increased digital accessibility. For that, I will be asking our esteemed panelist two questions. The second part we'll explore challenges and the way forward in terms of regulation, followed by the Q & A with all of the audience today. We have an distinguished panelist and distinguished set of panelist today. As always, we're counting on you, the audience, to help create a very interactive session. Without further adieu, I would like to give one minute of remarks to the speakers. They can present themselves. You have one minute. I would like to start with Almudena.

(Speaker off microphone)

>> Thank you very much. Good afternoon, everybody. Thank you for having me here and representing the research and development and innovation area. My remarks, my 1:00 remark will go to -- I'll be happy to present some of the projects that put artificial intelligence at the center and core of our research to help and improve the lives of people with disability in different areas. I've just brought two examples to you this afternoon. And I would also like this session to talk about what I think are the three pillars for artificial intelligence now and in the future which is data for me. I would go on three pillars would be data, data, and data. I'll be more creative and I'll say we need to talk about data. We need to talk about algorithms. We need to talk about EU use cases. The three aspects are three different focuses for us all

and in particular for the purpose of our research.
>> Hold on. Now I would like to give the floor to Daniel Casas.
>> Hello, everyone. I'm Daniel Casas. I come from the European Disability Forum which is the organization that represents people with disabilities at the European level. I'm trying to explain what we're doing on artificial intelligence. In the last years, we've been quite active on the field of digital accessibility in ICT. There's many legislations being developed. Many standards. We tried to be active with the whole disability community and discussions. When it comes to artificial intelligence, make sure we started working on it as a reaction to come extend to the proposals that was represented years ago. There was a partial agreement. In the moment, we realized we needed to come up with a strong position. We had to basically maintain things we wanted to stress. The first one was accessibility. We had to make sure no new barriers for created. The second part was to make sure there were no new cases of discrimination. When we started working on the topic and also recently we dent get funding to implement a project on AI and I have a colleague that's called Cavar Nole. His task is to hold on the one hand to ensure the perspective of persons with disabilities is present in the policy debate that's taking place currently all over Europe and the world. So the rights of persons with disabilities are present. On the other hand to train and to build a capacity of disability community as well to be present in the start of the discussions. We know that AI has a lot of benefits for society, for persons with disabilities. There's also some challenges and sometimes the discussions get technical. We have to be and we have to be stakeholders. This is what we're doing right now. The last thing is there have been some -- I would say -- the word is English, some kind of official document from the board-t of directors which we explain our position on the AI and digit and how the ability community takes respect.
>> That's gate. That's great, Daniel. Now over to Dordje.
>> Hi, everyone. Hello. Some of you listened to my pitch yesterday. I'll briefly introduce myself to those that weren't here yesterday. I'm Djorde. Our software translates speech into sign language. It is to enable people around the world to have content in their native language. Right now the product is being used in transportation. What it does is it automates the PA system to be in sign language. Everything that you can hear on the PA system is available for deaf people in sign language on dedicated screens around the train station or airport or on your app. I'm here today, because I wanted to present my solution in front of all of you guys and to basically help you understand why such a product was really important for the deaf community as we're looking to expand into other countries as well. Our softwares is a lot in sib ya. You will be able in the air and expand to other countries and become a corner stone to accessibility. Deaf people reserve the right to have everything in sign language. That's me.
>> Thanks. Now I would hike to give the floor to Dr. Duarte.
>> Thank you for the opportunity. I'm not an AI scientists. I'm an accessibility and interaction researcher. That being said, AI is everywhere. We are working hard to Utah AI for justability. That is my present here. As my focus point now, we were just during the lunch break joking a bit around. Some problems that exist. Accessibility and not only accessibility related. What we were talking saying is AI will fix it. We were yolking; right into. AI won't fix everything. It is important we don't take the same mistakes with it with the web and mobile applications. Where we now end up as was clearly said this mortgage, in a remediation position. Where nothing is accessible by design. We have to remediate it. So AI is moving really fast. We need to make sure we

don't make the same mistake. So AI will be accessible by design. Just to add something to the first direction. Data, data, data. You recommendation algorithm use cases. We need to make sure everyone is able to access the AI systems.
>> Thanks a lot Carlos. Now over to Dr. Duboy, who is Professor at the polytechnic University in Madrid.
>> Thank you. My background is on telecommunications and generating and human interaction to apply to the opportunity. We have been working on the reasons technique and reasoning model in work services, mobile application, and the smart home. This is a place where inleading is still as much as possible. I guess that's how briefly introduction or optizer or research have their lunch. I would like to say that intelligence, these with empathy. With understanding to each other. But in cognitive, physical, and other points of view. If intelligence is not accessible, it is not intelligence. And this is a very important void. Artful intelligence is not that smart all all. We can talk about data, data, data. Exact, impact, impact how these emerging opportunities are going to S.P.O.T. the right tile rates by an inearth cat cast point of view. We are talking about the ethics of the consequences. The possible consequences with in mind for the human beings. We this is what will be offer right now. I believe that appropriate, accessible AI can support a better life. We take into account the considerations. Thank you.
>> Okay. Thanks a lot. Now I would like to welcome our Rejon line speakers. So I would like to give the floor to Paulina. She's the secretary of hard of hearing young people. She's joining as well. She's a representative in the panel of young people. So the floor is yours.
>> Thank you very much. Good afternoon, panelist and moderator and participants. I'm really honored to be here today to represent the community with the hearing loss, especially hard of hearing. The young people. Because I'm a secretary of -- which stands for international federation of hard of hearing people. I will present the European hard of hearing community. We ask the federation -- we wanted to make sure the voice of hard of hearing is hard in public. That's why we're enjoyabled in activating for the rights and well being on the committee. Also we're privately telling about founders in technology to break down the barriers. I create inclusive. Also the digital one. And during the panel, I want to show the point of view as someone who is hard of hearing myself. I am a hard of hearing person. I'm also a person who has a life experience of disabilities. I guess that I have experienced firsthand the positive canings that technology, particularly I tends to bring some part of our lives. They have some deterrent. Of course, we want to find out. I want to show this to you from a practical site.
>> Thank you. Our last speaker today is Maria Ignacio. She's the head of international affairs.
>> Hello, everyone. Thank you so much. To ITU for inviting us to be a part of the Accessibility Europe conference. I am as they just said the head of public and International Affairs in G iGill yam base that's promotes disability inclusion. We're focused on promoting the topic in the American countries. That includes the Spain. That's why we're in the limits of Europe in a sense. In my initial remarks, I would like to point out how the comments of artificial intelligence can and is improve the lives of person with abilities. We've seen it in some technologies such as artificial -- assistive technologies that can be personalized and customized. Communication improved for persons with disabilities as well. More access to information. Information that's present in the way that is easy to understand or EA President in a way that persons can understand. Which is not necessarily the case. We can see so many promises of

art artificial intelligence. However we could not forget the ethical k that we need to have when we're developing these storms. For example, artificial remains are. If they are not the design to to got if the that's why we need to have aaccessibility. We need to start in the terms of space tools. Other side they will not be accessible. U.S. just and our leagues said we would need to fix it along the way. It is not something that we want. We should apply the principles of inclusion and universal design. With artificial intelligence. That's not in any kind of exemption. Also because of the deny can be met within me. Need the et cool it is and the channels of intelligent spaces as we move alopping. That's what I would like to discus gutter when the comes have ask and the audience might want to discuss with you. We're very much better.
>> Thank you for the speakers for the first intervention. I would like to turn to our first speaker today, Almad arc na thanks. A lot. For ening us to explain for digit tab accessibility for people with disabilities. People people took in develop issues. These show the issues. The floor is yours.
>> Thank you. Yes. We brought two samples for you today. Of course, advances in artificial intelligence have given us a lot of high dares and a lot of opportunities. There are many more use cases, good use cases of the artificial intelligence. After you toot, I'm going -- the only one I'm going to talk about. The sicked one show how you the tool. I wanted to make sure our bank was safe. He said as well as. I wish computer teak vision intelligence. People could have,. It shall shared during the meeting or during a job. A video showed by artificial intelligence. We brought together and put in abilities with the audio channel. So we should use artificial intelligence to summarize what the person was saying in a different channel to their regional fashion. That summarize could be a simplification of the language. Again done by artificial intelligence. People with cognitive or language accessibility needs could follow the meetings. We also used -- summarizing the services. After meeting, you are able to just press a button and have the summary. The summary which has been said apart from the original transportation. Also that summary can be used and generated in simplified language. So a lot of different utilities that there were all out there that brought together many people with different profiles and different needs could come together to work in or have a training session by video conferencing with the stress less environment tool that could actually make that meeting or that session available and accessible for everybody. So let's -- finalized that research. We've been into that for the last two years. And we'll be very soon out there. You'll be hearing about access meat. You'll all use it. The second project that we wanted to share with you is called: access rebots. It is a completely different line of research in robotics. I've got a video to show you what it does. Please enter the video.
>> They are hear to make our everyday life easier. Well the came has come for a new generation of row pots to enable the autonomous. Two any fully accessible row bus have been developed. Meet Rory, the first within tight environments. Aria is able to do to e able in one newpaper or way. It is designed by largest requirements. It is intelligent at interacting with the environment and making steps along the route. Want some help getting to a perform? Yes, a step actual adden performance. The robot cannot only avoid the cobs 8:00s along the way, but it can accorded the gotback. Therefore is deaddy and take thanks to the handle spar and general ere no, ma'amics and speed of the robot. How does the European eye they are fully accessibility opinion which features science signals, of within sign language, and.platelet. Purchase. It is the perfect system for larger environments. This research has been financed by the Grouphealth within the project access robots.

>> Not wishing to take any more time of the following speakers. This is part of the pillar that's the use case scenarios for artificial intelligence applied to improve the lives of people with disabilities in an ethical and in a fair way. So my next question I will address the algorithms.
>> Exactly. I think we're sharing those two with examples. The robotic example. The score of the work that I'm doing at the ITU as well. It is a really great project to showcase. I think now I would like to ask you about what we've been talking about. Developing the technology, we need to be aware of the challenges. There are a few things we should be developing into account. I what should we be aware of when we expose ourselves to AI development and research.
>> Well, like I said before, I think there are three pillars here and the data, algorithms, and use cases. With all of the considerations about the use cases that are other panelist -- all of the panelist have been talking about. I think we should focus the challenges and we should focus on the first -- on one pillar more than others. I would start with the algorithms. Artificial intelligence algorithms are usefully nature inspired. They've been around for a long time now. They started with ant colonies, algorithm, network, and so they are more or less well known. The challenges is to implement them correctly. But that's the software issue. Almost a software issue. Any model that works to solve for a given problem is published into the academia and industry. There's little room for -- I was going to say for improvement. There are a lot of improvement there. What I'm saying is it is not the key. It is not something that I think should be process a real challenge for the visual intelligence. What is data? It serves to train the algorithms and give solutions for the modelings to give solutions to problems. In my opinion, data is the center, the core for advantages and the re-Org challenge. In data, I think we should be looking at data quality and data sharing. I think they are the two main topics. For data quality, what is it for artificial intelligence. If you look around, Google data. Data equality is mentioned by dimensions like good call data. It is close to the purpose of applied at visual intelligence. It is very up-to-date. The date they sold us is reliable and well captured and maintained. There are processes that tell us with quite rigger. Yes, that's within the terms. There's a dimension that we're getting the furnace. The quality of the data towards the people with disabilities and we're not a minority. Obviously, towards women and towards any gender, age, whatever. There's no metric to establish where the data set is training artificial intelligence. For the whatever use case there is. Yeah. That's a good set of data. The other challenge is data sharing. If there's no data sharing, there will be no artificial intelligence that covers lots of use cases that we would like to address. Data sharing is also a difficult challenge here. So we want to share data? We have to do it is freely and wholly. Sharing the correct information with my data. We can withdraw my profile. Can I make variations in the data how the variations really get represented. This is a real challenge. We feel a risk and insecure. Sometimes even -- with the discriminated. I think there's no way back. We can really go back. I think the same happened, if you remember. When cybersecurity and one technology came and securities and Internet came along. Security was -- we all felt the risks of using our credit card or wet browsing or whatever. We were always all the time going to be attacked, hacked, something was saved. It was for a long time, it was on us, the users that was the responsibility was placed upon. Like you need to learn about anti-viruses. You need to learn about how navigate in the safe way. You need to know how to get to your bank account without getting into trouble. Whereas now is more or less we feel more or less safe and secure in the

environment. We do everything in the Internet with no fear of getting really into trouble. Not even equal now represents the threat to us. So I kind of imagine a world in a few year's time when technology actually protects us from the bad uses of intelligence of artificial intelligence. So we will be told whether the picture is fake, whether the voice is being cloned, whether a news -- basic news is not intelligent. It is not real. We would be told when we've been -- I think there's been a world of opportunities for the industry to grow into with knowing in a few years, we will be protected.
>> A lot of things. Thanks for sharing with us. You know, the three main pillars and equality and data sharing and case studies and maybe the need for benchmarking and metrics to make sure they are being implemented. I like inclusive and taking into account minorities and other collectives. Thanks for that. Now I would like to turn to the next speaker, Daniel Casasp. He works at the disability forum. It is the rights and conclusion with disabilities. How do you view the challenges of AI for the community. There's the persons with disabilities. The United Nations convention is one of the first human right treaties that gives access to technology for the human right. The UN special had a report on artificial intelligence and highlighted the potential and in all of the work that we do and we see there's something really good and interesting going on that can really make a change. What's really interesting about artificial intelligence and what is embedded, all of the features are also part of the mainstream product and services that we use in the daily life. It is not a separate device that we use. Something that we carry with us. It is normalized to find anywhere in the world. Also there's really a potential on it. I have to say also there's some concerns that we have at the same time. For us here, we work at accessibility and technology. We can be on the same page at why it is an enabler. If we look at picturer picture and how society understands AI, I have some concerns. The first one is that artificial intelligence alone is not the solution to accessibility. When we were discussing here, we did not say we cannot get in the accessibility. We don't find and have the technology. We cannot guarantee it. We don't have any awareness and training. Part of our work is not to say that you have to implement the solution. It is to convince people for accessible solutions that exist. The thing needs to implement. With AI we change certain mindsets. I'm not that confident on that. This is the first thing I wanted to raise. And I think it is important. We need to really see that there's a huge potential. There's a transformation in mindset and society in general when it comes to accessibility that still needs to take place and that AI, per se, will not solve. The second thing is that for many businesses and companies and society in general, using AI is basically in some most cases to reduce cost and increase the presence which is necessary. The main goal is not always to improve the user experience. There was a really interesting report published by the OECD on the employment and AI that highlighted practices and tools that can be used to make sure persons with disabilities can participate in the park. There were some things that we're highlighting. The AI solutions for the specific case were not receiving enough funding. There were not enough professionals that you wanted to work on that. Sometimes developing the good AI solutions would require the resources and money. We don't know if the market is ready yet, going to support this efforts. So another thing that I wanted to highlight. The third one also is that the positive potential of AI for persons with disabilities which is clear and I think it is able should not divert the attention from the challenges that exist in mainstream AI. There's no barriers being created. That can create part of the discussion. I can give a personal example. It is applicable. My credit card got blocked. I live in Belgium. I

wanted to go to the banking to get it unblocked. We cannot do it. We just need to find a phone number. Okay. I'm going to call. That was not a person there. There was a robot. First one and first two. I tried for a long time. What can I do? The algorithm was in the case was not really understanding what I was saying. This could happen to me as a foreign person. But also a person who has a speech impairment that has an algorithm that does not read. We're talking about accessibility in mainstream technology. Because what -- it is really good to have a specific devices that can really support inclusion. We need them. If we're not taking into account the bigger picture and other new products that all citizens are using and we ensure they are inclusive. We can have a problem. This is one of the barriers that I wanted to mention. There's many more. And the last thing is that AI for persons with disabilities should help to make life letter. We need to understand that in some cases, the digital solutions will be really positive. In some cases, this is the example of the bank. The person would prefer to have physical contact. It is -- I don't want to draw like a can. I think you'll degree there's many positive things about it. I think it was interesting to bring this -- this perspective. There's also the discrimination. I think there's other colleagues who will talk about it. These are the initiatives.

>> Exactly. Daniel to continue with you, I would like to ask you the way forward for responsible use of AI, especially when it comes to people with disabilities.

>> Here, there's part of our work and like we representing together with other organizations persons with disabilities when it comes to accessibility, our experience has told us that legislation, standards, and regulation is important as a starting point. I think that sometimes leading to the market does not work. We've seen how -- that was the case in the U.S. with the legislation and accessibility that we made a change. This is not enough. You can comply with the legislation and standard and not having the usable product. It is -- as it has been said. There needs to be a change in mindset on accessibility as a process that needs to exist to really reflect on how you are designing the product and how it affects the users to engage with persons with disabilities. This is also key. Because as you had said, these the expertise of lived experience. And when any product is being designed or serviced, you are assured this is done in the most accessible and inclusive ways. That's many good practices and many companies who do this and others that don't. This is an area also when it comes to AI, there needs to be proper testing. There's a certain level of saying how inclusive is the solution? How it works? Is this really what we want to achieve or not. There needs to be more control and transparency on the way the technologies are being developed access to the data, having diverse data. This is also really important. So these are some general ideas.

>> Things -- Daniel really to make the user experience or at the core of the solution is very important. To build inclusive data sets, especially when it comes to mainstream services like all of this. We're going to have more during the panel discussion. Now I would like to turn as well to one of our Rejon line speakers. I would like to give the floor to Marie Ignacio. How do you think the deployment of AI technologies should be guided to make sure it aligns with the principles like the disability rights promoting inclusivity and avoiding the attending bias or discriminatory. Following what Daniel was mentioning.

>> Yes. Of course. Thank you for the question. I would like to express my views in eight points. I've tried to increase the number. All of them are important. I hope you bear with me. The first one is in order to ensure inclusion, we need to create from the beginning. As it was mentioned in the introduction, we should not need to solve accessibility after technology is the

same. But rather sign up with accessibility right. Fors are this is absolutely necessary. I'm going to the next point. It is the collaboration of persons with disabilities. It would be also users. We're not speaking solely about solutions that are the same purpose with the evidences. Also regular intelligence. It could also be potentially used papers. So the collaboration as well as disability such as the around the world is fundamental in order to ensure representation of certain groups that will be users of the technologies. Also to ensure the testing isn't right. Now that it includes the perspectives and point of views that are necessary to ensuring collision. We cannot expect the market to solve itself. We need to press for ethical standards and regulations that guide the market in the direction that we needed to be guided. This is where we would need to not only establish to senders and regulations for AI-based solutions, but also follow the ones that already exist, such as the WCAG standard for web accessibility, for example. We should also in our perspective ensure that area. This is the point of view that's necessary to ensure the portion and will not be present. In order to ensure inclusion, we need to include all people. It sounds obvious. We know it is not. We need to push in order to get there. But -- yeah. Of course. But also I would -- if we -- go a bit further from, you know, policy and legislation, we also need to ensure that testing is robust and includes the people that we are trying to include. Now we would need to ensure robust testing and validation before the solutions are launched to the public market. And, of course, aligned with that, we would need user feedback mechanisms. If we want to include people, we need to hear how they their salespersons are. I'm not a person with a disability. I cannot ensure that it is a accessible. I can follow all of the guidelines. I might miss it. It will not be enough. We need to hear the voices of the people being impacted. They are mandatory. Of course, we have the training, education, and people can actually know how to use this in the best way possible. Because know that technologies are not the solutions. They are a meaning ofs that improve lives of persons with disabilities. It should not be the end of being themselves. It in order to support them for being an asset, we need to train the persons with disabilities how to use them in the best way possible. We have a great panel. The first continues mentoring and auditing of all of the deadlines and policies that we're developing is fundamental. This is the only way to ensure continuous improvement in what we're doing. That's the main point for us.

>> Thanks a lot. Now I would like to turn to Djordje. The founder of SignAvatar. Now we're going to talk on deaf communities and how your project is enhancing communication accessibility. There's an increased demand for sign language interpretation. How does the technology address the need and why it is empowering the interpreters rather than replacing them maybe. As well as there's significant gap in accessibility when it comes to public places as well. I think your solution really tackles this specific issue. How and why do you think that this is the case and what's your -- you know, your plans for the future to expand your product. It is accessible and widely implemented in public spaces.

>> Hi. Hi, once again. You mention it is not the interpreters. I hereby say hello to the interpreters that have been us for the last few days. I would never want to replace them. They are valuable as they can be. Our goal is not to replace them. Have them in the places where they couldn't normally be. There are many reasons. There's a national shortage of interpreters everywhere. Not just in Spain or Serbia or the U.S.

There's little of them. I'll give you a short example. Less than people in the room for the entire country which is 100K deaf people. That means you cannot

have an interpreter if you wanted to do anything related to medical, anything related to courts and laws and stuff like that. You need interpreters to be there. You don't need interpreters on train stations if they are necessary. They need to be at the doctor's office. Because of that, because there's a national shortage and the technology has gotten better, that's why we believe that AI can help us bring interpreters. We want to scale them and not replace them. That's the first thing that I really wanted to address. As far as -- as far as the panel of questions asked. The second thing is what we really wanted to do is how -- like I'll give you a short intro and how our company started. Our grand idea is to enable all content out there in sign language. Imagine playing a video. We want to do the same thing with sign language. That's the big idea. That will enable education, content, media, and having fun and all of that we want to enable them in sign language. That's a really long process. Like the -- what's a big issue with that is the adoption. Many deaf people know about previous avatar users for sign language. The truth is they were just bad. They couldn't represent the nuances of sign language. You really cannot identify as a deaf person to do something like that. Now technology has gotten better. Today avatars can and really should capture the nuances of sign language. That's why we talked to a bunch of deaf people and deaf organizations. We asked them. We have our end goal. There's going to be translation of everything. Realtime generation. That's a long way down the road. We will build the system and technology to be able to help them. They will do it in a way. That's why you started with the transport. We mentioned the first product. They can represent a deaf person. That's the important thing. Especially among the younger generation. After our first survey, after the first implementation, they did the nation. Let's say the survey among deaf communities. We got 85% positive results. Which is the thing. A really cool thing. We want to implement this and help the younger technology. They can basically have everything accessible for you.

>> That's amazing. Thanks a lot. Now since we're short of time, I'm going to turn to Carlos Duarte. Basically they will be flowing what they were seeing we have human replacement. In particular in the context of digital accessibility, how can we achieve the balance and foster between humans and AI to create a more equitable landscape for all. How can we make these harnessing the AI capabilities while mitigating the potential. Let's start with augmenting. That's probably something that will make us a lot more comfortable. AI instead of looking at AI as replacing humans and having AI augmented the human capabilities. And I think everyone can relate with -- a non-disability-related example. A related example. If you go to the doctor and the doctor uses an AI based expert system. The AI system that looks at the next way, for instance, for the CT scan and detect something there that might have evaded the doctor. That's one way that AI can be -- in fact, there are a lot -- I wouldn't say a lot. There are products starting to appear. There are -- I won't name the brands. But most of you probably are aware that there are already applications that you can use to describe the environment around you which is really useful for blind people. We've seen yesterday during the pitch addressing people with speech disabilities. Deaf people. So there are a lot of things out there already that can augment your ability. And to try to shorten this, moving a bit on how can we harness this without falling into the pitfalls that AI can bring. I think here I'm going to start quickly by addressing one of the issues that raised which is fairness. That's definitely important. This is all related to ethical development of AI; right? The examples that we've seen yesterday during the pitch and those uses of AI as assistive technology, they don't really suffer from the issue; right? They use data from users with disability. They are

addressing a problem of users can disabilities. But those are going to be the major developments in AI. They aren't going to be the major products. And those products for those it is important to ensure the fairness. It is important to ensure it is representative of all potential users. So the system isn't bias against user. We need the data to consider equally all abilities. Here's the current trend. AI is a huge field. It is not new in any way. It is more than 50 years. These models do create an issue. This kind of AI models. It is stuff they can't explain. How they come to the decision. It is really hard to trust them. If they can't explain how they come to the decision. So if you -- if you hire an expert, you expect that expert to be able to tell you how it came to a conclusion. Those models can do it. Inclusive researchers are developing AI models to explain the conclusions of other AI models. We can get into the loop of AI trying to explain other AI. At least we can try to ensure transparency of the models. If we clearly state on which data that's the minimum that we can do. On which data was the model trained. So that we can better understand what to expect from it. Another -- very quickly -- another two issues. Security of the data that's really important also to ensure trust in the models. For transparency, we also need to explain how do we capture data, how do we secure the data, so that people are more comfortable in using. And a very important one, accountability. This is something that it is really not well defined nowadays. When a model makes a mistake, who is accountable? The service provider or is the company that develops that model? This is really a gray area now. To finalize, we've all mentioned about the importance of people with disabilities in the process. I want to highlight something. This is following this morning's panel. It's about education and training. A very big show of events. People that pitched yesterday, who works with AI? Okay. About ten people or something. Everyone else we don't need to create awareness. Those ten people here are probably aware of the importance of accessibility. But AI scientists, AI practitioners, they -- very likely nowhere in their training on their education and their input about accessibility. We're seeing that currently with computer scientists and programmers. We were just discussing this this morning. AI and accessibility is part of the computer science. It includes topics in AI. They don't include topics of accessibility. They have topics of making or taking part on the accessibility courses. They couldn't find people interested in it. They mix the AI and accessibility. AI is really -- nowadays perhaps we can bring people into accessibility through AI.
>> Exactly. I mean it is really fascinating. You know, I could talk for hours. I need to move to the next speakers. Of course, it is a big panel of seven speakers. That's why. I would like to give the floor to Paulina. I would like to ask her if she's working with people with hearing loss and I would like to ask you about which is the concrete impact that you think about AI having with people, people with hearing loss. Especially how we have been talking already about inclusivity. Especially inclusivity and accessibility in the specific field of people with hearing loss. The floor is yours, Paulina.
>> Okay. Thank you for this question. First of all, AI has potential to grant accessibility for individuals with disabilities, not only people with deaf and hard of hearing, but I would like to focus mostly on the people with hearing loss. One specific artificial intelligence can make a difference for people with hearing loss. But, of course, not only. It is in speech-to-text technologies. Which are increasingly enabled feature on platform like Zoom, Microsoft Teams, Google Meet, and smartphone application with the -- life transcript. This is, of course, an essential tool for everyone with hearing problems and not only including me. We as people with hearing disability, we are -- that we need a visual support from what is happening the services to be

real-time captions making it more accessible in various settings when human captioning is not possible, because of can be for instance, financial reasons or it is happening right now. If a public place when we meet someone on the street and that person needs to ask us about something in the moment. That's why automatic captions work perfectly. There's some limitations that maybe we have a chance to say more about it. Also this is not -- not that this only facilitates, but the communication, but promotes inclusivity. It is also increasing of automatic captions in less common languages. It happens also such as in my example in the language, because I have experience of using automatic captions. I can give an example. Then comes to automatic captions in the languages. There's a step for that. There was perfectly seen in remote education and work, of course, during the pandemic. Because in an instant, we as a hard of hearing community, we had to adapt to the situation. We had to somehow get access to the information. So it happened through the automatic captions. There was a lack of human captions. This was one of the positive aspects and impacts that generates for hard-of-hearing community. Also secondly the AI has the possibility to customize experiences based on individual preferences. Because I'm working within a moment too. I could give an example, for example, and adapted the platforms that uses AI to dive us learning styles, including those of student with disabilities too. So this platform can adjust content presentation and provide visual aids and can offer three times the feedback. It is worth mentioning the devices as they can be tailored to individual preferences. It can be sounds of the voices. Of course, there's again some limitations. But this means also that it ensures a more personalized and effective experience for users for hearing loss. We have the situation and the conflict arises making access for everybody that has different experiences. Yes. I don't know if I have time to say more about the challenges and pitfalls.
>> You know, I think we're short on time. Yeah. But maybe in the wrap-up I'm going to mention some of the challenges. For sure we're going to further the discussion. I think just the panel could take a few hours. So I think I would like to turn to our last speaker today. Miguel, maybe -- so we have been talking really about how AI can effectively contribute to accessibility and as well like really how we can see AI and having a real impact in our lives. It is not -- it is really a use case that we have on our daily lives. Rather it is something that we told. We cannot see an experiment on ourselves.
>> Thanks. We're running out of time. I'm going to share very briefly my own use case. I started working on ICT in -- with children with disabilities in the 1995. And our mission in the unit regardless was the early detention of the ability. It was very hard. Children very low children. The newborns may have visual disabilities, hearing disabilities, cognitive disabilities, and this is very hard. We're going to take into account accessibility opportunities. And the right to develop and to play, to learn, and so on. That we started building the first information systems, ICTs in the middle '90s. It will start to be useful. We were able to establish some kind of automatic correlations in the development with your children, so that we can take into account some kind of accessibility and learning opportunities. Artificial intelligence more and more, and the solution starts to be cheaper and cheaper. We have opportunities for appearance to be able to monitor the children according to this learning models based on semantic models and other techniques so the system was going to be able to give us more information about the perspective responsibilities of participating. They have the right to play. We have advice on accessible toys, so that the children could also play and enjoy learn and so on. Artificial intelligence again came to the state. How do you discover accessibility through interaction? As children could not interaction. We start to build. Right now

for early detection of potential in the new development, thanks to the interaction. This intelligence is private, because we are banking on local reasoning. This is also local. Because we are using single electronic devices on 3D printing. We have been able to inform your knowledge, because the knowledge about the development and accessibility needs in the children when they grow from zero to six years old. It is hard to be acquired. It is a standard test. It is not ready for that yet. So this use case, sorry for explaining it so fast, it is applied to everything. In terms of accessibility, it can monitor in a way how we interact with the content and can provide personalized accessibility. Accessibility means for all. But we know everybody wants the same kind of interaction. This is a very good opportunity in this sense. Because depending on the different channels to communicate, children, adults, and people, the information in a private way from ourselves can be customized and adapted according to everyone's needs besides the expectations and rights to participate in an equal work. We will talk about ICT for all. I think it can be a powerful, private, ethical area in the way the impact and interaction and participation has got more and more.
>> Thanks a lot for summarizing and going so quick. I would like now to wrap up the panel. I was counting to have a bit of time of Q & A and panel discussion. It is fascinating. I would like to wrap up. Really looking into how the panel we have been highlighting. All of the panelist have been mentioning useful case studies, like for people. Then, as well, we need data fairness, data to ensure the ethical development of AI and this means inclusive data sets that really take into account all minorities and people with disabilities. Like female representation and so on. Like another key point. Accountability as well as for when it comes to AI developers and service providers as well as benchmarking when it comes to ensure that AI algorithms are inclusive with people with disabilities. As well as include people with disabilities in all of the discussions. Like from the early product development and raise public awareness. Testing and evaluation. You were mentioning as the mandatory when it comes to develop in the products like I'm going to use for the mainstream. They just naturally started it with the disabilities. The need to have the features and ensure those features. Make the user experience at the center of when those are developed. And ensure the universal design and abscessability are taking into account from the early stages of product development. I would like to thank you, all of the panelist, all of our esteemed panelist and audience. I'm sure you have plenty of questions. I would like to encourage maybe after in the networking break to join the speakers and ask all of the questions that you may have and stay connected. Thanks again for having me. What I would like to mention really briefly is that we are intensively working on the promoting of using the technology from accessibility. On the multi-media and digital technologies. This is the lead group on human factors and ICT accessibility for digital inclusion. It works to mainstream the consideration of accessibility when it comes to multimedia standards, technologies, and services. That's as well. These are the next topics that we're going to have here in the metaverse. We have the focus group on the metaverse working as well on accessibility making it accessible for everyone as well as on ITU study group. Last but not least, of course, I want to mention that ITU's effort with initiative that provides a unique platform to identify the practical applications of AI and help scale the solutions for global impact to really help capitalize on the latest advances on AI machine learning to help solve some of the humanities bigger challenges. One of them being to ensure when developing the new technologies and the people with visibilities are really taking into account in all of the process. I encourage you to check our AI for good person

online. I already mentioned it before the start of the session. I would like to welcome you. Not just the break, but many discussions together. Thanks a lot. I look forward to the discussion. Thanks.
>> ECMEL AYSU SÜRMEN: Thank you very much for all of the esteemed panelist. Now I'll start inviting to the stage our next session. I would like to invite Pilar Orero. Can we have a bit of silence please? We have the next session right away. Thank you. Okay. We're almost there for the metaverse session, which is the final session today before closing. We have Dr. Orero and Dr. Matamala, professor and director of AccessCat network. We have Dr. Christopher Hughes, director of computer science at Salford University. We have Renaud di Francesco, from Sony. We have Mr. Ivan Rejon. We also have Morgan Friedriksson and Ignacio Pose.
>> Thank you for inviting us to be here and ITU for organizing the event.
>> PILAR ORERO: Also to give the floor to the metaverse. It is a bit of science fiction. If we don't make it accessible, what's going to happen with the Internet. I'm going to give you an illustration for the metaverse. The metaverse in ITU. The metaverse for ITU is a virtual world involving unified ecosystem which is based on the network and enhanced reality systems. It is massive experiences to participates during the digital interactions. A new value generation of opportunities for organizations of participating in the virtual world. As you can understand a bit very much for the IT urk and for Europe, the metaverse is citizen-centered. With this, I would like to start the panel by introducing all of you. I asked each of them to think of the example of the metaverse. To me none of us really can pin point what is the metaverse for us? What is the metaverse for us? Yes. First of all, who are you? And then give me the definition of -- an example of the metaverse, will you?
>> Absolutely. I come from economics and not link to the technology side of the request. I represent a company called Pangeanic. We venture into private AI. We've been working for the last five years in the natural language processes. We developed the models and focused mainly on translation. Given the latest development, of course, we have to venture into a whole different spectrum of services. Yes. Private AI was the focus over the last year since the eruption of GPT; right? When it comes to the metaverse, given my background, I would say that the definition, of course, we are already set. But we have to let a little bit of the market tell us what it will be. Probably to the finish line, we'll get to the full extent. Maybe five or ten years. We're lucky enough we are going to get a regulatory framework to define or at least -- at the very least tell us where to build from. It will cup a little bit the growth or the fast development of it. But at the very same time, you'll give us the possibility of the developing from an ethical point of view. And -- yeah. I mean I know when it comes to panels, normally people expect to fall for presenters. A little bit wild. I'm going to be really conservative about the definition. Because it is still too early. We have to let the market tell us a little bit where it is going to go. Another examples. I work with them a lot of time. We have AI systems. We see the last week of the representation of Gemini. It is already recognizing not just the speech models, but also images. We already have the possibility of taking information that I can see towards the creation of content and the creation of translation in this case that would give us definition or definition of environment that we're surrounded through. That would be the first use case that we can look in to.
>> PILAR ORERO: Morgan?
>> MORGAN FRIEDRIKSSON: First of all, I don't agree with the definition of the ITU. Of course. That's a given. I think it is a bit narrow. Why all of the focus on only virtual? So we have this idea that the metaverse is virtual

reality. We experience it. But naturally, the person who is in this virtual reality needs to control his environment of it. All of the sudden we have the real world imposing on the metaverse; right? Also I should tell you who I am. I'm sort of a jack of all trades in these types of environments. I used to work with films. Then found that the game development company. I've worked with developing these 3D engines that we used to build these types of things. From that, I moved on to building the natural language development and dialogue systems. On to situated dialogue systems and on to doing sort of this -- try to solve the problem of fusing the digital and the physical world in different ways. That's sort of the interest for me here also. How do you get this physical world around the virtual or augmented world. To make sense. To whatever system is driving the world to world. It is trying to get the information or the Internet to be experienced in a way that is natural for us as person. That's sort of it. If we experience it through our eyes or through our ears or however, our hands, then we're going towards the metaverse.
>> PILAR ORERO: Can you give me an example of the metaverse? A complete example of a metaverse? Because up until now, they might be thinking what is a metaverse?
>> MORGAN FRIEDRIKSSON: Yeah. You have all of the Facebooky ones or the only one that was the same 15 years earlier. It is just nice looking and not as popular. One that is working and is not considered a metaverse is the Pokemon communities. Not the gaming itself, the people who are around this game or any type of computer game where people are actually playing with each other.
>> PILAR ORERO: Thank you very much. Since you mentioned Sony, Renaud, it is your turn.
>> RENAUD DI FRANCESCO: Okay.
>> PILAR ORERO: Who are you?
>> RENAUD DI FRANCESCO: Renaud di Francesco. I happen to work for a company, Sony, which is a member of the ITU. Thank you to the ITU. Thank you to the Spanish presidency. We are honored to be part of the big move towards accessibility. In general. Sony is committed personally and company-wise to accessibility. It makes my job easy. We started in 2007. On accessibility. Under the Portuguese presidency of the European Union. Now this is the Spanish presidency with stake in Iberia. Very good for this region of Europe. Where accessibility was triggered and where accessibility is caught up and various with the European accessibility center now to be located here. That's great. Now accessibility is a matter which will stay and in whatever we do and we at Sony, we can say two things about -- to be specific today. The metaverse question mark. Answer? Immensive experience. Beyond that, it is difficult to say anything else. I'll give two examples. I'll be concrete. One is the 3D rendering of image. When you listen to consult in a consult room, when you are next to interpreters or music, singles, musicians, it is a 3D rendering. You are immersed in the music. It is not flat. It is immersive. So we have devices today in the market which are providing you with a 3D rendering which is your living room or kitchen or whatever. How do we do that? It is not just linear, it is 2D and 3D. We sense the room. We create a 3D field in the room to every point in the 3D space we can compute the audio and we can render it. Of course, not analytically every point that we give the impression it is done everywhere around you. The second one is also abuse and known to every one of you. It is navigating the universe typically in gaming. We have to recognize the de facto. There's a metaverse which is called the gaming. And actually it was taken up already. It is not for ITU. This was a use case set as a goal for the fifth generation of communication. Which is being rolled out today. So 3G, 5G, use case navigating the universe of gaming with a head-mounted display. You

need it to do that in realtime. So audio, gaming, those are two cases present today. I'll stop here.
>> PILAR ORERO: Thank you very much. We think of the metaverse with the Internet and not audio cue. Thank you for that.
>> IVAN REJON: I'm Ivan Rejon. I'm happy to be here. I would like to agree with you. I think that you made a very valid point. There's no lack of definitions when it comes to the metaverse; right? So I think at least for me, this is blending the physical experiences. When it comes to Ericsson, we have a more limited view because of the business. I will elaborate on that later. We think that to provide the experiences, we need the reality and mix of reality. You mention some important components. We think that connectivity is absolutely key in trying to -- otherwise there's no accessibility. Even though obviously accessibility can have different angles. During the presentation I had a chance to have a view of the network performers in the room. According to the test, the download the speed is below 20 megabytes per second. It is grateful for augmented reality and latency is unacceptable. The metaverse will be independently of the definition would be absolutely impossible here. Saying that examples from people in their 40's and 50's like me, the metaverse could be second life. I remember. I create my avatar in second life maybe 15 years ago. Maybe he's still alive; right? Another exertion. Maybe not have sophisticated with all of the communities. This is a version of the metaverse.
>> PILAR ORERO: Thank you very much for the terrible news that connectivity is going to -- Christopher. You are next.
>>CHRISTOPHER HUGHES: Thank you. It is difficult going after impressive people with all of the good ideas. I'm threatening to give it my best shot. I'm director of computer science and engineering at Salford University. At heart I'm a computer scientist and technologist. I like to build things. I put everything out there. I'm not an accessibility expert. I'm not a standard expert. I'm a computer scientist that's good at taking ideas that people have on paper and turning it into a working demo to try it. To me, I think it is a really interesting conversation already. The first thing I thought was really interesting is when it was referring to it as a metaverse. Generally in the world, we tend to talk about the metaverse. Fundamentally, I think that's wrong. Actually the metaverse is a great kind of pool of ideas and concepts. There's no kind of -- it is not a place that you can go to. It doesn't really just kind of exist. We can't go there. We just got different kind of implementations and different ideas about how we might be able to put these things together. I also wanted to build on a few of the ideas that have been mentioned already. So I think defining the metaverse is really difficult. I thought it was really interesting. The ITU has a definition that I haven't actually come across.
>> PILAR ORERO: Only from last week, huh?
>>CHRISTOPHER HUGHES: Last week. Like everyone.
>> PILAR ORERO: Last Thursday. >>CHRISTOPHER HUGHES: I'm always behind on the times. It does sound a little bit flawed. To me, I wanted to pick up on some of the things that are important to me. Firstly it is about collaboration for me. I'm not sure it's been mentioned yet. It is not about an individual experience. It is about being able to interact with other people and use whatever the technology is, whatever the environment is to be able to collaborate, work with other people, interact, socialize, and those kinds of things. I might have a real bug bearer. If we're going to use the metaverse for something, there has to be an advantage over being IRL, if I'm down with the kids, in the real world. I mean it would be absolutely pointless. I find myself at work when we're on the teams and Zoom call meetings. I realize we

have sat in a different meeting room all on the same meeting. Just sat behind our laptops. You suddenly realize this is synonymous with the idea let's just sit in the same room in the real world is a better experience. Whatever we're doing with the metaverse, it has to provide advantage over what we've already got to me. Obviously we can probably imagine that being able to be remotely able to collaborate and engage with people from a distance and adds a lot of value. I'm going to wrap up this little bit with my idea of what a metaverse might look like. So being a technologist and computer scientist, I kind of come from the background of virtual reality. That's the world that I kind of live in. I'm going from virtual reality adding the collaboration and adding the interaction. It is where I feel the metaverse came from. It is kind of unfortune. Somebody has mentioned the second life. That's the example I was going to jump on. Actually that was pretty good as a first implementation as this kind of thing. Actually I can go one better. That's been replaced by now. It is still living and thriving. It is built for entertainment and it was built for the next generation of the Internet where insed of being able to chat, interact many some kind of physical kind of layout and location. Yeah. To me that is quite a good example.
>> PILAR ORERO: Thank you, Chris. Annasome

>> ANNA MATAMALA: It is my turn. I'm Anna Matamala. I'm the director for Access Cat Network and professor at UAB. We give support to the groups to transfer knowledge to society. To transfer our research. I don't have a clue about technology. I'm not an expert in that. When I imagine the metaverse, I like to take the user perspective. When I imagine a metaverse or this virtually immersive world, what I want, that's a vision, it is a place that I can access easily. Let's make it easier. Where I can personalize and customize my choices. So this is the way that you want to move to interact in this immersive experience. A place where I can choose an avatar, for instance, and represent myself in the way that I want. With certain physical features with certain personal features. I choose my representation. It is a place where I want to navigate freely. That means navigating in different ways, where I want to interact and I repeat what Chris was saying. Coming from the background, the metaverse is a place to go and learn languages, that's an example. Where I can interact with people from other countries from other cultures. In different ways. I would love to do that, for instance. I don't know if that's what you were asking. It is not a technical definition. I that's what I would like the metaverse to be.
>> PILAR ORERO: Thank you. I hope more or less you understand the metaverse. One of the things they have to do there is when they develop in the use cases, what I'm doing is going through all of the use cases and adding accessibility. For example, add to any use case accessibility. And the strangest use case that I had to accessibility in a metaverse was the air conditioning system. The air conditioning system takes the heat from us. And brings us back yet for the air and the heat that we need according to our needs. I thought it was very strange that air conditioning could be a metaverse. It is. It is user centric. It is -- it takes the body heat of not us, but all of us together. If we let -- you know, we adjust itself according to the body heat. That's a metaverse as well. Just to make it more complex or more confusing there's an example of what ITU considers to be a metaverse. Something interesting in Europe. Now that we're in Europe. They have a definition beyond the metaverse that's called the city verse. It is not to do with cities, by citizens. For Europe, the metaverse is user centric. Uh-huh. For me, because we live in Europe. One of the moist -- I don't know. We speak different languages and unified in diversify. The first

question is for Ignacio. You are working with a company and models. Chat GPT. Do you think that -- I speak to myself. Not to you but your avatar, okay. There we go. Can I speak? Do you think it would be possible to have languages and languages validation in the metaverse in the future. Is that impossible?
>> IGNACIO POSE: Definitely not. If you asked me a year ago the interpretation of too long and difficult to get. We heard a speech. We would have to transcribe the speech. From that we have to take a web system on the destination language. That's just too long. It would take us too much time. The immersive perspective will get lost in the way. I would to be impossible. Just difficult. Not really -- a nice. Now as I said before, from last year, a year ago, we found this little thing. It was Chat GPT. All of the large language models came along. The process has been reduced by 80%. We'll make the quality content that would replicate immediately. They have to generate immediately what it gets from that. So the pipeline has shortened, like significantly. So, yeah. Definitely. To your question, I would say communication in that scenario can be nice and easy. Now that's a short answer. What's the challenge that we have? We are having difficulties at the moment to actually get quality data to make simple machine translation models from Spanish to English. It is basically one of the combinations that we encounter every day. Two of the most spoken languages in the world. We have difficulty getting data. It hadn't been properly annotated. Imagine when it gets to sign language, for example. There's no data. If there is, it is not quality. It is not good enough. The challenge and when we get to that situation. It is actually fluent and nice and easy to have communication in the metaverse will be when we manage to get quality data. First of all, when demand will sit the way on that mainly. We need regulation. Demand will not post the significant of some combination. Give the example of sign language, for instance. When we get to the point. Regulation will be key. Yeah. Having the proper platforms to annotate the data that will give us the quality models.
>> PILAR ORERO: Fantastic. The previous gentleman was the avatar in sign language. You are an expert. Like, for example, an interaction with humans and object. I was thinking how would be the sign language interaction? Not of Renaud and myself, but of my avatar with Renaud's avatar or with another object. Is that possible?
>> RENAUD DI FRANCESCO: Okay. Not considering the resolution.
>> PILAR ORERO: Not that. The languages small and large.
>> RENAUD DI FRANCESCO: Okay. The interesting thing. Then I'll go back to the previous speaker. That was actually a lack of data. It is true. But what's happened with all of the models, the transcription, the quality transcription of data has been -- it is so much easier. So much cheaper. You can do -- now you can do good transcription of sound. At a 50th of the cost. I think it is even -- it is a bigger factor in just the date though. If you have some sort of a motion. A motion lab. Then you can add some stuff on top of that. You can go from producing, like, ten hours in a month to producing hundreds of hours. Relatively cheaply. This is going to happen fast. You can do it -- we're working with semiautonomous vehicles. There are some interesting thing there is. What we're doing there also is not all of the data is from real world situations. A lot of the data is from simulated situations. You can do the same with these types of situations. It might not be there today. It is going to be there soon. I might have to eat the words. I'm saying two or three years. Something like that.
>> PILAR ORERO: Thank you. This is fantastic. We have the language communications solved. The metaverse could be now. Accessible in languages. No problem. Also in three years time, by beyond the year, the next thing is

that it is the industry and the manufacturing industry going to cut up and develop what we need to interact. Clearly all of this is the architecture. Beyond that, you would need the devices. Another device is going to be there.
>> MORGAN FRIEDRIKSSON: On the examples I gave, they are already there. So the questions are more on the usability point of view. Let me take you back to the era which some of you as old as me remember when we had to first generation of intelligent washing machines. Which were like 2001 space odyssey. You didn't know which button meant what. It was too complex. Too many choices. Too many choices. Which make it not usable. Then there was a second phase where the exploration that lead to the reduction of the essential functions and then people had only the buttons they needed. So my question to you is what do you need? You users. European disability forum. ONCE, RNIV, all of this NGOs are they are categorized. I would rather say user organizations. What do you need? For instance, simple question. Subtitles in the metaverse in the 3D space, where do I put the subtitles? Isn't there a risk that the subtitles are put behind an object? And I can't see them. Or is it to the point that maybe the subtitle and position where I need them to be. I'm sorry. Pilar, this is a question that I ask to you and Carlos in the past. Remember accessibility is not an easy problem. We need to advertise it. What I said for positioning and space. It is the same for the audio description. You have 3D audio. Isn't it confusing that I put the audio description part in your back or far in front or on the left or on the right. It is for the users to tell us for that type of content imagine this is a storytellings in fashion of a game. But you move to a place. Then you have the first story. You move to the second place. You get a second story. You might want to have guidance for going from A to B. It is on your smartphone. Now it is becoming embed in the 3D space, which is a virtual space. Merging real and sin threatic experience. It is for the users to tell us how they want to be guided from point A to point B. They want to have the audio in the back and where. This needs a huge experiment. Which is not huge in quality. It needs to involve users. That's why we welcome this location from ONCE. You'll have the accessibility center for Europe. That's great to have. We know where to look for when we need information about what will it mean to have an accessible metaverse. Back to the metaverse, maybe already two faucets top metaverse which is real today. One is the one that I described which is coming from gaming. Another one is -- it has not been mentioned yet. It is the digital one. Which is in the industrial and B2B world. Where you create a new city, new buildings in the city. Then you have a digital twin. When you want to operate the transport network, telecom network. And any other functions of the cityverse from the smart city side, you have a digital twin. This is something very active in standardization. You saw to name you the exact standardization. But this is also a trend. So for professionals, and customers interacting in the metaverse, you need to have the dialogue and accessibility in mind. I'm sorry.
>> No. It's -- I agree with you completely. In fact. The European commission has been paying a lot of money to create the experiment with end users to understand how they like and where the subtitles are and how the subtitles. I think the person that's going to tell us about that is Chris. We've been working on that for the last five year?
>>CHRISTOPHER HUGHES: Yes. Beyond that. Before that. I'm going to start by being slightly controversial actually and pick up on something that was said there. We're in a spatial, immersive environment. Therefore something if we want to read is quite a person, why don't we just look around? That builds the immerse.
>> It can be guided with the point of visibility and audioability. That's

something we do in the real world. We can put to zero the audio sound around you. To convince you we can do that. We have the noise cancellation technology. It is known to everyone. This is also an increased accessibility technology. Because noise cancellation -- your headphones which you use in the noisy environment when you have the washing machine. I use them when I vacuum clean in my home and on the airplane. This is something which gives me better intelligibility of everything happening around me. It happens with the 3D processing with a lot of artificial intelligence, if we want to call it that way. It is already there. So the question is how do we we combine?
>> MORGAN FRIEDRIKSSON: Absolutely. We strayed away from the subtitle question. This is what the metaverse is all about. If you are going to be immersed, you have to feel like you are there. If we are going to completely replicate, we bring all of the accessibility problems. We have to find other ways to do that. We are create the environment of what's in there. By being spatially there of what's around. I guess it gives us the ability to additional accessibility layers on, yes. About mobility and how you move around in that space. That maybe wouldn't be possible in the real world. I'll jump back to the actual question, I guess. By introduction to the world of accessibility comes in the world of subtitles. Before I join Salford University, I was working in the video. There's so many cool things we can do. We could tie it to part of the screen. We could create it to become part of the screen. When we started playing, it was done from the technologist perspective. It is possible. It must be cool. We think it is cool. I very quickly learned in the world you have to move into a user centric world. It is about the users. It was a real awakening when I kind of joined Salford University. We started talking forever about what we built this. Maybe people don't like what we've built. We better do some user testing. I'll put my hands up. I was naive once. I'm still on the journey of learning about how this user testing world works. But I was very fortunate that we managed to take a lot of those ideas and bring them into an environment where we can start testing them. I know we're short of time. I'll probably just give you the highlights. We've basically been through several projects and several iterations now where at the very beginning we were kind of doing head of web-based 360 video to put captions in different places to see what people liked. We kind of -- it is evolved from there. In our research. We've got to the point where we've now been using kind of eye tracking to understand how easily people find subtitles in different positions. And the real contention seems to be whether or not you should fix the subtitle within the scene so it follows the actor or performers or where the avatar is within your metaverse or whether it should be in your display at bottom. We tend to find everyone is saying if we put the captions within the scene. It is difficult to find where the captions is. It might be a clue. It might be difficult to get to. The person speaking can be behind me. Pretty much all of the studies can be suggesting it be put at the bottom of the screen. Anecdotally, you start to look at this. You start to think about some of the audiences that we're looking at. Traditional subtitles are two lines of text, 30 characters at the bottom of your screen. That's what the majority seem to be familiar with. We've learned a lot of questions. Generally speaking, if someone hasn't used the head mount, they are more interested in the technology. They are not immersed. It is not something they are used to. At the moment, we're finding there's a big pull to put subtightses at the bottom. If we start looking at where the computer game industry is going. Look at them like the last one of us too. I'm not a computer game player. I have to buy the game and look at it and experiment with it. They have made the subtitles part of the game. They've made it part of the action. They are creative. They manipulate

as the characters move and things like that. I genuinely believe we are moving that we've got a generational gap now. We've got the older consumers who are used to two lines of text. But we're now going to start seeing the gaming generation of kids these days who are basically at home with head mounted displays playing the VR games. They are much more familiar with being immersed. I think it is going to be interesting watching where this goes.
>> PILAR ORERO: So we know some results where to put the subtitles or how to get the -- basically what I'm getting at is accessibility in the metaverse is already there. You know, we don't have to -- we can start with an invisible metaverse or not even. To me if everything is yes, yes, yes. Another connectivity.
>> Yeah. I will listen. We are talking a lot about visual experiences. Sound experiences. Then, for example, we talk about the Internet of things. Because the Internet of senses. Because we can also, we are experiments with -- there are three other senses. Touch, odor, and smell. We are experiments to enrich the experiences and better blend the digital and physical world. But then obviously connectivity plays a key role during the preparation of the panel. I was maybe a little bit too vocal or even sometimes aggressive, because without connectivity, it doesn't make any sense; right? And the reality today is when we're talking about another example of the metaverse, the simple one. My son, Hugo, in ten minutes, he will try to play fortnite. He summarizes the experience. He will become angry if he loses. This is a nice way to mix the physical and the -- he blames connectivity. Because Wifi might not be the best connectivity solution at home. Then we're seeing the very different situation across China and connectivity. In India, in just one year, they have stations. I do not want to become technical. Europe in four years and then the U.S. We have not Africa or that we could not have the best connectivity. Also you are lagging well behind. Connectivity is there's having the possibility to make a call. It is trying to expand and to have proper performance of the network in terms of download speed, upload speed, latency. Otherwise all of the fantastic possibilities won't happen. This is a true concern for us. Just to elaborate a little bit further, looking at the logo, we're working closely with them. They realize they can close the experience to people, for example, to deploy. So everybody that we benefit with this. We can bring the best public services, for example. Education, immersive experiences, telemedicine and also to people that might not have the accessibility or possibility to reach the services.
>> PILAR ORERO: Basically it is up to the Spanish government to provide a good robust 5G or 6G.
>> IVAN REJON: They will provide. Companies like Ericsson, obviously. More important and sometimes companies like Ericsson are start-ups who know, you know, what people might need. We spend a significant amount of time also to understand the expectations and experiences and to make this happen. Yeah.
>> PILAR ORERO: This is very interesting. So we do -- for all of that to happen, we do need standards. Right at the beginning, you said that we need standards. We need standards to really start accessibility and to start. What is ITU doing for a standards of accessibility in the metaverse? And for that, Anna Matamala has already written one.
>> ANNA MATAMALA: I'll explain that very briefly. I saw the time.
Time is up. So in one year ago actually in the 16th of December, in two days it will be the fifth anniversary. The focus group on the metaverse. It started to work at ITU. We are different experts from different fields working on analyzing the technical requirements for the metaverse. We translated from different working groups on architecture and infrastructure and virtual and integration and interoperability, security, ethics, economics, regulatory

aspects. But we also have more accessibility, sustainability, and inclusion. That's very important to have a dedicated working group co-chaired by Pilar Orero. And in this working group, we have been very active. We have already ten deliverables approved. Among those, for instance, we had one deliverable on accessible requirements for accessible products and services in the metaverse from the system perspective. Then we had one. Which I had the honor of co-editing, focusing on the user perspective. We also have, for instance, another one linking sustainability and accessibility. So since time is up, I would invite all of you to check the web site of the focus group on the metaverse. Where all of the deliverables are published. I could talk a lot. I think --
>> PILAR ORERO: This is -- basically we were offered for them to give us a work group. They did it straight away. What we've been doing there both Egypt and ourselves and myself is to make sure that we have very fast, very concrete information on how to make an accessible metaverse. Because only when you have very clear instructions on how to make a metaverse from scratch, we will avoid what Carlos was saying. The Internet was born not accessible. Now it is just patches and it just creates a nightmare. To me, yes, industry is always saying. If we don't have a standard, we don't know what to do. You don't have a standard. We have created the standard to make the accessible metaverse by design. Which is how it should be.
>> Can I recommend multimedia moving into the metaverse?
>> PILAR ORERO: I will. The time is up. Because the other session ate this session. So I'm sorry about that. We have to be short and sweet. If you have any questions, I don't know. If not, thank you. I'm sorry that we are so short. But I think the metaverse can be accessible by design today. And perhaps nobody would access to it, because of connectivity. But -- but -- everybody should be aware that we must build a metaverse accessible by design. There's no buts. It has to be that way.
(Applause)
>> Well, to support our colleagues who are doing the hard work of infrastructure, I already mentioned this 5G was made for use cases. Among those with use cases was one head mounted display, gaming using, you know, a metaverse to metaverse. It was a first catch. 5G normally allows for the first cut. You deliver 5G. We are safe.
>> PILAR ORERO: Thank you very much.
>> ECMEL AYSU SÜRMEN: Hello, everyone. I hope you enjoyed all of our sessions. Now I have a small announcement to make. First we will be having -- we will be having the closing session and then we will invite you for a quick coffee in the next room. I would like to start by inviting our closing session speakers to the stage. As we approach the conclusion of this enlightening fifth edition of accessible Europe, I believe our shared dedicate to digital accessibility has never been more evident, let's say. Now it is with great honor that I introduce our esteemed closer speakers, first, I invite Ms. Valentina from the European Office, and we have a senior coordinator for digital inclusion at ITU. We also have Mr. Hernandez, from ONCE.
>> Ladies and gentlemen, thank you for being with us today. As we conclude the fifth edition of accessible Europe, I'm honored to represent our heartfelt appreciation to the government of Spain for their unwavering support and ONCE for their exceptional hosting of this event. We also express our heartfelt thanks to the European commission for the continuous partnership and dedication to the cost. This forum has once again proven to be a platform for advancing digital accessibility. It wouldn't be possible without our amazing speakers, great pitchers, all of you, of course, and our wonderful translators. Thanks to

everyone. We enter around the regional agenda. One of the priorities is on digital inclusion and skills development. We work directly with the 46 member states in the European region and the government and partner organizations to address the unique challenges and opportunities that they have in present. And in the context of the European landscape. As we've been working to build accessibility in the past, the innovation alliance comes to support us in our work. The alliance has been launched this year by director. They have the previous efforts of the office. The centers will seek to identify ways of accessibility using the system approach. As we close this edition of Accessible Europe, the idea of building the capabilities and the collaboration, innovation, and determination that has been highlighted and streamlined. So today I'm proud to say that we have 400 stakeholders that joined us at the accessible Europe. And they were coming from 50 countries. Which is an amazing result, I would say. The Accessible Europe provided a very rich content created by 60 amazing speakers and last but not least, an important element we had a very gender-balanced presence throughout the whole event. So without further adieu in saying this, I would like to pass the floor to my colleague, Roxana, who will provide us with the highlight of the whole event. Thank you so much.
>> Thank you very much. Ladies and gentlemen, colleagues, participants, as we draw the carpet of the fifth edition -- (Microphone feedback)
>> Are you hearing me now? Yeah. As we draw the curtains of the fifth edition of Accessible Europe: ICT 4 All. I am filled with a profound sense of gratitude and inspiration. Over the course of the event, we have witnessed an extraordinary tapestry of insights and contribution for all diverse stakeholders. That join us in the effort to achieve the overarching goal of leaving no one behind in the digital world. All of the shared experience in our projects and in part of the achievements have not only enriched our understanding, but also intensified our commitment to mainstream digital accessibility at the universal design of technology throughout all of the sectors as ICTs are present in all social economic sectors and within the development of ICT products and services, and application from the design. We can make this happen. This event has been an analyzing journey. Together we have strengthen our collective knowledge on the critical topic of accessibility in general. And digital accessibility in particular. It has been a unifying experience bringing us closer to a common language of speaking accessibility. A language that ensures equal and equitable participation of all people. Including person with disabilities and person in vulnerable situation in our digital society, economy, and environment. Europe, Swiss-concerned efforts continues to be a role model in the domain for other region. And Spain an exemplary standard for other countries in the region and beyond. In a world where technology is no longer an option, the aspect of our daily life it is imperative to ensure that each and every individual be empowered by the technology. I repeat equally and equitably to be an active participant in the digital world. Europe's model is more crucial than ever. But each of us play an important role changing our mindset is the first step in recognizing the accessibility. It is a responsibility that we all share. Where accessibility enabled independent living for persons with disabilities also facilitates everyone life in the digital space. Each of us play a crucial role in raising awareness on the topic around us and within our networks, accelerating its implementation, beginning with our own usage of communication. Let's make a commitment to care from this point forward, we would all make the concerned effort to learn and apply principle of accessibility in our daily digital interactions. Let's join forces. Committing ourself to begin not only promoters but champions of ICT accessibility. And together we can create a

world of inclusive digital communication and the opportunity to connect. As we conclude the addition of Accessible Europe. Let's continue to work collaboratively, leveraging our shared knowledge and experience to build a more inclusive and accessible digital future for all of us, present and future generation. I cannot conclude without echoing my colleague's words of thanks and extend my heartfelt thanks to each and every of you. Both those present on site and those who join us online. Your engagement and contribution have been the engine of the event. Moreover, our host, the government of Spain and from ONCE. I extend a special thanks to Blanca, Jesus, Sonya for your invaluable support and tireless work aside with my colleagues in IT Europe and many others. All of your efforts both in front and behind the scene from many months have been instructmental. A big thanks to all of you for your dedication and hard work over this. You have been truly the backbone of the success of this event. Also my heartfelt thanks to all speakers, contributors, and participants in this event. For sharing your experience, your activities, your work dedication, and passion for digital accessibility-related topics and for your invaluable contribution. You are change makers. Playing a role in shaping our world digital future. Thank you all once again for making this event a remarkable success. I eagerly look forward to continue this journey with you as we strive towards creating an accessible Europe and ultimately a digitally accessible world for all. Thank you.
(Applause)
>> I would like to remark the importance of the institutional collaboration. I've been talking about for the last five years. After this event and we start to collaborate very, very close. They have a lot of things to do, to do together between ONCE and Accessible Center, and ITU. The other idea is the importance to collect the stakeholders and here we have ideas and public administration, industry, people with abilities and working on whether it is the best and unique way to connect a more inclusive society. To promote and then yesterday I really like the pitching. It was very interesting. All of the start-ups and the companies. They are developing this interesting ways to promote and do a better life for people with the disabilities. To finish, I think we have tight wind on accessibility. We have legislation, we have professionals, we have institutions. So let's go for a more inclusive Europe and the world. Thank you very much. To all of the team of having working behind this event because without the Europe never happened. So thank you very much. This event is closed.

(Applause)
>> ECMEL AYSU SÜRMEN: Thank you very much. If you want to have coffee, we have coffee and some snacks next door. Thank you.