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ITU Intersector Rapporteur Group on Audiovisual Media Accessibility
Session 361
ICTs and accessibility for persons with disabilities and specific needs thematic workshop

>> Recording in progress.

>> MASAHITO KAWAMORI: Good morning, good afternoon, good evening. We would like to welcome you and thank all of you for joining us today. My name is Masahito Kawamori. I am a Co-Chair of ITU IRG-AVA and also the Rapporteur of ITU Question 26 of Study Group 16, and also a Project Professor at Keio University in Japan.
        In a few minutes, we will start the session. Before we begin, we would like to invite you to watch the WSIS Forum 2022 video that will be played by the WSIS team while we await other participants

to join us. Please enjoy.

        >> MASAHITO KAWAMORI: For the smooth running of this session,
we with like to give you some logistic guidelines. Please note that
during the session, attendees' microphones are muted. If you would
like to intervene, please raise your hand.
        For those people unfamiliar with the Zoom platform, the
Raise Hand function is located at the bottom of the participant
window. Once you are given the floor, the moderator will unmute your
microphone.
        Once you finish your intervention, please mute your
microphone again.
        We will take questions through the Q&A and Chat boxes. You
can access the Chat and Q&A boxes by clicking the relevant buttons
in the bottom bar of the Zoom interface.
        The meeting is recorded and will be available on the Event
page of the WSIS Forum 2022 website soon after the end of the virtual
workshop session.
        All right. Without much further ado, I'd like to move on
to the main body of this session. I'd like to invite three panelists
for this webinar. The first, Mr. Andy Quested is a co-chair of
IRG-AVA, ITU-R Working Party 6C Chair, and also he works with the
European Broadcasting Union.
        And Professor Pilar Orero. She is a Professor at
Universitat Autonoma de Barcelona, Spain.
        And Dr. Pradipta Biswas is also a co-chair of IRG-AVA, and
also the Rapporteur of ITU-T, Question 11/9, and he belongs to the
Indian Institute of Science.
        So I would like to first invite Andy and Pilar to present
on the advanced features of accessibility.
    >> ANDY QUESTED: Thank you.
    >> MASAHITO KAWAMORI: Okay, Andy, the floor is yours. Go ahead.
    >> ANDY QUESTED: Thank you very much. If you can just hold on
one second. As always happens in this case, Zoom is asking for my
password again. And I hope you can --
    >> MASAHITO KAWAMORI: Yep.
    >> ANDY QUESTED: Sorry, apologies for that.
        So as Masahito said, my name is Andy Quested. I am a
middle-aged white man, fairly short hair, black T-shirt, wearing
headphones, just to give you an idea what I look like. And I am going
to do a joint presentation with Pilar, and I will pass over to Pilar
so she can introduce herself.
    >> PILAR ORERO: Hello. I would like to audio describe myself
too. I am 62 years old. I have short, gray hair as well. I am
wearing headphones and a striped T-shirt, blue, and glasses. And
I am white as well from Europe. Thank you.
    >> ANDY QUESTED: Thank you, Pilar. So our session, and a
particularly strange title, if only the world was designed a bit

better, and that will become certainly more clear as we go through the presentation what we actually mean about that.

But just to set the scene for this presentation, part of the work we do in IRG-AVA, the intersector Group on accessibility, is to look ahead, not just to look at the problems that are happening now, but to look at problems that will come up so we can be prepared and start to work towards all media being accessible.

It's also part of the job of the Group to bring people together, and as you see, we, the three co-chairs, are here, and we come from very different backgrounds, and it's within the ITU. But we all work on media in some form or another and how it's delivered. So it's good when we get together so that when we introduce new ideas we can actually make sure they work across all the platforms and wherever they are.

So to set the scene again in this case, there's still a lot to make what I would call 2D -- let's call it 2D at the moment, just traditional media accessible. We are doing very well, but it's not 100%, and it's certainly very patchy in some places. And we are good at captioning, we are getting better at audio description. Signing is coming along, but it's still not universal.

But when it comes to immersive video and new 3D and interactive services, we are just scratching the surface. A lot of the ideas that we may use don't work very well when we come to interactive and immersive audio and video. But we need to listen to others to understand better, and that's part of the job of this session is to get people involved and engaged. There's a little work going on, but in individual silos, maybe, or within different organizations. And it would be really good if we all had a great overview of what we are doing.

We also need to understand the differences in culture and understanding, and understand each other's position so that we can make good progress in this.

But, one of the key things, I left the BBC over two years ago, and -- but one of the great things about broadcasters, no matter whether they are public service, private programme makers, or programme distributors, we have a unique opportunity to be inclusive. And we are going to start with a video, and then we will continue with the session.

(Captioned video)

>> ANDY QUESTED: And I think now you can realize why I chose to call this if the world were designed a bit better. If the world were designed a bit better, we wouldn't need to do this presentation. So the key thing here is design. Today we are experiencing a shift, not just from real to virtual, but to a world where extended reality is part of the environment we live and work in and play in. So it's becoming a part of our lives. And we need to make sure that when it's designed, it's designed with all people and all users in mind.

As I said, some of the additional ideas just don't work. If you just take a captioning idea from a 2D programme and place it

into an interactive service, it's going to fail. You need to do more than just simple adaption. So design becomes an incredibly important area of interest that we need to worry about, and we need to actually think of this as a continuum, as it says here, a virtual -- reality-virtuality continuum, from where we are now to where we want to be, but it's going to continue to be both real and virtual and augmented, I think from now onwards. In with extended reality, what do we talk about? There's a new story-telling paradigm. We have new opportunities. People are beginning to exploit these. I feel from what I have seen, a lot of this is we are exploiting new technology, but only these people that can use it. Although we are creating new opportunities in storytelling and we are opening up new immersive experiences, we run the risk of excluding millions and millions of people. If you like, we could see extended reality as becoming excluded reality if we are not really careful.

So how are we going to go about this? What are we going to do? Let's just have a look at the world as we see it.
(Captioned video)

>> ANDY QUESTED: So some of the things I have been talking to Pilar about and others in the groups is design for accessible media, media being born accessible means you have to design it to be accessible. So content accessibility is about being incredibly clear. Needs clear information. It needs to be easy to use. You have to remember that people may not understand exactly what you are trying to do, and it has to be incredibly easy for them to navigate something that's new without a large instruction book.

It needs universal descriptors, and this is really important. We are beginning to see the idea of icons. We are so used to them as we walk around in life, you walk around an airport as I did recently on the way to the U.S., and it's so easy to follow the signs, no matter what language you speak and which territory you are in, and the not just because they are all in English. It is because some of these symbols are now universal. Even finding a toilet now is virtually universal. So why can't we apply this to everything we do, especially in accessibility?

What we need to do is to be understood. And by understood, I don't mean understand the icons and we navigate. It's to actually think about the accessible services we are offering. Do they help people understand the content and the story we are doing and how to navigate their way through it? So all these together are becoming incredibly important when we start to look at a whole new paradigm of storytelling.

Icons and information, I said, it is becoming clear that these are beginning to become ubiquitous, but we need to make sure they are in everything we do and everything we think about. In a minute, I will be passing over to Pilar to start to discuss some of the areas of work that she's been doing and how we can then move this forward.

So you can see here some general ideas. We have responsive design, adapted to VR environments, voice activation, simple things like navigation, looking up, looking down, consecutive clicks, voice control. These are all things we need to put into not just where we think about Web-based content, but also into content that's delivered by any means.
(Captioned video)

>> ANDY QUESTED: So I am now going to pass over to Pilar, who is going to pick up the rest of the session, and then I will come back to just do the sum-up at the end. So Pilar, over to you.
>> MASAHITO KAWAMORI: You are muted. Go ahead.
>> PILAR ORERO: Thank you. Okay. Yes, basically, I don't know, five years ago, when we were thinking about accessibility, we thought the end user was a passive receiver of the media content, and we had to give access to the passive viewer of media content and give the access to them. And the thing is that the world is moving very, very fast, and the end user is no longer a passive viewer of content or user of content. But now, the person who is now used to just be a user, a consumer, is now become a prosumer. That is even more and more interesting in the new social networking. For example, in TikTok, that they use videos. And it is run 100% by videos produced by consumers, that they have become prosumers. So this is a nice, interesting challenge. How would the prosumer generate accessible content from the very beginning? Because as Andy said, we have to think of accessibility from the very beginning of when we start producing content or systems. Otherwise it's not going to work.
The problem with 360 is that the tools that we have available at the moment are not very user friendly, and they are not accessible at all. So that has prompted us to think of ways, easy ways, easier ways to produce content that is accessible from the start, and it is produced by all people, from people with disabilities, people that speech one language or not, people who -- that are catering for producing content. And 360 content, for example, by students to do learning in 360, which is happening already as we speak, that is what's prompted us to generate some research projects to understand how this should be done.
So if you go to the next slide.
Europe has funded two projects. One is called MediaVerse, and the other one is called Traction. These projects where -- what we want to understand is how is the process of
co-creation -- co-creation means that the person, the user, because not only a consumer, but also a prosumer. So the persons with disabilities in this case is -- generates content in 360. And this content in 360 is accessible from the start and is then distributed, and then it can be -- it can be seen or can be consumed with accessibility in 360. This is very, very complex. It's very complex at many levels.
Andy already mentioned that you need the interaction with

the tools. You need the interaction with the devices that you are using to be consumed. You need the interaction, so the interaction has to also be accessible at many levels. That is challenging, and it takes not only a lot of time and money, but also the group that is developing this has to be multidisciplinary. For example, we are developing accessible media.

If you go to the next slide, Andy.

We have developed, for example, authoring tools, authoring tools that are accessible in themselves. But these specifications on how they have to be accessible need to be standardized. For example, if you go to the next slide. What are the ways, easy ways, for the end user to produce content and to produce, for example, digital 360 immersive digital storytelling with subtitles? We created a team, multidisciplinary team. We have Mar Bres, an expert in subtitling 360, but then we need a psychologist who understands how we see in 360 and how we look for the stimulus, where is the person who is speaking, talking to, and how we find them in 360 because you may be looking in one direction but the people who are speaking is behind you. So then the subtitles will be behinds you. So this orientation is needed as well.

But we also need someone to make the framework for the subtitles to appear, so we have Chris Hughes from a university in the UK. Then we have an expert on eye tracking to understand where do we see when we are doing the experiments, and that's Andy.

We need groups with multidisciplinary people to understand this way of producing content in 360 and understanding where should be the subtitles in 360. How is the audio description, which is a sound, how sound in 360 behaves for audio description. Can the user decide to use audio description from one way or another way, or can different audio objects be merged in the way the person who is the end user decides to choose them, to hear them better, for example?

We have also created a player. So because not only, as Andy said before, not only the user becomes a prosumer, but also needs to be able to activate all the accessibility services when they are in front of content. So you need to activate the languages. You need to activate the service, if it is a subtitle or audio description or sign language. You need to activate, the subtitles need to go at the top or at the bottom, or how would you like them. All these possibilities are there, and they are available, and they were wrenched in the past in a project can you tell Imac.

Next slide.

I think, Andy, you can then go on and tell us about the opportunities.

>> ANDY QUESTED: Yes, thank you for that, Pilar. Yes. Coming on from your last slide, I think we have the opportunity now, how we improve the situation. We've got tools being developed with accessibility at the heart. We have user devices being developed in conjunction with those tools, but also in conjunction with the same people, the same groups who understand the accessible services, requirements, and the needs of the user.

So what we are getting is the idea of Web interface, templates, unity servers, and other common formats we can start with. This is a starting point. Remember, this is not going to say this is how you are going to do it. One thing we are really clear about is a lot of the work that's being done by these standards groups is to throw tools at the industry, and then what's great about the industry and what is great about the commercial side of the industry is that people compete for the best options within those tools. So we get the collaboration between public and private, between industry and need. So that the best services and best tools can be delivered.

So just to sum up -- I am getting towards the end now -- I think we can see these bullet points are sort of very straightforward and almost like why are we saying this? Isn't this obvious? Just don't assume everything is the same as we did with 2D. By 2D, I mean the standard TV or Web interface you have seen. Don't assume it's good enough.

We've got to learn lessons from the gaming industry. I have always been a keen fan of the gaming industry. They are well ahead of some organizations, especially some broadcasters, in making their products accessible and usable by all. They have a very simple mantra, as I have always said, more players equals more money, and they have influenced some of the organizations. They have influenced not just the gaming developers, but also the hardware developers and gaming system developers to produce accessible devices for accessible gaming.

We've got to expand our options. Sight and sound, everybody understands captioning, subtitling, but we have to extend our options into motor function and to understanding, especially for people with learning disability and as you get older, you might not be able to work as fast as you used to be able to do.

Easy-to-understand language tools is a must, a give.. we have to ensure that users can perceive, understand, navigate, interact, and contribute.

And the last line is always universal design and born accessible content is absolutely the key.

I think to finish, I am going to go back to the first video again, but towards the end of that programme, we saw Barbara saying that she wishes the world were designed a bit better. Well, that was Barbara in the past, and in this story, Barbara meets Barbara of now, who has a point of view, so the context, this is about one of the UK's disability acts. Before it came in, and this is after it's been in for some time.

(Captioned video)

So from myself and Pilar, thank you very much for listening to us, and we hope you have some questions later, but I will now hand back to Masahito. Thank you.

>> MASAHITO KAWAMORI: Thank you very much, Andy, Pilar, thank you. Yeah, we will take questions later on as well as we can -- you can ask questions in the Chat box as well as Q&A box.

We'd like to now move on to the next panelist,

Pradipta. -- Pradipta. Can you present your presentation? The floor is yours. Thank you.
     >> PRADIPTA BISWAS: So am I audible?
     >> Yes very much.
     >> PRADIPTA BISWAS: Right. Good morning, good afternoon, and good evening, everyone. So in terms of audio description, I am from India. I wear black specs, and my skin color is different shades of brown based on influence. And I would like to talk about taking forward the idea of personalization and with focus on this AR/VR media.
          Please allow me one second to share my slides.
          Right. I hope my slide is visible to the audience. Is my slide visible?
     >> Yes, it is.
     >> PRADIPTA BISWAS: Thank you. So I am Pradipta Biswas. I am an Associate professor at the Indian Institute of Science and also recently elected Vice-Chair of Study Group 9.
          Earlier in Andy's presentation, you already know continuum of extended reality, which on left-hand side, we have the reality. On the right-hand side, we have the virtual reality. And main difference is virtual reality is fully immersive. We cut out. While in between we have augmented and virtual reality.
          OSO/IEC standard defines augmented reality and mixed reality as augmentation to the physical world. Also, define virtual reality, and I think this is a very interesting time where we can work both on technology development and standardization and make best use of this AR/VR media for people of differing abilities.
          While we concentrate more so far on the AV media, but just to touch upon some work from my own research group that we take it forward towards rehabilitation of people with different range of abilities, in this particular case, people with severe spasticity. And we train them to use a video interface, a type of augmented reality media, to operate a robotic arm. And then we can go beyond from simple video in the office to augmented reality or mixed reality process. In which case, we can involve any RC device. And there are several use cases with that, that we can empower people with different range of abilities to operate physical device, which they so far couldn't do due to their motor impairment. And as well as we can enable kids who cannot play with physical toys, like their other counterparts, with all these AR or VR media, which can, of course, improve their quality of life. And we integrated all these type of AR/VR media with cyber physical systems, starting from fixed-base, aerial, and ground.
          But at the bottom line of all this lies the discussion of personalization because we are talking about people with different range of abilities, and this range starts from people with visual impairment, motion impairment, cognitive impairment, and so on.
          We had a workshop where many of my fellow analysts were also presented. And it was very well represented by industry representatives as well. We started with a presentation by

Microsoft on gaming for blind users using special audio to robotic interface, and of course, Andy and Pilar's fantastic presentations on the subtitle. And we are moving towards publishing a special issue on ACM transactions on accessible computing. In particular all these areas we find diversity. That is not an easy problem. What we are trying to develop over the next few minutes I would like to focus on something, common user profile format, which is presently ongoing work at ITU. And this common user profile, with a we are trying to develop or how we are trying to personalize, we start with the user because the user is the central person. We create this common user profile, or we call it the user create or we get it from the user through some profile creation app. We do not specify how the profile creation app will be implemented. But we assume that it is there, and we will get the user profile from the user. Which can be stored on personal device, considering the security issue. It need not to be shared with anyone. Or if the user really wants, like everyone is using physical or social media, LinkedIn, et cetera, so if anyone wants to post it on a proprietary/third-party cloud service, that can also be there. And this user profile will work as an input to an interpreter mechanism for common user profile. And in our effort, we are trying to specify the details or the semantics of this interpreter, which will take this user profile as input, and the output will be the interface modifications. So what we mean by interface modification. Before going to that, probably the interface modification issue, we will just touch upon the topic of security aspects. In the previous slide I mentioned it need not to be transferred to third parties. It can stay on local device. And also this recommendation doesn't mean to specify any encryption algorithm or any storage device, so that has been left out with the individual devices or individual clouds, where the profile will be stored. But the user profile will be able to add up or personalize user interfaces. It can happen at the application level, say, for example, a particular Android app can subscribe to this user profile service and change its rendering. As you can see in this particular case, our colleagues at Queen Mary College in UK, they have adapted the same Android app with different form size, color conformance. It can happen at browser level, so we have developed a monitoring system where the browser can have particular style sheets based on the user profile. Or it can also happen at the middleware level or operating system level. So around 2010-2013, we worked on a project, user interface, where we worked on middleware which will add third-party applications based on the user profile.

So we are trying to find the semantics of this user profile, which can be understandable or interpretable, a wide variety of AV media, starting from websites and broadcasting programme, ranging to AR/VR media, and people can have more profiles. But the main challenge we are facing so far is, of course, the concern of user privacy and conformance to privacy-related legislations, and we are discussing for long that how far we should include that or how we should and which part we should exclude.

Then the acceptable variable nomenclature that the success of the effort depends on that how many vendors or how many third-party developers conform to it. And in that case, acceptable list of variables, and it will be very important to have a minimum subset of variables, which gives minimal personalization across a wide variety of media. And also looking at the diverse range of AV media, as you already looked at from Pilar and Andy's presentation, that simple adaptation of subtitle or screen icon is not good enough when you are looking at 3D media because it comes with a lot more different options and challenges.

And finally, defining minimal set of variables covering different areas, so we are fortunate that we are working in parallel with the Study Group 16 and Study Group 6, and we are getting expertise, who are actually implementing every media, and who have expertise on making it accessible.

These are the challenges we are facing presently on making this common personalization format, and I think with that, I will end my presentation. And if anyone has any questions, I will be happy to answer. Thank you.

>> MASAHITO KAWAMORI: Thank you. Okay. Thank you very much for your presentations, panelists. I'd like to invite all the panelists to show your faces. And let's start our panel session. We have one question, and I have some questions also.

So the first question we have is how do we ensure these principles of inclusion be integrated in policy-making and policies? I think this is a very good question, but also it's a very hard question. So I'd like to postpone the answer to this question to the end of the discussion because we have some technical more elementary, basic questions to ask to clarify the content of the presentations.

And the first question I'd like to ask Andy especially is that in your presentation, you talked about the importance of design, it being the most important issue. Where do you think should this effort or resources be targeted for the maximum impact that you'd like to have?

>> ANDY QUESTED: Yeah, I thought you might ask me this question, Masahito. If I knew that answer perfectly, then again, it's one of those things, we wouldn't need to do some of these sessions because we'd have a better designed world.

But I think what we are going to realize is now that some of the concepts and ideas we had from traditional television just aren't good enough to take forward. We are not there on traditional television, to be absolutely clear, but we are at least getting there.

I think the key thing is, is almost not to be too prescriptive. Because I think when you are too prescriptive, you get what you are given. If it's not right, it's difficult to change. I think we need to have a lot more dialogue. Things like the common user profile that Pradipta presented within the IRG-AVA that we have been talking about is a good, classic example of where things are improving through discussion. The whole idea how, as each meeting

we go through, it's taking time, but each meeting we go through, that concept is improving, and we are seeing some of the issues that, as Pradipta showed in his last couple of slides, that are more important than the ones we thought they were when we started.

So I think the key thing is discussion, and then when we are really sure of what we are up to is to take it to the industry at large. That's where the ITU is really good, especially the T sector, where we have a lot of people from industry involved in these areas, and in the R sector, where we have a lot of people from administrations involved, we can start to get the importance of it.

I know Andrea is on the session, and she pointed something out coming to design. When I was reading, I couldn't -- number one, I couldn't see the Chat when I was sharing my screen. Design issue. I couldn't -- the presenters don't have their names supered in the presenter mode. Therefore, when I look down to read, my lips were lost. And then when I look at the -- my laptop sitting next to me, which I am logged in as a normal discipline, I can immediately see that was happening. Thank you, Andrea, for pointing that out. Again, that's design. That's something we must think about, that's designing our presentation to take account of how people will see it and understand it.

It's a long, involved answer to that, but I think talking, discussing, and making sure the right people are involved is the only way we can do it.

>> MASAHITO KAWAMORI: Okay. Thank you.

And during -- Andy and Pilar, especially Pilar, during your presentation, you talked about XR, AR, MR, VR, XR, you know, all those Rs. And what do you think, especially in terms of accessibility, what will be very different from conventional accessibility compared to XR and how they impact the accessibility? How do they improve accessibility? Pilar?

>> PILAR ORERO: Yeah, to me, the very interesting thing is going to be the object. Media is going to be object based. So for example, the sound, how the sound behaves in 360 and how the end user can choose the sound and how the sound objects it gets, it's going to be completely different from 2D. So that's going to be one.

The other one that is very different as well is for people, for deaf or people with hearing impairment is to locate where is the sound coming from in 360, for example, in VR or XR? So you need to locate where is the sound coming from, and then there you have to then look at that place, and then the subtitles or the sign language speaker would come from there. How do we manage to do that? And how we show that, that we don't have a split field of vision at the same time is going to be very, very challenging.

360 or immersive environment is going to be a wonderful opportunity for people with disabilities, but -- and thanks to what Pradipta, the common user profile, is defining -- and that has been taken by ITU, and I think it's very, very important. I think that is going to be a great resource and a great tool for the future. It's not going to be tomorrow, but we are on the way there. And industry

is also very interested as well. So yeah, I think we've got fantastic future ahead of XR and in general and 360 as well. Yeah.

>> MASAHITO KAWAMORI: Yeah. Okay. Thank you.

And Pradipta, you talked about, just Pilar mentioned about the common user profile, and your presentation presented some -- gave some examples of use cases, and I believe that would be very beneficial to accessibility. How do you think that would enhance even further what we see on displays, in small screens, and things like that with your common user profile? More in layman's terms?

>> PRADIPTA BISWAS: Thank you. So I believe it will open up something like a Pandora's box for people with different range of abilities. And my personal focus will be on the young adults, and maybe on the information and education sector. So during this COVID pandemic, also we noted that the wealth of information and still now this debate is going on about the quality of information, number of actual people died, and the national and international policies governed by this information. But I feel that with the present state of technology, that many times this information is not appropriately disseminated to people with different range of abilities. And in addition, the educational sector that these people with different range of abilities for long time, they are missing the advantage of education, and it's just because that resources are not designed for them. And now the rest of the world also felt their agony when we are facing these lockdown situations and these university facilities are cut out from the general audience, and there is a sudden rush towards the metaverse and AR/VR-based education technology development. I think it was like the unsong song for these people with different range of abilities who will also immensely benefit from that. And I think this education and information, those are the main topics or main area where this AR/VR technology can make a dramatic change. And as like many other previous instances, making them accessibility will also be very much useful for their so-called able-bodied counterparts.

>> MASAHITO KAWAMORI: Okay. Thank you. Yeah, education is a very good idea. I agree.

Yeah, so we have, like, VR, XR, MR, and also personalization and common user profile. That's all good, and also designing, and especially for content creators. But at the same time, that all comes down to cost, you know, that will all require some additional cost. So all of you, how do we keep getting the message across to content makers, distributors, broadcasters that accessible media is not a burden in cost, but it's good, something good for them as well? You know, for everyone.

>> ANDY QUESTED: Could I jump in on that first one?

>> MASAHITO KAWAMORI: Andy, go ahead.

>> ANDY QUESTED: It comes back to the gaming industry. The group that I have followed for a long time is the Can I Play That group, CIPT, and I said before they see accessible gaming as a way of a company to distribute those games are making money. The more players, the more money. I think we are seeing, especially with the

move away from traditional broadcasting to subscriptions and other areas, you can see the same content sometimes going out on different platforms with a far different range of accessible services being available. And that will start to see the people who don't get that content from platform A moving to platform B and, therefore, platform A losing subscribers. So there's a financial incentive to make your content available to as many people as possible.

     Some of our costing models are still very old and very traditional. If you take a classic broadcasting model, your commission to do it, the broadcaster deals with the accessibility, and therefore, it's just down to an extra cost. The programme maker has no say. Make it the programme maker's responsibility, and they want that programme to last as long as possible. They see the bottom line as being their next commission, their money for their next project. So to some extent, you can reverse the argument. It's, you know, would you stop doing the sound because it was expensive on a TV programme, or would you do it in a very small image in the middle of the screen because it was cheaper than doing a large image? Obviously not. So the same, I think, applies to the accessible sections. They are built into the content.

     The other one is, of course, if you start by adding accessibility to the end of the process, it, of course, will cost more. If you make your script accessible, you don't have to add accessibility to it. It's there already. You shoot it to be accessible.

     So I'll stop now.

   >> MASAHITO KAWAMORI: Okay. Thank you.

     Pilar, do you have any idea or opinion about cost?

   >> PILAR ORERO: Well, first of all, I think we are thinking on a very old-fashioned content producing way. We are thinking about broadcasters or media, large media companies. When, in fact, most of the media content consumed today is produced by prosumers, by people. And if we could teach people how to make and if we could give people that are producing content how to make this content accessible themselves, and if we teach them, then it would cost nothing. Because it is, to me, a question of education, at the end of the day. They have to be educated that -- to understand that whatever they are doing, it is useful, and it is good for everyone, regardless of the language, regardless of the disability, regardless of where they are.

     So if you want to reach everyone, then this content has to be accessible. And if you do -- when you are producing something, if you make the subtitles or the subtitles are made automatically -- and they can be made automatically. In YouTube, we see that. As you are producing content. Then you are there.

     So to me, education is the way to go about it. I agree with what Andy said about going from the design from the beginning. If you put accessibility right at the beginning, then it is much easier to go about it.

     And why should they care about making things accessible?

Let's think about politics. If you want everyone to vote for you,
perhaps you have to, whatever you are doing, whatever you are saying
has to be accessible. Otherwise you would lose that vote. So you
would lose that customer. You would lose that. So I think
everything should be accessible, and if you want everyone to buy,
to listen, to vote. Yeah, that's my message.

    >> MASAHITO KAWAMORI: Thank you. Pradipta, you have some ideas
about cost issues related to accessibility? Go ahead.

    >> PRADIPTA BISWAS: Yeah. Thank you.

    So I think the traditional argument against cost and
accessibility, I believe, unfortunately myself, also from a senior
colleague, that why should we take care of 2% of the market? But
the reverse logic will be that probably there needs to be more studies
on the user experience. And I believe there can be, if it doesn't
already exist, but it can easily be proven that better users
experience is always highly positively correlated with highly
accessible content. So the point here is that if the content is
accessible, it's not meant for a specific group of users, but in
general, it's a better user experience. I think there are many such
examples, like the BBC Olympic coverage website, and many others,
the organizations were offering accessibility. And if it is -- the
cost question should be shown to user as more not making it
accessible, but making it inclusive or personalized. I think many
times a common connotation with accessibility comes that we are
making it for a particular user or category, particular group of
individuals or an individual. On the other end, if we look at the
same question from the point of view of inclusivity, which includes
people with different language speakers and people in situational
interment, someone is driving, maybe in a semiautonomous vehicle,
those are the use cases which are beyond the traditional assistive
technology use case should be put forward to the industry, and I think
that will incentivize them to make content not only accessible, but
it is also generating a better user experience for everyone, making
it inclusive. Thank you.

    >> MASAHITO KAWAMORI: Okay. Great. Yeah. So accessibility
means universal design for everyone. Yeah, that would be the
incentive. That's better than cost.

    Okay. Thank you. And last question, and actually, the
first question: How do we ensure these principles and technologies
of inclusion to be integrated into policy-making and policies? And
especially, as we are concerned, in ITU, with especially
IRG-AVA, what do we need to focus in order to do this, in order to
make it part of policies over the next 12 months or near future? Any
answer or any ideas? Go ahead.

    >> PILAR ORERO: The one that has to be done is by legislation.

    >> MASAHITO KAWAMORI: Okay.

    >> PILAR ORERO: And of course, that's got to do with most
countries in the world have signed the CRPD, so they are obliged to
do it. So that's one. That's the nasty one.

    The good one would be that we all are educated to understand

that everybody should be -- should have access, and then anything we produce should be accessible by default. That would be the nice side for me. So education, of course.

>> MASAHITO KAWAMORI: Okay. Education. Thank you. Good. Andy, do you have any comments?

>> ANDY QUESTED: Yeah, I will absolutely reflect that. Education is probably the second thing after design. So design, education, understanding are all the key things.

And I also think we should realize that, you know, accessibility is not just about sound and pictures, sight and sound. There's a lot more to accessibility than what we think as traditional thinking. And some of the work that Pradipta is doing is not just about sight and sound; it's about the whole experience.

I always say if you think about immersive content, it's an interaction, and if your motor functions are impaired, you are not going to get the same experience as someone with very good, very fast motor function. It comes back to gaming. You know, some gamers are now quite old, and they want to compete with the 17-year-olds. Therefore, they need better devices to do that. Unfortunately, that means the 17-year-olds can go even faster. But it is about, as Pilar said, it's about education and about understanding. Thanks.

>> MASAHITO KAWAMORI: Thank you. Understanding, yes. Good. And Pradipta, you have any comments? About this?

>> PRADIPTA BISWAS: I think I must agree with Pilar and Andy. I think education, and it's not only for the K-12 or the STEAM education, but it's going beyond even for the managers or the policymakers who are taking the actions or making policy. So the education should reach out to them also, either in the form of use cases or in the forms of statistics, whatever can convince them to allocate resources for making things accessible.

>> MASAHITO KAWAMORI: Okay. Great. Thanks.

Yeah, so I think we have some focuses to concentrate on for the next 12 weeks -- I mean 12 months. But anyway, thank you, Andy. Thank you, Pilar. Thank you, Pradipta, for your great presentations, as well as the lively discussion on the panel, and also the audience for your kind support, as well as your questions. And thank you very much again for joining us today for this webinar.

Before we officially close this webinar session, we'd like to invite the WSIS team to play the WSIS Forum 2022 Partners Video. And thank you again. Please enjoy the video. And thank you. Thank you, everyone.

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