ROUGHLY EDITED COPY

ITU 2008 CONFERENCE
GENEVA, SWITZERLAND
APRIL 21, 2008

Captioning provided By:
Caption First, Inc.
P.O. Box 1924
Lombard, IL 60148

****

This text is being provided in a rough draft format. Communication Access Realtime Translation (CART) is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings.

****

(Music)

>> PIERRE-ANDRE PROBST: Good morning, ladies and gentlemen.

I have the honor and the great pleasure to open this forum. We are from the organization and committee and are pleased to see so many of you here. And I'd like to express my warm welcome to all of you.

This forum is dealing with accessibility, the rules to generate that. I think it's a very important aspect of our organization. This area is very important and I think it's another area and I see a lot of people involved in the development of standards. And I think it's essential to build up a partnership between these players. And we hope very much from the organization committee that this even will contribute to build up this partnership and to build up the development for standards for accessibility.

After this introduction, I would like to give the floor to the director. It's a pleasure to have him here for his welcome address. Please, you have the floor.

>> MALCOLM JOHNSON: Thank you very much and good morning everybody. It's a great pleasure to welcome you to ITU for this event today. The UN convention on the rights of persons with disabilities was one of the fastest treaties ever adopted. And accessibility of disabled people is one of ITU's main objectives. In acknowledgement of this, we have convened this

workshop, together with G3ict, to examine how best to take into account the needs of people with disabilities and the standards for ICTs.

This important constituency of people represents 10 percent of the global population. And to emphasize our commitment, we are seeing this year's world telecommunication and information society day is connecting persons with disabilities.

These are ICT opportunities for all.

The purpose of this initiative is to help raise the awareness of the possibilities that ICTs will bring to our societies and our economies. On the 17th of May, ITU's secretary general will award three champions of accessibility. And I won't give the names just now, you have to wait another month for that!

I believe that standards have an enormously important role to play in making ICTs accessible, and I believe that ITU can lead the way in terms of international standards to achieve this goal. Indeed, this was the first international standards body to address the issues back in 1991. In 1994, the international text telephone standard recommendation was termed the A team. It was a major landmark, tying together text telephone protocols differently. Previously there were incompatible text phones in different countries unable to communicate together. Since then the experts helped to incorporate accessibility needs into standards for multimedia, interoperability, multimedia service descriptions and multimedia conferences, and most importantly, created the concept of total conversation with realtime text.

An example of recent work focuses on taking accessibility needs into account in the development of all our standards, from the very beginning. A Recently published accessibility checklist, which will be presented to you in detail in session 2, gives guidance to the makers on standards on how to incorporate the needs of people with restricted access to ICTs. The accessibility checklist is an excellent tool, helping to ensure that the accessibility needs are included in the early stage in the development of a standard, rather than industry having to retrofit products and services at a later date. Retrofitting costs can be costly for industry and it makes sense to design for it from the beginning. And in this way we end up with better products and services.

Building on this concept is the development of an extension to the ISO 9000 family that will be applicable for building accessibility products.

This year, we have established a new group to coordinate standardization activities on accessibility and human factors. The joint coordination activity on accessibility and human factors, acronym JCAAHF, is open to experts working in the field to improve access to the information society by people with the

capability of handling information and the controls for its presentation.

I would encourage you to take part in the JCA. The first initiative of the group is in fact the organization of a tutorial on accessibility that will be held tomorrow morning in this same room. It's designed to train ITU staff on how to improve accessibility of ITU facilities, such as web sites and conferences. But you are all welcome to attend this tutorial tomorrow.

In addition, ITU initiated recently the dynamic coalition on accessibility and disabilities in the Internet governance forum, the IGF. We are proud to have G3ict as a founding partner for this initiative.

Further, the development sector of the ITU will be signing today, just before lunch, the corporation agreement with the G3ict for the development of an accessibility toolkit that will be a valuable tool for training ICTs in several regions. We will hear more about this excellent initiative from my colleague, Mr. Grin.

One of our current and most important intensive summarization activities is of course on next generation, NGN. Accessibility issues were included at the first stage of the development of the standards when we defined the requirements for NGN. However, it's important that these features are implemented into the technical aspects of NGN. So as the standardization work progresses, ITU is working to ensure that this does happen. And the next step of course will be for industry to use and implement these standards so that everybody benefits.

All ITU-T technical standards, by the way, are now available for downloading free of charge from the ITU Web site.

So, ladies and gentlemen, I would like to thank all the champions that are active in accessibility work in ITU, and especially ITU-T, as well as of course G3ict.

It's important work and there are few experts in the field, but fortunately they are very committed people. There has been a great deal of effort put into preparing for this workshop, and I'd like to thank the steering committee for that, which we are all very grateful.

So you have some excellent speakers. I believe all the key people in this field are here with us, a very interesting program, and I wish you an enjoyable and informative workshop. Thank you for your attention.

(Applause)

>> PIERRE-ANDRE PROBST: Thank you very much, Malcolm, for your kind words and your work in this field.

I have the pleasure to introduce Mr. Grin, who will speak on behalf of the development sector. Mr. Grin, please.

>> YURY GRIN: Thank you very much, Mr. Chairman. Dear Mr. Chairman, dear colleagues, ladies and gentlemen. It's a great pleasure for me to bring greetings. The time of the forum couldn't have come at a better time as the world is now preparing to celebrate this year's world telecommunication and information society day. This is connecting persons with disabilities. It is an ICT opportunity.

Our prime objective is to use this day to raise awareness on the need for all stakeholders to put together their action to address the needs for people with disabilities in order to make it possible for them to participate in social and community activities, as the rest of the world community.

Ladies and gentlemen, these are positive developments both for the countries and ICT industry. It's also a big challenge for the respective countries, who have to come up with relevant strategies which address accessibility issues in order to meet the needs of People with Disabilities, given the numbers and user resources at their disposal.

I will not give you figures regarding financial developments in the world, which of course is much worse for People with Disabilities, you are well aware.

So we believe that there are three fundamental issues on which we have to consider. And the first one is raising awareness on the issue of accessible ICTs, a subject which at a global level has led to the world telecommunication conference and the UN. The crucial part is the implementation of these resolutions and the transposition of identified best practices from around the world to countries which will ensure availability of accessible ICT in developing countries.

This is where the work of the partners will focus in the next few years to ensure that the critical number, local stakeholders, will have tools to develop and implement a lot of relevant policies to promote accessible ICTs in their countries.

In an effort to meet these challenges this afternoon, or just before lunch, we will sign a cooperation agreement between G3ict and ability, which will lead to the development of a toolkit for policymakers and other stakeholders, mostly in developing countries.

Secondly, most people in developing countries live in rural areas, using many different languages even in the same country. In order to provide accessibility for these communities, it will be necessary to use access technologies and software in languages which such communities can understand. This should be the ultimate goal, but for now we could start with a few major languages and use the experience to reach more people.

This leads me to the third issue which of course is these technologies, and including the assistive devices. The

importance of this cannot be over emphasized. However today the main outreach for many will be users in developing countries. As part of the outreach for awareness, stakeholders can use this as a part of collective accessibility and normal opportunities. This is good not only for the industry but for the governments and for society as well. Such consideration would make devices for People with Disabilities more affordable. Community-based ICT centers could provide such facilities, so that all members in the community can make use of that accessible ICT at the centers.

Developments would then be able to increase employment of People with Disabilities, leading to better economic social and political benefits. It's important for a few countries to pilot this possibility.

Mr. Chairman, before concluding, allow me to say that despite this challenge, they also have a good opportunity to develop accessible ICTs, due to the fact that the infrastructure is not yet fully formed. By taking the steps now to develop policy, such as universal design principles, and relevant international standards, with proven track records for accessibility, they could even move ahead of some developed countries, which may need to retrofit their infrastructure in order to meet accessibility standards.

As noted earlier, the challenges are to get the message to policymakers in developing countries on what advantages accessible ICTs have to offer to solve their day-to-day problems. What, when and how to do it. Adopting accessible standards is certainly an important element in this, and your contributions in this area will go a long way in ensuring the people in developing countries will have accessible ICT as it appears in the rest of the world. In conclusion I'd like to tell you that the head of the unit of ability will stay in this room during the whole meeting and will be here to discuss this interview and will be available for further cooperation and can provide you more information about ability activities in this field. Thank you very much for your attention. Thank you, Mr. Chairman.

(Applause)

>> PIERRE-ANDRE PROBST: Thank you very much, Mr. Grin. I think it was very important to have your perspective, and I hope your message has been understood, the last one. Thank you, now we will move to the next presentation, we will describe the convention on the right of persons with disabilities, and the need for standards. Axle is president and cofounder of the wireless Internet Institute. Over the past five years, W2.I has been doing programs with the ICT task force and the World Bank,

so please join me to welcome Axel Leblois.
(Applause)

>> AXEL LEBLOIS: Thank you very much, Mr. Chairman and ladies and gentlemen, good morning. We are very, very pleased to see so many of you today in this room for this very important meeting. First I would like to share with you that we are extremely grateful to the ITU for hosting this event. It has been over the past few months a wonderful experience to prepare this workshop. And the organization was perfect and wonderful. Thank you so much for your help in organizing this event.

Just as a first introduction, I would like to tell you that as an initiative of the global alliance for ICT development, this ICT acted as a catalyst and organizing group to promote accessible ICTs. And so there are many people involved. Many of them in this room today.

I would like to also thank them for their participation. Certainly first and foremost the steering committee of the global alliance, which is chaired by Ted, and others who cannot be here today because there is another program going on tomorrow, so that explains the difficult timing for everyone. But also we have a lot of participants in this room, Michael from research, from industry, who has been very instrumental in making us, from the start, we would like to in particular give our appreciation to the organization for the blind, the IBM corporation, and the media foundation, Samsung, and others, and all of those institutions have this past year hosted meetings or helped us in-kind financially to get going. So I would like to mention in passing.

This is a very collective initiative. It's not just one person or one company involved in that process.

First of all, in terms of our mission, what we tried to do is first and foremost to look at the convention and see how to best implement the disposition of the convention in matters of ICT accessibility and technologies. As you heard just now, about a year and a half ago when we started G3ict, we had concepts, but within a year 126 countries signed the convention and 20 modified it, making it an enforceable treaty next week.

So this is a very good time to hold this meeting today, because over the next few years a flurry of activity will occur in regulatory and other areas to put the participation of this convention into rules and regulations.

As you look at the convention, there are a number of very important aspects for ICTs. First, in article 9 of the convention, and the preamble and various parts of the convention, it's very clear that ICT accessibility is at par with any other form of access built, to transport, to buildings,

for everything else. So for the first time it's very clear that the obligation to respect accessibility is as important as respecting all accessibility.

Secondly, the fact that ability is defined as the interaction between the barriers that society puts up for people. The ability is defined again as the interaction with an inaccessible process put up by society and excluding participants by lack of attention.

So from an ICT's standpoint, there are two things. Number one, we say it's an obligation to have accessibility. There are a lot of things that we have to do.

In fact, you can look at the convention details, out of 32 articles, 14 actually mention an obligation which have direct implications for ICTs, so that’s over half of the articles that are involved in the convention.

We are honored today to have several members present in this room. The chair of the first committee will be speaking later this afternoon here as chair of this ICT. We see that there are actually very few -- there are many things all defined in terms of a defined outcome. This gives great flexibility for people to do their work and to take the steps that are most appropriate. The convention is completely open in terms of solutions. But it does mandate an outcome for governments to sign the convention.

And another thing I want to mention here is accessibility, accessible communication is very well-defined, in terms of what does that mean for various types of disabilities.

Finally, in article 9, the obligation to maintain and to develop full accessibility for ICTs certainly calls on the public sector, but also states inside the convention, the private sector, have to deal with accessibility. So the private sector has as much obligations as the public sector, as a result of that text.

To make a long story short, I'll share a story that I used in the past, but it's easy to use, because it shows you the main areas of application covered by the convention. You'll see education, Internet, freedom of expression, independent living and culture and leisure are some of the core chapters of the convention. The convention may have several types of different kinds of dispositions. One, accessibility models that say you must, you shall, in that particular area have accessibility, you know, or you may recommend that accessibility be worked on.

But you also have models in the convention to deal with accessible technologies. There is actually in the convention a lot of knowledge to actually intervene. That is for education, for personal ability applications and independent living applications. So following the conventions long-term is

important.

Finally, in two areas, there are specific recommendations of the convention to have those who sign the convention, it's important to emphasize these aspects of the convention. It's very important text. People want to make a situation possible, in terms of regulations and organization for accessibility for ICTs, but in the same token, we are smart enough to put in there a lot of dispositions to have incentives to actually have attention and resources and other technologies.

Now, we have 126, as many as 127, I'm not sure if I have the last rules from the convention, but it's a large number of countries. Many modified it. So what the convention says is that state parties who have signed and modified the convention will have to take appropriate measures and they have to take appropriate measures in the legislation and so on. And to take into account the protection and promotion of the language. It's not just saying that as a government we should pay attention to this. It says you must change your legislation and regulations, in fact, you must change your constitution and compare it to the convention. So it's a firm obligation. There is no mistake about it. In my personal opinion, it's kind of a very interesting first in history. I believe the text of the convention is probably one of the first where NGOs and society have such a huge impact in the editing of the text, because of the commission.

In the text of the convention, we have a chance to monitor the condition of the convention, which will be done between the secretariat and the commission on human rights. So between the knowledge, commitment, and the expectation from all major NGOs around the world who are part of the preparation of the text, you have an ability to make sure this happens. I think it's the first time that you'll see that an international committee was -- treaty was designed in part by NGOs who then will be one of the principal benefactors.

So I think there will be pressure in these countries to make sure these are implemented at least from a regulatory standpoint.

Now, let's come to accessibility standards, since that's the major theme of this meeting.

So what will happen now is that the first thing and things that you wonder about is okay, how do we go from A to B? How do we take the text which defines obligation of outcomes, and make it a tangible set of rules that work in the real world for technology? So people are going to look for standards.

And it's very, very good timing now, because the convention has a disposition that is actually addressing different articles which is the ability for all persons around the world for

accessible technologies. Well, we don't have globalized markets and standardized markets, so that's a bottom step. So the convention implies that you do have an obligation.

Second of all, interoperability for Assistive Technologies becomes a very important goal for a number of ICT applications, and there again standardization can only help very much.

We also believe that corporate -- corporate markets are opened up for the larger industry. So we think that overall, there are opportunities that are very, very significant. Last, in article 92a, there is a disposition of the convention that says that the parties to the convention should specify that there will be appropriate measures for the development of human standards and guidelines for services that are provided to the public. I think it occurs in many parts of the convention, ICTs are defined as an integral part of the services. But that article includes transportation and buildings.

What are we trying to achieve here? We are trying to push in our little way to be at the right place at the right time. So one way to look at the situation, secondly we will be dealing with the regulatory standards, we have to look at the ICTs in the world today. We will talk about it several times today, but one point is on telephone land lines, on TV sets, 2.4 billion radios, and others, and as of today I think it will be close to 3 billion cell phones, one out of two persons on the planet. So that gives you a sense of the scope of what is at stake here, because there is a difference, technologies have different standards, different organization, different challenges, and certainly as you look at the different application areas, they will have to do with these areas of technology, because abilities to work and be educated are affected.

So we will love to find a way to actually develop good practices around those different technologies. And part of the goal is going to dig into some of those areas and provide practical guidance as to what has been working, what is working well today in different countries. I'll give you one example.

126 countries signed the convention. My understanding today is that 41 countries have closed captioned television. But 85 countries who signed the convention have zero captioning of television. And yet there are 1.5 billion television sets out there. So a very simple measure in that thinking is okay, how has it worked best and where and how? What needs to happen to make it work? So those kind of practical questions are what I called learning things, which can help a bit.

And then of course, the product categories should be available for application areas, which are defined in the convention.

So in summary, the opportunity for the standards and the

industry is the following. It's so much better to be a party to and anticipate the issues from the start. By anticipating, I think you can actually achieve a lot of incredible results. Number one: to improve the lives of 650 million persons who live with disabilities, and that's without counting everyone. To increase the amount of information. It has a significant application for societies and economies. The fact that technology today can allow many more people to work and participate in life.

Third, when you look at the demographics of the market, and I know that certainly companies like IBM and Microsoft and Intel are looking at the size of the markets worldwide and the opportunity to actually make ICT accessible is actually a market opportunity. The industry is a bit worried about accessibility. And we will hear about it today.

A lot of other companies say hey, this is an opportunity for us, too. A lot of people using more technology means more markets and better applications and better usage. So it's a win/win if it's done properly.

So today we will have five sessions as you see in your programs. Three of them deal with more general issues that go across product line. Interface, content and services, and then as we heard this morning, one of the articles of the convention states that accessibility must be taken into account in the development of products, and therefore there is an opportunity just right there to actually make progress in areas just by standardizing processes.

And then the fifth and last workshop session will be on development of accessibility standards. This afternoon we will have a lot of qualified speakers discussing procurement.

So this first day in this session I think will have rich contents. I saw many of the presentations earlier on the program committee. They are all very, very high quality. Some very unique experiences will be shared and I really thank you very much for all coming here today to participate in this very, very important process. Thank you so much.

(Applause)

>> PIERRE-ANDRE PROBST: Thank you Axel. It was interesting to remind us of the content of the convention and the impact. And with your permission I'd like to go with the next presentation. We had first an introduction from Mr. Johnson and Mr. Grin. Now we will have a presentation on activity in the JCT 1 and the special work group working with accessibility. I have the pleasure to introduce two speakers.

Josee Auber is with one of the world companies developing product, services and information accessible to everyone. Josee Auber represents HP ITT, international. A long time part of JCT

1, she has been doing this since 1991. In her duties she -- prior to doing this, she had various development functions in software and telecommunication. And the second speaker, Mr. Alex Li is manager for accessibility policies and standards at SAP, a software company. His primary issue is addressing global accessibility policies and technical standards development. He has the position of JCT 1 special task group 2 chairman. He is a member of the W3C accessibility and Web content accessibility guidelines working group. He has been with SAP for many years. Please welcome Josee Auber and Alex Li.

>> JOSEE AUBER: Thank you. My goal this morning is to present the work of the ISO IEC special working group on accessibility. So this group is responsible for the standardization of technology.

I'll be brief. I've been in that special working group. I led a group which developed concepts which led to the development of the special working group. These are standard developed by the special working group.

So how does this special working group on accessibility work? The major objective of this group was to draw on all possible sources in the field of accessibility. So improving this was key.

And beyond the normal participation in a special working group, this is the national standards organizations, and the subcommittees of the GC 1, we invited a wide set of participation. The ITT study groups and others were invited. In addition to that, we really wanted to draw on the resources of all original and national standard organizations with accessibility concerns. We enjoyed participation of several associations, in the area of communication, we wanted participation and we had many participants, and many other associations came in to this.

Last but not least, we invited and enjoyed participation from several organizations and user representatives. We had national organizations such as the NRIB and the Australia user group, and several others, associations from Europe were invited and participated. That's the way we decided to work together, drawing on our own resources.

The objectives were to cover the users' needs from all of these organizations that participated in the work. We also wanted to draw on all nonstandards and accessibility efforts.

Then we wanted to identify where standards were not addressed. We also wanted to track existing rules, policies, or guidelines. And we learned that our ultimate goal was to anchor the use of globally relevant and voluntary standards.

And why did we want to work on technical standards? What I'm

going to say may be of use to you as a technical part of this. Maybe you're more used to policies. Our thought was that the technical standards are bringing the tools, the companies, the technology products and services that are used when they design and manufacture these products and services. The standards are there to make sure that the products and services work when put together. And it's also the belief that when accessibility is built into the standards from the beginning, it's more likely to be built into the products and more likely to be developed to the users.

So what has the special work group on accessibility produced so far? The goal is to publish a technical report which will have three parts. One on the user needs summary. A second part on the standards inventory. And the third part will be the guidance on the user needs mapping.

Many aspects have been approved already. It's looking for editing and publication which should happen in the next coming months.

>> ALEX LI: Thank you Mr. Chairman. I look at the time, I've got minus five minutes. I'll go into the deliverables that we have. Just a second.

Yes, the first of the three main deliverables that we have are the SWG-A is the user needs summary. And the premise is a list of user needs that People with Disabilities may need from a product or services. And what we have is we built on a number of known sources of such information. The purpose of the list is to provide a general understanding of the user needs for standard organizations and standard developers and technology companies and so on and so forth. It's not the design specs. So I'll give you an example of what is listed on the user needs summary. For example, it's to provide contrast between foreground and background. Well that in itself is not enough to create standards completely. Because at what degree of contrast is sufficient?

It's not specified. So what we need to do is have more work from standard organizations to look at the user needs. What we have done is developed a list of very comprehensive and we think it's a good list to look at it and to make sure that nothing is missed when developing the standards. Now, when we go into the deliverables, which are the mapping guide, there may be gaps that make sense and some gaps may not make sense in how your standards meet the user needs.

A second deliverable is an inventory list of standards. We have approximately 250 plus standards listed in our inventory. So how does that help you? Well, first, it helps you not to reinvent the wheel. If you are developing a standard or thinking about developing a standard, that might be something

already done and already established out there, and maybe what we can do is contribute to it and try our best to harmonize with the existing standards, instead of creating new ones from scratch. And even standards that are not exactly following each other can sometimes take advantage of the work that has been done in other areas.

We have listed a number of categories of standards, to organize, but for stand -- standardizations, we encourage you to go through the list and see what has been done, and benchmark.

The last deliverable is the guidance to the user needs mapping. And as you may recall from her talk is that one thing we want to do is to do a gap analysis to determine if there are user needs that are not fulfilled by the standards. And this is the tool to help you to do that. Also, on one hand, if you look at the table, on one side of the axis is -- are the comprehensive list of user needs. On the other hand, the guidance is to list all the provisions and try to check off if what the standards specified will help meet the needs. As you go through the process, you might find some holes in that they don't fulfill particular needs and that's feasible. Because if it's audio specific standards, needs related to dexterity of the hands may not be relevant. So that's entirely possible that you might have a lot of nonapplicable user needs in your standards.

But we encourage you to look at it, make sure you don't make a miss. And also, based on our experience, a number of the standards have gone through the exercise found that they cannot specify a particular standard -- they cannot specify particular standards, because there is not enough basic research done on that. So it's really a two-way street. On one hand the standards need to get better to address the needs. On the other hand, also, we are saying that there is some basic research that needs to be done to better understanding the People with Disabilities, understand their needs, so that standard developers can actually create a better solution and how developers can create better solutions to meet those needs. So maybe we can fast forward into that.

The next one. Yes. So, it actually goes back to harmonization. What we really want to do here is to encourage and improve harmonizations by having a common set of user needs that are available to standard development, have a set of standards listed out there, so if you do standard development you don't have to reinreinvent the wheel and if you create something, less us know and let everybody know as a result.

Lastly, have a mapping mechanism so that you can actually compare your standards against this list and possibly other standards. As a result, you can come up with a set of standards that is better fulfilling to the People with Disabilities and be

more usable.

This is very important from the SWG-A perspective, because after all People with Disabilities depend on ICT to empower themselves to be able to communicate, to interact with the rest of the world. When we have standards and when there are multiple standards and they might conflict with each other, it makes it very, very difficult for these people to work with colleagues and friends and family around the world. And elsewhere using different technologies. So as much as we can, we do have moral obligations as standard developers to come up with solutions and as regulators to Harmonize our standards as much as we can to help People with Disabilities.

And with that, I would like to tell you some resources that we have available.

The Web site is simple, JTC 1 access.org. All documents are available, including the three main deliverables, which are available to anybody and we would discuss that and try to finalize it in the upcoming meeting -- in the upcoming meeting in Tokyo in June. So I highly encourage everybody who has the opportunity to go there and give us the feedback so that we can make a better harmonized solution out there for everybody, for all the standard development organizations. So with that, I will defer it to the chairman.

(Applause)

>> PIERRE-ANDRE PROBST: Thank you very much for the overview of what has been done and how we are planning the special working groups.

We are now at the end of the opening session. Before closing, I would like to ask you to thank the speakers.

(Applause)

So thank you very much. Before we close now, I would like to ask Stefano, if you are not familiar with the facilities here, he has some information. We will find out the cafeteria, and so on.

>> Thank you Mr. Chairman. I would like to give you some information. The working hours of the workshop are in the morning, 9 to 12:30. And in the afternoon, 2 to 6. Two coffee breaks sponsored by G3ict will be served outside of this room. One at 11 and at 16:00 in the afternoon. There is not a prearrangement for lunch. You can use one of our two cafeterias. The closest one is in the top floor, the 15th floor of the tower building. The other is under the Midway between the registration desk. A reminder, just before the lunch break there will be the signature of the agreement. So it will be at 12:30.

I would like to ask the speakers to come on the podium at the beginning of their session, and please before starting to speak,

ensure that the sign language interpreters are ready.

We have wireless Internet access. Please refer to the instructions that are at the entrance door, just stuck on the door.

And I'm available for support should you need me. I'm here in the corner. So you see where I am. And I wish you a successful event. Thanks.

>> PIERRE-ANDRE PROBST: Okay. Thank you very much. So with that, that concludes the opening session and we ask the speakers and the session chairman to go on with session one on the human interface. We will need a few minutes to clear the podium. Thank you very much.

(Applause)

>> WHITNEY QUESENBERY: Good morning. So I think we will push ahead to try to get back on time.

I would like to welcome everyone to session 1.

>> Could we have your attention, please, ladies and gentlemen. We would like to start.

>> WHITNEY QUESENBERY: Could we have your attention, please?

>> Could we have your attention, please? Ladies and gentlemen, please take your seats. We would like to start the session.

>> Please take your seats, ladies and gentlemen. We would like to start the session. We are short on time now.

>> WHITNEY QUESENBERY: Good morning and welcome to session 1. We're going to be speaking about human interfaces and design for accessible ICT. As you know, the preamble points out that disability results in interaction with environmental barriers, and that includes ICT. As Alex Li said earlier, ICT is going to be a force -- is going to force participation for People with Disabilities. And sometimes it seems that we repeat the cycle creating and overcoming barriers with each new technology. And I suggest that one of our goals should be to break that cycle.

The human interface, the design of ICT is part of the human environment. It's one of the places where accessibility intersects with my field, usability and user experience and user-centered design. Typically in the usability field we thought about designing for many or most of the people who use a product. This is not enough. We have to think about a broader range of users. It's not enough to assume that People with Disabilities will adapt products. We need to think about designing for universal use, as we understand abilities on a continuum, and that any individual may occupy different places on that continuum at different times and as their environment changes.

For example, a person with a disability may be a power user. Someone who is uncomfortable with technology or in an

uncomfortable environment may be faced with barriers and may stumble through this.

One of the things that -- barriers to access is a critical step, but it doesn't guarantee that that ICT will be usable by People with Disabilities or any people at all. And by usable, I use the full definition of usability from ISO 9241. In some standards, it's a fancy word for "can be used by." The lengthy definition is that, in brief, is that people who use the product have to be able to use it. We have seen situations in which systems are accessible. Sometimes it takes 45 minutes to complete a test that should be 5 minutes. That is only marginally accessible. So it takes access plus usability to give us true usable accessibility.

As one of the later speakers says, Clive Miller, usability is not something to smear on the surface like peanut butter. It must be designed in from the beginning.

The speakers will look at four different efforts to remove barriers, including products and standards to guide the design of those products, looking at ways that organizations can incorporate universal design to integrate accessibility services and technologies into mainstreamed solutions. The work of the ISO is to bring together ergonomics and usable accessibility into one family of standards.

We will look at factors to create standards to accommodate the needs of the disabled and the growing number of older people, and products to make AT more available to repurpose mainstreamed technologies.

The first speaker is Bill Curtis-Davidson, from the IBM Worldwide Human Ability and Accessibility Center. He is responsible for integrating IBM accessibility services and technologies into the mainstreamed solutions.

He is an expert in the US Section 508 standards with over ten years of experience helping clients develop innovative solutions to apply with applicable ICT standards. He is involved in providing ICT accessibility consulting services. One of his areas has been in accessible kiosk solutions. He designs for universal accessibility. And there are studies from the government and private industry to help show how principles address the question of how do organizations adapt to address the growing needs and what organizational elements should be considered to help comply with standards.

Thank you, Bill.

>> BILL CURTIS-DAVIDSON: Greetings. I'm delighted to address this joint forum today to present thoughts and examples on designing for universal accessibility. I'm proud to represent IBM's Human Ability and Accessibility Center, a worldwide unit of IBM research that has two key missions. One,

supporting IBM's own business transformation, so it can leverage the diversity of its people.

And, two, to proactively support the development of open accessibility standards and bringing accessibility innovation into the marketplace.

In my presentation today I will describe how the social model of disability that we already heard discussed today supports an expanded need for accessible ICT. I'll provide some comments on the demographic imperative that illustrates this need more clearly.

I will then talk about principles of the universal design and briefly discuss how they are related to accessibility standards. And, finally, I will present a couple of examples of universal accessibility design, actual case studies that we have been involved with bringing into the market.

Next slide.

So to begin with some context, there has been a paradigm shift as we have already heard today towards the social model for disability that defines disability as a condition that results from the interaction of a person's functional status with that of the physical, cultural and policy environments. This is compared to a medical model where disability is a physical, mental or psychological health condition that limits a person's activities.

Here we see a shift on thinking about disability as something aligned with the overall society, not just the individual. So, for example, individual adaptation versus societal change, individual issues versus overall human rights issues.

Certainly the UN convention covers both models and is framed and influenced by the social model of disability. In the convention, accessibility is seen as a key element in helping create the positive change required in this model.

The next slide.

There is a demographic imperative that is helping drive this paradigm shift. That is, more beneficiaries than only those categorized with a medical disability stand to benefit from ICT. This includes people with physical, mental or psychological impairments, acquired at birth, by accident, via sickness or in war. However, it also includes the aging population, which is increasing in high rates in countries such as Italy, Japan and the US, to name but a few. With age, we can all acquire a medical disability, for example, macular degeneration or other frailty or other limiting conditions that will affect how we interact with ICT and our environment.

In addition, in this multicultural flat world, language learners and technology novices are other populations that experience limitations with accessibility ICTs. Many

populations are becoming well documented and are now included in the standards dialog.

In addition, leading companies like IBM are expanding their accessibility missions to include these populations even in their names, so we can recognize the importance of this demographic shift.

Next slide.

A sampling of statistics helps illustrate the scale of this imperative. In terms of People with Disabilities, we all are probably very familiar that some 10 percent of our current worldwide population is classified as having disabilities. By 2050, this could reach one billion people. And in many geographies or countries such as China and India, the population is very, very large in reference to the already existing large populations in these important developing areas.

The aging population as well is very, very large and substantive when you add it to the disabilities population. In industrialized nations, for example, by 2025, over 20 percent of the population will be over 60 years old. In Australia, the number of people 60 to 64 will double in the next ten years.

In Japan, 26 percent of the population will be over 65 in ten years. And in China, by 2040, 28 percent will be over 60 versus only 11 percent today.

These statistics we feel demonstrate the increased need for accessible ICTs not only to support People with Disabilities, but also for the other populations described.

Next slide, please.

So with such a State of immense need in mind, we can draw from universal design and draw from -- and draw out a relationship to the current standards efforts.

Universal design is a term used to denote the design of products and environments, so they are usable by all people to the greatest extent possible, without the need for adaptation or specialized design. It offers some overarching principles that we feel are very much in alignment with the social model of disability. These principles complement accessibility standards, which offer concrete policy and technical guidance for multiple ICT types, as we have heard.

Next slide.

The principles of universal design were offered working collaboratively with researchers, engineers and practitioners that are promoted currently by the center for universal design at North Carolina State University in the US, and I refer to them today as examples of principles, and I'll read them to you.

Equitable use means that a design is useful and marketable to people with diverse abilities.

Flexibility in use means that the design accommodates a wide

range of individual preferences and abilities.

Simple and intuitive means the design is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.

Perceptible information means the design communicates the necessary information effectively to the user, regardless of the ambient conditions in the environment, or the user's ability. Again we see the focus on environment and individual.

Next slide.

Tolerance for error. The design minimizes the hazards of accidental or unintended actions.

Low physical effort. Design can be used efficiently, comfortably, and with minimum fatigue.

And, finally, the size and space to approach and use the technology. Appropriate size and space is provided to approach, reach, manipulate and use, regardless of the person's body size, posture, mobility or other factors.

Those knowledgeable about accessibility standards, many are in the room today, will recognize these principles exist in many of our dialogs. Drawing them out here may be helpful.

Now I would like to take you through a couple of example case studies that demonstrate the application of both accessibility standards and universal design principles that I just reviewed.

Next slide, please. For the examples that I chose, I chose kiosks as an interesting example. They show the physical environment and usage in a shared context. They are known to provide shared access to applications such as government and community services, transportation information, and ticketing, employment, training, and many other applications.

Many kiosk projects aim to enable both urban and rural populations. IBM is involved with many ranging from high volume retail or travel to kiosks used in remote villages to support community resource sharing.

There are a variety of uses in this case. However, all too often these kiosks use technologies or approaches that are inaccessible to people with various impairments. However, I would like to show you a few examples from government and private sector that demonstrate the possibilities for how access to such solutions can be improved when universal accessibility is considered.

My first example of universal accessibility is one from the United States. Next slide, please. From the U.S. Postal service automated postal center. This kiosk is used nationwide to provide postal services to individuals around the clock, in addition to Web channels and other channels. It lets people, regardless of their ability, perform some 80 percent of the transactions they could perform at a counter with a human

service representative. So it allows the postal service to expand how much it can support people without adding to its workforce necessarily, allowing that workforce to concentrate on more complex transactions.

This solution is designed to conform to US Section 508 self-contained closed product accessibility standards. And it also implements the Trace Center from the University of Wisconsin's easy access techniques by providing a variety of features.

Text to speech output, a special keyboard and other features which help people with physical and cognitive impairments use the system. This government application has been highly successful and it won the 2004 kiosk award, an esteemed industry award, indicating that accessible and universally usable products can be seen as best in class applications.

Here in the photograph, if you can see, you will see a shot of the screen and the hardware unit. It includes a tactile keypad, with a couple of keys showing up and down and enter, as some key hardware, dedicated hardware keys. There is a jack to insert a head set for private audio listening, which is required for privacy. And there is also a numeric pin pad to support numeric entry and support transactions.

There are other parts of the system not shown here, such as a scale to weigh packages, and other ancillary items which were designed to be usable by many.

Next slide, please.

My next and final example is an IBM example that I've been personally involved with helping bring to market, which is a travel and transportation kiosk. In many of our accessibility policies, transportation and mobility and independent living are very, very important tenets of our policy and we feel this kind of solution can help benefit individuals who experience impairments by providing the means by which service providers can implement more accessible kiosks for this kind of service.

This kiosk was designed to comply with multiple worldwide accessibility standards and also some emerging regulatory requirements.

For example, in the United States, in California, we have a new law which mandates all touch screen kiosks used in travel be accessible to those who are blind or who have low vision. And this is now part of the civil code and we're merging regulatory requirements in addition to policy and standards to comply with.

Like the US postal example, this solution implements the Trace Center’s easy access techniques, using audio help to guide the user through the transaction from start to finish. It includes the special keypad I described earlier and other features that allow people with physical or cognitive impairments to independently transact on an application such as

checking in, buying a ticket, or changing their seats on an airplane, those kinds of things. And here in the photo, you can see me demonstrating this kiosk at a recent worldwide conference, the CSUN conference on technology and persons with disabilities, hard-of-hearing to a blind user who is checking in a hotel.

This Screen, I'll just show you one, shows IBM's core airline application, where multiple travelers in a particular reservation party can be selected for checking in now. This may be a very difficult screen for someone who has limited or no vision to use. However, as you can see on the screen, we have included a highlight around the focused object and people with limited or no vision would hear the text that is surrounded by that focus indicator through the audio output they would hear in their headphones, for private listening.

Users who need -- are unable to access the touch screen, whether it's because they have a prosthetic hand or because they are -- with limited or no vision can use the easy access up and down keys, circled here and shown with unique shapes for up and down to move through the software application, and hear the content of each screen object which is read to them. And they can interact with each object independently.

Layered audio help is provided to ensure that when users have a problem, they can access through a dedicated key the audio help and be able to receive more extensive help. And note that people with -- suffering from medical or age related impairments can choose to use either one or many features. For example, an aging user with a shaky hand or some other impairment could just use the keypad and not the audio. On the other hand, a blind person can use both, the keypad and the audio.

So to summarize, we feel that harmonized accessibility standards can provide a consistent set of objectives that can serve as a Foundation for universal accessibility in products. Universal design principles can complement such standards and initiatives. And finally when both are applied to the design of ICTs, the result can benefit not only People with Disabilities but that large population of aging and other potential beneficiaries supporting positive change in the social model for disability.

Thank you very much.

(Applause)

>> WHITNEY QUESENBERY: Thank you. I point out there is another slide which contains a large number of resources and links. We don't expect you to read this. It's available on the forum Web site.

The next speaker is Tom Stewart. Tom is the joint managing director of System Concepts, a consultant in the UK. He served

as an advisor to a number of national and international bodies, including the UK health and safety executives, the design council and the World Health Organization. He is president of the ergonomics society. He is on the British, European and international ergonomics standards and chairs the British standards committee, the ISO committee, responsible for the ergonomics of human system interaction, including the ISO 9231 and 13407. And he is on the European standards working group on ergonomics.

He will talk to us about ISO work on accessible I CT, working with the technical committee on the ergonomics of human system interaction.

>> TOM STEWART: Thank you.

Hello? Thank you.

Good morning ladies and gentlemen. I'm pleased to have been invited to this conference. And to tell you about the work of the ISO committee that Whitney mentioned I chair. This committee has been going since 1983. So you'll be pleased to know I'm not going to go into great detail about all the work that we have done. If you looked ahead at any of the slides, you'll be pleased to know that I'm not going to go through them in great detail, either. They are primarily there for your reference subsequently, although I will say something about each slide.

Just to give a bit of introduction, this was for a meeting in Seoul, in 1997, with the conveneors of the various working groups. In ISO the technical work takes place in working groups, which are meetings of experts coming from the different member bodies, standards bodies, and then the subcommittee that has delegations from those standards bodies. In the UK, the relevant body is British standards Institute. In Germany it's DIN. In the US it's ANSI and so on.

Working group one, fundamentals of displays and controls. Two, displays. Working group 3 controls work stations and environments. Working group 4 completed its work and disappeared. Working group 5, software. Working group 6, human centered design. Working group 7 was definitions, which we never managed to complete. And working group 8, control centers.

Since 1997, we have added three new working groups. Working group 9, tactile interactions, relevant in the area of disability and accessibility. 10, accessible design for consumer products. And a joint group on common industry formats for usability reports, which Whitney was involved in.

One of our main standards with the ISO 2401 had the catchy title, ergonomics for visual display terminals. In 1983, we decided that we would limit the standard initially to six parts,

dealing with the physical ergonomics of office work stations, in order to speed up the development of the standard.

It took almost 20 years to complete some of those parts. Partly because -- next slide -- we also added a further number of parts up to 17 to deal with software issues.

One of the things that you'll note if you're familiar with that standard or if you look at the numbers later is that parts were added as the technology changed.

So, for example, although keyboards were identified as an important area in part 4, non keyboard devices becomes part 9. So there is not exactly random, but difficult to understand sequence to the standards. There is also a problem with the ergonomics standards, which is that the technology develops faster than the research. So it takes several years before people understand what the problems are with a piece of technology and therefore the standard doesn't help the developers to understand what they should do. So we developed a second standard, Whitney also currently mentioned, 13407, on the human centered design process for interactive systems.

Well, this is quite simple. It has four principles. Active involvement of users, appropriate allocation of function, making sure that people do what people can do well. Technology does what technology can do well.

And iteration of design solutions, you'll never get it right the first time and multidisciplinary design. The four key activities. Number one, to understand and specify what we call the context of use. The user, the task, the environment. Specify effectiveness, efficiency and user satisfaction targets for that product. Produce design solutions based on current knowledge standards and data. And then evaluate those designs against those requirements until you have the right answer. In theory, nothing can go wrong.

Okay. And that standard is widely used, but one of the problems with technology is it keeps moving on. And one of the constraints with 94 was that the title originally was office work, which is a loosely defined term. So in revising 941, which we have to do in ISO, is this going to build? I don't know why. Maybe I copied it in from somewhere else, just run through them. A number of principles like retaining the branding will be in office. Retitle of the ergonomics human system interaction. Make sure that each standard was focused on a particular user of that standard. Again, in the first standard, we often had written a standard that issued guidance for people buying technology, some guidance for people designing technology and it was combined in a single document.

In the new design we want it to have a clear user for each part.

We recognize that it was going to be a mess with transition between the old and new design, but that's life. So the next slide.

The 941 series now, it's numbered in the hundreds. That does not mean we intend it to be hundreds of standards. It's in order to try and provide a structure that is understandable. So, the first hundred parts effectively, many of them are not used. A few of the original 17 parts are used. Part one, introduction, part 2 job design. Part 11, guidance on use act principles. And a new part 20 on access bill. Which I'll talk more about in a moment.

Then, the 100 series becomes software issues. 200, human system interaction processes. This is where the logic hopefully kicks in. 300, displays and display related hardware. So if you remember part 3 was displays. 400, physical input devices, part 4 was keyboards. 500 workplace. 5 was workplaces. 6 was environment. And 700 for special application demands. And it's extended a bit beyond that.

Next slide. So specifically to do with the ICT accessibility, there are three standards that I'll tell you more about in a bit more detail. ISO 92420. 171, working group 5 in software. And 210 is also working group 6. I'll tell you about a couple more documents that are on the slide. There is a new work item, ISO 24503, which is guidelines about tactile marking of products. It's a very early development, based on a Japanese standard. And ISO technical report 2241, ergonomic data and guidelines for the application of ISO/IEC 7301 to address the needs of older persons and People with Disabilities. If you're interested in those or any other standards, I point you very strongly to the Web site that I mention at the bottom.

A good friend of mine Richard Hotchkinson wrote it. It's www.SSS.org standards report. There is no point in reading it. You can read it on the slide. And that's a very useful up to date summary of the whole range of standards.

Going onto the specific SV 4 ones. We use a definition of usability, which is about effectiveness, efficiency and satisfaction. And it's specified context of use. Particular users, particular tasks, equipment and environment. It's not the same as saying something is easy. Easy is not enough. It has to deliver effective results and that's a constant argument that we have with a lot of people in the community who are interested in usability and accessibility. It's not just about making things easy. They have to be effective.

And here we take the definition of accessibility to encompass usability. And this comes from what was the technical specification, 16071, that is now a standard, 9241 part 171, hopefully you see the logic in the numbering.

And for the purposes of our human system interaction, we say that the accessibility is the usability of a product, service, environment, facility, by people with the widest range of capabilities. So, it's not enough obviously to make it "accessible." There was a study in the UK, from what was then called the Disability Rights Commission, that applying the guidelines to the websites only finds about half of the problems. Because they -- the classic example is that one of the guidelines was that images on a website should have a text description. But a text description may or may not allow the user to perform a task. If the text description doesn't say that the image on the screen says if you go any further we will take money from your account, then that system is not usable, even though it might technically meet some minimal level of accessibility.

So that is the definition that we apply.

The problem with it is that obviously we're not saying that you have to design every part of every ICT to suit every user. There may be a range of facilities within an interface to suit different users. And that's perfectly acceptable. What isn't acceptable is to discriminate against any category of user by not providing them with equivalence access of the facilities in some way. In order to achieve this, we have two key standards. Part 20, next slide. Which is an overview of accessibility guidelines for information communication technology, equipment, and services, covering both hardware and software. One of the challenges that we have had in this committee since 1983 is that the distinction between hardware and software is increasingly irrelevant to the user, although it may be very relevant to the service provider or the product designer.

What matters to the user is their experience of a product. And so within part 20, and as also within part 1, where we give general guidance on usability, it applies to hardware and software, so in part 20 we give general guidance on principles of accessibility that are relevant to both hardware and software.

There is detail on the slides for those who want to read it later. But in fact, the overview standard, we drew on the work of the special working group on their mapping to make sure we cover the various areas of accessibility. And it's aimed at people planning, designing, developing, acquiring and evaluating ICT hardware and software.

The intention is to ensure that we cover things like the management of the development process. We identify the key characteristics that are relevant in terms of vision, hearing, speech, physical capabilities and cognitive capabilities.

Very importantly, we focus on the task characteristics,

equipment and service characteristics and the environment characteristics. It's a very general high level standard that sets the scene for what hardware and software in ICT should do for accessibility and that standard has just been published.

The next standard also just published goes into more detail on software.

Next slide. Thank you.

ISO, the European style guidance in software accessibility. This is aimed specifically at software designers and provides a lot of detail on software issues both for platforms and for applications. It complements the general design covered in other parts of 401 on software and it's in harmony with the United States factor -- human factors and ergonomics guidelines. It replaces that technical specification.

Next slide.

So it covers a number of -- just the key clauses in it. The rationale and benefits of implementing accessibility, principles for designing accessible software. Sources of variation of user characteristics. How to use this part in relation to the other parts of 401. General guidelines and requirements including compatibility with assistive technology. Input devices, output devices, including visual, audio and tactile output. And online documentation, help and support services. It's a lengthy detailed standard. But if you're developing software and you want it to be accessible, you should use this standard, which also has just been published.

Next slide. And then just to bring you up to date, one of the key principles that we believe in and are committed to is that, as we said before, accessibility is not fundamentally different from usability. It's actually just looking at the characteristics of your user population. If you take a count of that user population and design appropriately, then if that population you're designing for includes People with Disabilities, then that product is accessible. But what that involves is understanding those users, the tasks they're trying to perform, the environment they're in, and the equipment they are using. So the human factored -- centered design process is the key to achieving accessible products. What I'm sharing now is the revision of what was 13407, which is currently out for vote as the CD, which is the committee draft on the stage to becoming a standard, ergonomics of human system interaction, 210.

Design processes for interactive systems. This again is not specifically about accessibility, but it's about designing systems for the users. And in today's context, those users include the capabilities of people. I think the idea that accessibility is something that you think about, you were saying

that usability isn't peanut butter you smear on later. I don't think accessibility is something that you bolt on later. It's fundamental to the target audience, for the system or services that are being developed. So I include the text here, but it's basically not changed dramatically from the old 137 that you had in an earlier slide.

We have extended the principles, slightly. We have actually added a couple of them. One is to add -- in designing for the user experience. This is controversial at the moment. User experience is a widely used term. Aesthetics, packaging and branding. It's contrasted to usability by people who don't use the right definition of usability. But if you take usability to include efficiency, effectiveness and satisfaction, then aesthetics are included. But using the term user experience helps in two areas. It helps when you look at things like consumer products, that are shrink-wrapped software, the experience of the user is much more than just the interface with the actual device. It has to do with the packaging, branding, support, overall experience of buying, using and enjoying that product.

But equally, if you look at big systems within organizations that are developed for processing or customer service or whatever, looking at the user experience, also takes you into thinking about things like job design, organization, what the working environment is like. So we believe that is a useful broadening out of the usability concept.

But you'll notice that the four activities at the bottom are exactly the same. The user centered design process hasn't changed at all.

That's the end. Luckily my last slide was to say if you want to know more about what is going on in that ISO committee and more detail or if you'd like to participate through the national standards body, give me an e-mail and I'll be delighted to talk to you. Thank you.

(Applause)

>> WHITNEY QUESENBERY: Thank you, Tom. One of the disadvantages of this layout for the chair is that I don't have a good hook.

Our next speaker will be Stephen Furner. Steven is a senior technologies manager at BT Research Labs, he leads research into human aspects of future technologies at the research center. He publishes academic papers and has been on national TV and radio talking about this research. He is here as the chairman of the technical committee for human factors and is a matter of the DATSCG. Steven will look at the human factors activity in the European context and their work to create necessary standards on

the means to accommodate the needs of the disabled and the growing number of older users, including guidelines on relay services for the deaf. Steven?

>> STEPHEN FURNER: Hi. Can you hear me okay?

All right. Is the software up?

Can the sign language signer hear what I say? If you don't know me, I'm Stephen Furner. It's a great pleasure to be here. My background for my day job is working for British telecommunications in their research center. But I have the pleasure to be the chair of the Human Factors Technical Committee as the telecommunications standards. We will talk about that today. I'll scamper through briefly some of the key aspects of it. This is the human factors area of that. It primarily deals with technical standardization issues.

We tend to think of ourselves in the human factors area as starting with the human experience. There are something like 700 members of the institution. It spans 60 nations, it's over five continents, and there is, as I'm sure you are aware, a lot of different experiences within that background. At first we tend to think of standardization not as being about conformity, but about creativity. We like to be seen as a part of something that diversity can grow. It's not something that should prevent people from moving forward in new and creative ways. The Human Factors Committee makes a small contribution towards these kinds of activities, we like to think. There is an organization. We deal with ease of use, telecommunications, equipment and services, and also code the requirements -- including the requirements of older people.

Although it has telecommunications in the name, it's primarily dealing with ICT and information technologies. For those of you here who are familiar with the history of telecommunications, what I'm sure you're aware is that there was a long time, they used to charge for services on a second by second basis. We are moving towards new technologies that lead to the integration of mobile and fixed communications services and multimedia into your pocket. We tend to meet three times a year. I have the good fortune to chair this committee. Typically we meet face-to-face, but we also meet in Brussels, and occasionally at the headquarters of the different members of this. My vice chair is B. Van Neenan. And I have other people also. Participation is by major industries, but we have NGOs.

We have been able to provide consumer input into organizations. They are a vehicle through which organizations are able to take part of our committee. We come to view ourselves primarily as technical experts and we tend to encourage to deal with technical issues rather than consumer or policy issues.

We do have the -- a number of specialist task forces that are active within the committee and they also come along to the meetings. And they also bring along any experts who need to clarify any issues that we -- the committee needs to deal with.

There are three areas that I'm very active in. That's in new wave technology, fixed technology. We started doing work for a number of years on children's use of ICT and issues such as realtime communications. The fixed mobile convergence tended to focus around user profiles. As well as looking at things like enterprise wide systems. And with the accessibility work, we have been active on mandate 376, all accessible ICT procurement, as well as issues such as multicultural interfaces and user profiles, such as E health systems.

One of the interesting features of Europe I think is its diversity. There are many different people out there using our systems, much more than has traditionally been acknowledged by the telecommunications providers. In years gone by, we have seen -- in the last five to ten years, we have seen a huge growth in the services being pushed both up and down. We have seen a larger number of much older consumers trying to use sophisticated services. We are seeing larger numbers of younger users trying to use sophisticated services. In the past, we may have if you know -- a simple device such as a telephone being used as a business tool or in some circumstances in the home. Now we have issues with children trying to gain access to advanced multimedia systems.

We are dealing with services that are 24/7. And we are moving into domestic and commercial environments. In some cases now we are seeing more sophisticated technology in the home that we expect to see in the workplace. In many cases a workplace PC will be a conventional windowing system, with using spreadsheets, e-mail. If you go home, they may have a home private network with extensive multimedia systems integrated into it. These kinds of challenges are challenges that we need to take on board and as Tom said earlier, it's no good waiting for the technology on the desk that is not working. You have to intercept the technology in the way. My experience in the telecommunications industry, it's a lot more expensive to saw the boxes in half in order to make them accessible than it is to just rub out the distance of the door frame before you send it off to your manufacturer.

I think as far as successes and failures for our committee are concerned, we think we're very good in that we have managed to bring together a group of leading European experts. We do publish very widely and we do also have the chair of the human factors in telecommunications in our group. Our group does very actively engage in publication. And we believe we're highly

regarded for the work that we do. We would like to point to the continued success we have in funding to promote standardization initiatives.

I think where we are failing is in the human factors. Systems are coming out that are far too sophisticated for people to use. A lot more work needs to be done in this area and we have to see people more active on the ground in dealing with these kinds of issues. Another major problem, one that is endemic to the engineering industry, is the poor agenda balance. Ergonomics tends to be good with respect to gender issues. But typically we are only talking about 10 or 20 percent at most of people that I come across working in the area being female. We don't see enough participation directly by disabled people in engineering activities. That is something that should be -- that disabled people should be having a role in it.

We like to think that we are listening to the user. One of the things about the human factors committee is that it's no good sitting around, waiting for people to come to it. We have to go out to them. We have to be prepared to listen to what they have to say.

My own experience with the human factors is it tends to work if you have a good relationship and the people feel they can trust you and you are acting as part of their team. That means you have to get out there, get your face known and be prepared to push.

We think we are different from the other technical committees. We have a lot of different technical committees. And they are all coming up on answers. We go out to the people. We use social science in order to understand the problems that people have.

We work in an interdisciplinary manner. And we will go along to the engineering groups, the designers, and include them to come up with a viable solution. We think we have to be prepared to go from the requirement stage right through to the action stage and be prepared to engage all the while on that line to deal with the issues and concerns. It's not always just a case of what we need is a good manual talking about how to use it. You have to be engaged with the design staff and be able to talk to them in ways that they can understand.

The kinds of products and services that people are now doing, work on. We talked about a phone coming out on to the market. It includes a number of features that are based around standards that were produced from the human factors group.

Globalization aspects are important to us. I think it's very important that Europe is not in the backwater and that it engages at a global level. We try to minimize the amount of

fragmentation. In order to exploit economies of scale in the equipment that is produced in the accessibility market, we need to be able to access the largest market possible.

Also, I think it's important that within Europe we don't wind up with disabled consumers being given technology that is out of date. There is some technology that is expensive that is locked into particular regional areas. They must experience the best technology. It must be having its costs reduced through engagement with the mainstream technologies. And I think mainstream technologies will benefit in terms of the general use.

Where to next? We think we would like to see better exploitation of the international program. There is a lot of good research going on out there. It comes to us in the form of standardization work. We have been successful in some areas in being able to build on the work of the framework program. But I think there is a lot out there to be done. In some cases, timing might be an issue in the projects. We don't realize the standardization that they need to do until they finish the project, by which time all of their resources are used up. And there may be some issues about documentation.

For us over the next few years, I think the society, the multimedia products, the convergence of the fixed and mobile networks, the issues about the drive of multimedia into the home, it's up and down the age range, the huge increase in uses and the benefits which are to be gained from online deliverables will be things that will impact on us, as well as important issues such as inclusion of accessibility, either in Europe or other societies.

It's my belief that a person should have access to the information society in the future, instead of being excluded from participation in the society.

A huge volume of information is going over the networks. If you are excluded from the networks, you'll be excluded from society.

If you have any questions, I believe our chairman would like them at the end. Thank you for your time.

(Applause)

>> WHITNEY QUESENBERY: Our last speaker is Gregg Vanderheiden. Gregg directs the Trace R and D center at the University of Wisconsin. Access features developed by Gregg Vanderheiden and his team were built into the Mac OS, Windows '95, NT, 2000, XP and Vista. So most of us use them in some way every day. Cross-disability access techniques are built into a number of systems, such as Amtrak, a US rail ticketing system, and the US automated postal center. Gregg is the chair -- co-chair of the -- of the World Wide Web Consortium's Web content

accessibility guidelines, the chair of the MC insight V 2 technical group. Editor of the 2002 standards relative to accessibility. And the list of advisory committees on which he served is way too long to attempt here. You can see it all on his bio on the Web site.

His topic is making access accessible for the other half, 25 percent, 75 percent of users with disabilities, and looking at new standards and approaches.

>> GREGG VANDERHEIDEN: Thank you very much. I'd like to build on some of the comments we just heard. We have been doing a good job in getting a handle on access issues and needs, at least for the past technologies. And we are beginning to look forward. But there are some, in addition to the technical aspects, we need to look at how it actually plays out in the world. And the concern is that we are actually creating devices and standards and technologies that will provide access to all of those who need it, or are we only addressing the small target, high capability users, users with lots of resources, and are we really getting across all the disability areas?

I'll touch on four problem areas, and that is basically the cost versus the resources that users have, the fact that everything we're doing is changing very dramatically into a new model that may not work with our old solutions. The fact that AT is increasingly having trouble keeping up. And this is a problem not only for the AT vendors, but it's also a problem for the mainstream vendors. And there is also a very, very steep and getting steeper entry climb for anyone trying to get new technologies, new types of AT, and this is a particular concern for areas like cognitive language and learning.

First, cost versus resources. Most users, if we look worldwide, who need the ATs cannot really afford ATs that are good enough to access the current generation of technologies we're deploying. I was talking to one major Internet site that is extremely widely used, and they talked about the fact that yes, that they were working with an AT vendor. And on the day that they came out with their Web site there would be new AT that could actually access it. And there were a few problems that leads to say this. First of all, it means that that Web site comes out and on that day nobody actually has the AT, because it's being announced the same day.

The second thing is that that AT costs over a thousand dollars. And that is a little steep for many people in the developed countries. And in other countries, those kinds of numbers are just in another realm.

Thirdly, even the people who use the technology usually have versions that are second through -- it takes a couple years before people catch up to using the latest version. So this is

the best access we have. And in many countries, they don't have that level of technology, it doesn't work in their language. This is a serious problem.

We need to be looking at the fact that this is a barrier in developed countries. It's huge barriers in developing countries. And many, many people don't have their own technology. It's not that they can afford the computer and they can't afford the AT. Many, many individuals are using other people's computers. They are using computers in their environment. And they don't have the ability to pay for computers, much less to pay for this type of AT.

Secondly, we're evolving into a different type. We used to be -- we had a personal PC, and if you couldn't access it, you adapted a lower version of that. As we move to ubiquitous computers, as we move to the point where we use whatever screens are around us, the information technology is like electricity. We don't carry around our own battery packs and things like this. There is a plug in every room. We don't carry around our own lights with us, because we expect there to be lights in any room we enter. And in the future, we won't be carrying around our little laptops and stuff, because there will be screens in every place that we go. And this model of patching your own version isn't going to work in the world where we don't carry around our own computers. It would be cumbersome to think about it.

Think back, it used to be when you went from room to room, you carried your lantern with you, because you carried your light. That's where we are at now. We carry the laptops around in the same way that the people carried their lanterns around. Today that seems funny and ancient. We are going to need what I'll call ubiquitous accessibility. And that is completely different than the model that we have been coming from for much of what we have been doing.

Third, the AT vendors are just having a devil of a time trying to keep up. They spend more time keeping up than they are doing anything innovative. Look at screen readers from five years ago and look at them today. Mostly, why do you buy the newest version? It's because the new version won't work with the new operating system, not because it has a bunch of compelling features. Almost always the new versions are purchased not because they are more beneficial, but simply the old ones don't work with the old technologies. This is really very sad, especially given the cost. The AT vendors are having trouble keeping up not only with the fact that just the whole operating system changes, but now we are getting new interfaces. Look at the iPhone, Microsoft surface, and think of how screen readers will do with that kind of thing.

As we move, think of the surface and ubiquitous computing and where we are with AT, and we start seeing that we have got real serious problems. Wayne Gretzky, a famous hockey player, was asked: why are you so good? That's because I never skate to where the puck is, I skate to where the puck is going to be. And we need to begin to do that. We are not skating even to where the puck is. AT currently is skating to where the puck used to be. And it's constantly trying to catch up.

Now, this isn't just a problem for the AT vendors, this is a problem for the mainstream I T vendors just as much. They have all of these different AT, which can't keep up. The mainstream vendors will go to the AT and say: I will pay you to get caught up. And the AT vendors say I have no capacity to catch up -- I have no capacity to work on your project and abandon all of these other ones.

So we have a very large -- as a matter of fact, in the large meeting we just had, there were even vendors who were suggesting that a product should be declared as accessible, passing the standard, if the information is exposed in a way AT could get it, even if there were no AT that actually used it.

So the government would buy things that were not usable by People with Disabilities, and theoretically would work with AT if it was there, but there isn't any AT. And that doesn't really help the government employee who needs to work.

Then what do you do? So we need to be looking at models that can try to address these problems for both.

And then, finally, we have the very high cost of creating the engine, if you will, that can interpret these new technologies is so high that when we talk about cognitive language learning, you can't get an AT vendor who will start up and who has ten million dollars who will build a new interpretive core. There is a lot of work being done, but it's what you would do to present the information to the people with cognitive and learning disabilities, but there is no way to develop that. Micro AT is the ability to sell a future for some researcher, some developer, some country to say look, your information is there. We have an engine that can interpret these Web Pages, this is how you present it. I'll sell a future that makes it better for presenting. Something that can address particular disability, without having to engineer the whole thing from scratch.

Currently, we are in a situation where societies and policymakers, and this is really a big issue for Europe right now and for the U.S. they are in a position where they are stuck between two decisions, neither one of which is tenable. They have to ask the mainstream industry to slow down and not introduce new technologies, because AT cannot keep up, and that

makes no sense. Or you say it's okay to progress if you would just always be behind and People with Disabilities -- behind for People with Disabilities. That's no good, especially if they have to compete for jobs, and perhaps even to live successfully independently.

We need new models. And so we need to raise the floor, the base technologies, that everybody has, so that everybody can have effective access to the mainstream technologies. We need to do this without slowing down or hindering mainstream progress. We need to provide support to the AT vendors to give them some chance to keep up, so that they can begin to get back innovating and to addressing all the other disabilities that we don't have.

And we need to be able to find models to advance the AT market away from just the fixed version in front of you to be able to address these new directions.

Now, we provide public libraries, because we think information needs to be available to the public, and we provide public schools, because we believe that education needs to be accessible. So we have to at least provide a basic level of free public AT to allow individuals with disabilities, people who are older, to be able to access and be able to get to both the information and the schools, both of which People with Disabilities are not going to be able to participate in.

This is going to be an interesting journey, because it will change some order of things. The fact that there are public schools can be seen as a negative, if you've gone to private school. However the alternative is that 80 percent of the population doesn't get school. So we need to be looking at these.

Now, there are a couple -- two efforts that are now being launched to try to address some of the issues. First is raising the floor initiative, which is now being formed. It's an open source international collaborative effort to build access directly into the Internet, so that there would be a basic level of AT that is free. That could be invoked any time, anywhere, by anyone. So a person could sit down to any computer anywhere and invoke the AT that would then allow them to access.

You can also invoke commercial AT the same way, so that a person would be able to access in the basic level of AT, they could get their more advanced versions, if you would, in the same way, any time, anywhere.

And also, to open up a core market, so then you could have many people add on to AT and have variables to this. But it would all build on one common core, which means that mainstreamed IT would also have an easier chance. That open source core would be available. The IT companies, ICT companies

can build to it. And private AT can also take that open core and build private AT off of it, so that it can act as a boost even to the private AT companies to allow them to reach higher.

The other effort is looking at user interfaces. Not everybody can invoke their AT. Some need physical interfaces. If you have a physical device, physical disability and you have to use sip and puff, you can't invoke a sip and puff switch magically out of the Internet. So they are talking about a couple standards. One is the universal remote console, which has been provided to ISO and has gone through the process and now just has been released as a new standard, 2752, that allows people to have their own personal interfaces which acts as an alternate interface to mainstream products, so that the mainstream product can have whatever interface it wants to, but the People with Disabilities can use their own. There is a wireless USB and Blue Tooth and other wireless connection standards, so that person can bring their own switch or interface, and then invoke the rest of the AT, if you would.

The idea is to be able to have interface substitution so that people can bring and use special interfaces as they need to. And this can work in combination with the other effort.

In conclusion, we have to be able to look at the fact that and find ways to address this advancing technology problem. This technology is advancing very rapidly. It's giving us new capabilities and opening up worlds for all people, including People with Disabilities that will redefine the model that allows AT to keep up. So that we can let ICT race ahead at whatever rate it wants to, unbounded, and still have the People with Disabilities riding along on that wave and not behind it.

This is a problem. It's not just an inconvenience being behind it, because it means that you don't have access to the information. It means that you don't have access to jobs or independent living. And so being behind is not just inconvenience, it's not just not having the latest versions of things. It's like not having access to any of the information or being able to compete. So we have to be able to address the issue and finally we have to be able to find ways to allow all people in all countries to be able to find AT in their language that works and that allows them to access this. Or they will begin to fall behind as well.

Thank you.

(Applause)

>> WHITNEY QUESENBERY: Thank you, Gregg. Obviously we're not going to take questions at this point in our timetable. But we need a few words on logistics.

>> Thank you, Mr. Chairman. So we are really late concerning

the program, and at least 35 minutes late. So I would like you to take only a ten minute coffee break and everybody be back at 9:45. Thank you.

(Break)

>> Session 2. Accessible contents and services: Addressing information deprivation. W3C initiatives, globalization of Web standardization efforts, issues in ensuring compliance with accessibility standards.

>> ERIC VELLEMAN: So welcome back, everybody, for the second session of this day.

And in this second session we have four speakers. We have Martin Gould. Hiroshi Kawamura, Judy Brewer is joining us from Beijing and we have Clive Miller. I'd like to change the agenda a little bit and start with the presentation from the -- from Judy Brewer, from the Web Accessibility Initiative. Director of the World Wide Web Consortium. She joins us through a W3C cast and maybe she can introduce herself a little bit for people who don't know her here. Judy, are you there?

>> JUDY BREWER: Yes Thank you, Eric. And I appreciate the opportunity to talk with you remotely here. I wish I could be there in person. But there are several conferences happening in Beijing right now, and so I'm participating in those.

And let's see. Eric was asking me to say a few things about myself. I've been working with the World Wide Web Consortium, W3C, for over ten years now, directing the Web Accessibility Initiative, which we call WAI. And that work, in that work I have the opportunity to bring together people from many different communities to address the issues that People with Disabilities have on the Web, to try to make the Web accessible by coming up with technical solutions and guidelines that can be used hopefully anywhere in the world and actually that's what we see is happening. And it's a pleasure to be able to work with an international standards organization to work on accessibility.

So I understand that you have my slides available to look at and I'll count on somebody advancing those slides as I go.

The title is Web accessibility guidelines development, harmonization and implementation and I'd like to update you on some of the latest work, after covering some basics about our work and then talk a bit about some of the harmonization issues that we find with today's Web and also talk a bit about how we can try to achieve better implementation of Web accessibility.

I was interested to see the title of this panel, because it talks about information deprivation. And that seems to me an important concept and particularly significant given the new

writing convention on rights for People with Disabilities, that names information access as one of the essential rights that People with Disabilities need to have to be able to fully participate in society.

And so one of the forms of information deprivation in today's world I believe is the accessibility barriers that can occur when people with some disabilities try to access the Web. And because of the extent to which the Web has become such an essential resource that enables access to education, to employment, to civic participation, commerce, healthcare, recreation, social networks and many, many more aspects of participation in society, and I realize that not everybody has access to the Web yet. The number of people who do is rapidly increasing every year. And it's important particularly in places where the Web is first becoming a resource to build accessibility in from a design stage. The work that we do is through the W3C, which is vendor neutral, primarily industry consortium, which promotes universality of the Web and we develop open standards for the Web.

The W3C includes accessibility as one of its core principles and its core areas of work. The mission is one -- the Web accessibility is one of the five key areas. And we address cross-disability user requirements for the Web. So that includes visual disabilities, auditory, physical, cognitive, neurological, and also many of these -- many of the functional issues that come up with what are traditionally seen as disabilities also affect people who have accessibility needs linked to aging. And this is an area of work that we have taken on more recently where we have been looking at how to better explain how our current work applies to people with accessibility needs due to aging. And we are looking back across the previous work that we developed over previous years so that for future work on our guidelines we may be adjusted from areas that are of particular relevance to people with accessibility needs due to aging.

But for the lowest part, the needs are very similar and they are just not always well explained or addressed. In our work we developed census based technical solutions to meet the user needs and also to ensure that the user needs are addressed in ways that are feasible for developers. Our work is supported by government, including the European commission and the US Department of Education, and by a number of industry sponsors, including IBM and Microsoft, SAP, and also by W3C member organizations. All of our work at WAI takes place under a vendor neutral W3C costs.

And I've been asked often in the past, and again recently, what kinds of participation opportunities there are in the Web

Accessibility Initiative. While we have been active for ten years or so, sometimes people may not realize the number of different working groups we have working in different areas. And so I wanted to mention that, because really I think the strength of the work going on at WAI is due to the extensive participation. And so one of the channels for that is the eight different working groups and interest groups that address developmental specific guidelines, and review of new technologies coming out of W3C, and from other organizations as well. Work in the area of evaluation, particularly of Web content. Development of educational resources, and also looking at some trends in advanced research to see the potential impact of accessibility in the future.

And there is a great deal of participation through extensive public review and comment on our materials. There are opportunities for invited experts, sometimes they are individuals, sometimes they are individuals who are representing smaller organizations who might not be able to have the resources to join, the agency member organizations. And also I've been asked relative to this presentation just what it takes to try to get this participation. There are support participants who might not have the resources to participate in the face-to-face meeting, or who may need interpreters and so forth, and so we provide support that way. One of the important parts of the work is that it's multi-stakeholder, and so that includes representation from industry, developer, from the disability community, from accessibility researchers, from government, from education.

We feel it's important to have all of those parties present. So if you look at how one tries to achieve an accessible Web, it really requires many things to happen together, complementary approaches.

And one of the ways that we have addressed this is through different kinds of guidelines, even though we developed the Web content disability guidelines that many people are familiar with. There are other guidelines, which are complementary to that. And so for offering tools, which help create Web content, we have the authoring tool accessibility guidelines, and those explain to a software developer how to make sure that the user interface of the authoring tool, that can be something like Dreamweaver or Front Page can be used for People with Disabilities, -- by People with Disabilities, because People with Disabilities shouldn't be excluded from creating Web content.

And it also explains how to make sure that the authoring tools can help promote creation of accessible content. And this is really one of the most important aspects, because it's

important that accessibility be easy, as easy as possible, so that if the software helps you create a Web site by prompting for alternative text or captions for audio, for instance, then that helps the developer remember how to do that.

So the content of the Web site needs to be accessible. It needs to, for instance, to have captions for audio or descriptions for video. And that is explained in the Web content accessibility guidelines. But the browsers and media players also need to be accessible for People with Disabilities and that is explained in the user agent accessibility guidelines. All of those guidelines need to be met on a foundation of accessibilities supporting technologies, and those technologies are -- if they are W3C technologies, they very likely have been reviewed from early stages to make sure they support accessibility. But more and more we're seeing guidelines from other organizations -- sorry, technologies from other organizations also be designed to support access built.

So, on the next slide it also talks about these three guidelines, again the Web content accessibility guidelines, the authoring tool accessibility guidelines, the user agent accessibility guidelines. Each have roles to play with regard to making the Web accessible for People with Disabilities. The user accessibility guidelines also address some extent of interoperability with AT used by People with Disabilities. Just a brief word of the difference between 1.0 and 2.0 lines. The 1.0 are existing W3C recommendations, and they have been available for a number of years at this point. The 2.0 versions are all under development. 2.0, the Web content in the 2.0 guidelines, people are interested to know when will it be done?

I think people will be happy to hear that we expect in the next few weeks that we will take 2.0 to advance, they will make a significant document advancement to candidate recommendation, where we do implementation testing. And we will be doing that for a few months and we invite people to try it out on your site and to give us feedback about how that works.

But all of the 2.0 versions address more advanced Web technologies, with improved accessibility for People with Disabilities. They should be easier and clearer for developers to use. And also, more precisely testable.

I want to just highlight guidelines right now. I want to talk about the accessibility problems that we have seen. W3C is developing a WAI/REA for accessible Internet application, and so that provides accessibility for AJAX, HPML, Java, there are controls for navigation, drag and drop functionality and access to updates and page content to be made accessible. And I encourage people to look at that resource. That is also already undergoing implementation.

One of the things that we have to talk about is the standards that harmonization can bring and access rating the pace of accessibility. When people use harmonized guidelines, and this is by direct referencing or adopting an international standard, such as the Web content accessibility guideline, it eliminates conflicting requirements that would otherwise arise between country -- requirements of different countries, or in different sectors, public and private. It helps provide a unified market for authoring tool developers, so we may see faster iterations of supporting authoring tools. It has sharing and reuse of implementation resources, and performance testing because more resources can be devoted to improving the quality of the testing, rather than having to support multiple standards:

So what is the current status of harmonization efforts? We have -- most of you are probably aware, given some of the presentations going on today as well, of the completion of the federal advisory committee portion of the UST IT AC work, this is updating sections 508 and 255 in the U.S. and that will filter through another year or two of development of regulations. There are still some gaps in conformance levels of some provisions absent from the TI TAC. And the one concern that I have, despite the incredible hard work that people did on that committee, and I believe you'll hear from Jim Tobias later today about some of the work of the group there with regard to the Web content. I think that the differences that remain could still remain in fragmentation, unless there is further alignment of the regulatory process.

There are additional harmonization opportunities that are coming up with the European Commission mandate on accessibility, with the Japanese industry standards association and in other countries. And so I would say, I say to everybody to try to maximize the opportunity for direct harmonization so that we can accelerate the Web accessibility process.

One of the things actually, just to mention in the context of many countries, where it's important to have translations available that can be adopted is that W3C does now have a policy for authorized translations. And please contact us if for some reason you cannot find the information on that.

>> JUDY BREWER: So one of the other things that we see is that while there is a great deal of adoption of standards, that the implementation in many countries that have adopted Web accessibility standards is still less than is needed to meet their requirements for People with Disabilities.

So some of the things that we see are helpful in that is to engage in a thorough process of implementation planning, that includes involving all stakeholders, adopting policy standards and frameworks, promoting awareness, deliberately selecting

authoring tools that support accessible content, training developers, conformance, and also addressing the mind conformance that one finds when doing assessments. Implementation opportunities include the upcoming one, please be on the lookout for invitations. There are 2.0 and also REA that I mention. We have extensive online resources, both educational and technical.

It looks like the URI has a contrast problem. That would be W3.org/WAI.

And that includes resources and areas of introducing accessibility guidelines, managing, and so forth. So thank you very much for your kind attention. And I guess back to Eric now.

>> ERIC VELLEMAN: Thank you, Judy.

(Applause)

The next speaker is Martin Gould, Director of Research and Technology on the National Council of Disabilities. He worked as Director of Outcomes Research for the International Human Services Nonprofit. Martin?

>> MARTIN GOULD: Good afternoon everyone. Thank you for letting the National Council on Disabilities participate in this forum. Thank you to Axel and Stephano and the other support that the members provided over the last several months.

The landmark treaty on the rights of persons with disabilities will come into force on May 3. We are delighted. We offer the remarks as a roadmap of some of the information deprivation in the context of the global population of People with Disabilities, as a model for considering priorities for ICT standards and policy making, an analysis of information deprivation in the digital divide as well as a review of global poverty as it affects People with Disabilities.

After the world summit on social development in 1995, 117 countries adopted a declaration and the program of action, which included commitments to eradicating absolute and reducing over all poverty. Absolute poverty was defined as a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education, and information. It depends not only on income but also to on access to information and services.

Next slide please. Information -- information deprivation involves no access to newspapers, radio, or television, or computers, or phones at home.

As of the end of 2007, information deprivation can be put in the context of global population, the installed base of information devices and socioeconomic and geographic disparities.

We offer this as a model for your consideration. A global number of People with Disabilities possibly deprived of access to ICTs. Table one represents low hanging fruits and priorities for standards and policy making, simply based on a worldwide install based on information devices. That is 850 million PCs. 1 billion Internet users, 1.3 billion telephone land lines. 1.5 billion TV sets. 2.4 billion radios. 2.7 billion cell phones that include 1.8 billion text messaging users. More than twice the number of e-mail users. Table one estimates the performance size of the population concerned. This was done -- an equal penetration of each category of device of the world population among specific groups of People with Disabilities. The ideal outcome targeted by the UN convention.

For example, at the intersection of TV and hard-of-hearing, we estimate the number of persons possibly deprived of TV access by multiplying the global penetration of TV sets over the worldwide population by the number of people who are hard-of-hearing.

The data from table one in turn gives us an idea of the scope of improvement, which could be derived from relatively simple standardization of policy initiatives. For example, making TV sets prewired and programmed foreclosed captioning, together with an obligation for broadcasters to ensure a certain percentage of programming with captions would potentially address the needs of 17.2 million persons who are deaf and hard-of-hearing worldwide.

Making text-to-speech capabilities compulsory in cell phones as another example would address the needs of 16.1 million individuals who are blind worldwide.

Next slide.

In 2004, the National Council on Disability conducted a product analysis of 6 product lines. That is automatic teller machines, cell phones, PDAs, personal digital assistants, learning software, TVs and voice recognition technologies. Our intent was to document accessibility issues that prevent People with Disabilities from fully accessing the selected products and to document functional accessibility features that either were currently offered or could be offered by the manufacturer.

The end result of this product analysis was the assignment of a grade to each product line for each disability group as you see in Table 2. Table 2 is accessibility grades by six product lines. The grades may be useful to designers and manufacturers to identify the target populations that should be consulted during the design process, if they were not already, so that more accessible design features are incorporated into newer products.

As the results indicate in the table, certain product lines

are very accessible to some people, but largely inaccessible to others.

Cell phones are largely inaccessible to users who are blind and users who are deaf, incorporating more features that make this product line more accessible to these users will expand the market for cellular phones.

As a second example, televisions were found to be most inaccessible to users who are blind because of an inability to locate, access and read information features in control.

Next slide, please. The term digital divide refers to the gap between individuals, households, businesses, and geographic areas at different socioeconomic levels with regard both to the opportunities to access information and communication technologies, and to the use of the Internet for a whole variety of purposes.

Recent measurement initiatives have taken on assessment of various aspects of the digital divide. Let me provide a few examples.

Next slide, please. Table 3 represents World Bank income group categories. Table 3 shows the World Bank income group categories and reveals that the majority of the world's population lives in low or low to middle income countries, which represent about 4.75 billion people in 113 countries.

Next slide, please.

Table Four represents ICT indicators by income group. Table Four reflects the relationship between income groups and several indicators. The person in a high income country, for example, is over 48 times more likely to be an Internet user than someone in a low income country. Mobile phones are 17 times more prevalent in high income than low income countries, and that dynamic is changing. Telephone land lines penetration in high income countries is over 62 times that of low income countries. TV sets are 8 times more prevalent in high income countries than in low income countries.

Table Five represents ICT subscriber rates by country sectors. As depicted in Table Five over the last 12 years, the telecommunication and ICT sector has undergone major changes. With high growth in this sector, penetration rates stood at more than 40 percent at the end of 2006. Despite major differences in the developed and developing world, mobile services were critical in enhancing access to telecommunications in many developing regions and rural areas, where fixed lines remain limited or nonexistent. Although access to the Internet has been growing rapidly, too, the number of Internet users in developing regions remains limited. By the end of 2006, just over 10 percent of the world's population in developing countries were using the Internet as opposed to 60 percent in

the world.

Ten percent of the world's population, 650 million people approximately, experienced some form of disability. Disability is both a cause and a consequence poverty. Eighty percent of the world's population of People with Disabilities within developing countries experience social and economic disadvantages and denial of rights. It's clear that the disability dimension needs to be taken into account with the mainstream policies, plans and product designs.

Next slide, please.

Table 6 represents the number of people in millions in developing countries probably deprived of access to ICTs. Table 6 represents a rough estimate of the number of People with Disabilities in developing countries who are probably deprived of access. The figures are derived from an extrapolation of the numbers presented previously in Table 5, which is the global estimate of total number of People with Disabilities in various groups, times the percentage, which is 80 percent of People with Disabilities living in developing countries.

It's very important not to forget the goal of providing ICT in developing countries. The point is to use ICT and technology as a means to provide information and services, such as health, banking, government services, education, businesses, recreation, and the like. To improve the life of people who do not have digital access. The first step to accomplish this goal lies in the standardization and policies. Access should be provided to all and the solutions should be tailored to meet the needs of People with Disabilities. For example, through government, e-commerce and e-business in middle and high income countries, text messaging is prevalent. Internet is more limited.

This likely would have an impact on priorities for People with Disabilities in the middle and high income countries. As leaders and citizens -- with that low income or developing countries, solutions would likely involve a different mix of ICTs and accessibility solutions, based on each country’s assessment of the priorities. In many low income countries, education, workplace, ATs, may well be high if not on the top of the list in the priorities in relation to citizens with disabilities.

This is a way to head. As a result of the eradication of the convention, each country should do -- the vision of the convention. Comply with the treaty. National goals and vision for the future, layout a set of long-term objectives which are practical in nature. Other issues the countries should consider involve the terminology to use to explain these to the public in the countries where this occurs. Agreeing on the means and methods to use for accountability and reporting on the progress,

in compliance with the convention, and undertaking a multidimensional approach to provide access to information and accessible ICTs.

Last slide, please.

Other considerations include physical access to technology, appropriateness of the technology being considered in developing countries particularly, human capacity and the training available to people in those countries. Locally relevant content and services. Integration into people's daily routines. Sociocultural factors. Trust in technology. Economic environment. Legal and regulatory framework. Finally, the political will and public support for each country's work under the convention. Thank you.

(Applause)

>> ERIC VELLEMAN: Thank you very much. The agenda is a bit changed. Before the presentation, let me see, before the presentation was scheduled now, we will first do the IPTV presentation by Mr. Clive Miller. A technical broadcasting and engineering consultant for NR I B. Maybe you can give a very short explanation of your work, and then go on with the presentation.

>> CLIVE MILLER: Thank you. My background is in broadcasting, as an engineer and I've been working on the accessibility issues in digital broadcasting for RNIB in the UK. I've attended the IT focus group on IPTV that has been taking place over the last year and a half. This is a global effort to try to harmonize some of the thinking on IPTV and where it's going and I was there along with some other colleagues, such as Andrea Sachs to promote the issues of accessibility.

So what is IPTV? Briefly, it's IP, and TV. IP stands for international protocol. This is really a data thing. It's sort of universal, because it sits between the data layer, the physical layer of how your information is transported from one place to another, and the actual application that uses the data. So it really doesn't care what the data is or how it's getting to you. And that's what makes it so universal.

So, for instance, it might arrive via a wired network or might arrive on a wireless network or by satellite or by cable. And it really doesn't care and it can move from one form to another quite seamlessly.

And then on top of that, you can add the applications of the Internet and e-mail with multimedia applications, and banking applications, remote access, various applications. Again, the IP really doesn't care what it is.

And TV is television, which you heard. And you heard the number, one and a half billion TV sets in the world, so this is

a very relevant area. So in the world of convergence we are seeing these three coming together, the television world and the communications or ICT world.

So standardization, and you heard a lot about this today, it's about the benefits of standardization and increased interoperability between the equipment and services, because they use the same underlying technology, even if you use different service providers on a variety of devices, that means you can match your favorite piece of equipment with your favorite service providers, just like with the mobile phone. You can have whichever phone you like on whichever network you like.

And there are benefits such as reducing the equipment costs, because at the service providers end and the consumers' end, using the same equipment for a number of different services and consumers reduce the cost. If the same standard is used by the manufacturers, the technology can gain a lot. It means it becomes more reliable and you get more proprietary solutions, because they can put more effort into getting a more harmonized solution.

You can have technical experts and business experts, but also the human factors experts can get involved in the standardization early on.

And accessibility in standardization is important because it provides the earliest opportunity to be considered accessibility in the solutions.

I'll skip on. Much of this is familiar. I want to look at the issues of accessibility in IPTV. This falls into two parts. Accessibility of the media itself. So it's the content that you'll be watching, and this includes closed captioning, audio description, and sign language interpretation, talking subtitles. We will come to these in a bit more detail later.

The other side is the equipment. So the content is there. You can access the content, but how do you physically decide and operate your equipment to get to that content. Consideration of the remote control. The information that is displayed on the screen. And alternative user interfaces. Not everybody can use a remote control or on-scene display, so we have to consider text to speech.

Implementing accessibility. We have heard a lot about universal design and the benefits of that. And where the focus is on providing a single solution. And beyond that, AT, and specific pieces of equipment for the special situations.

Looking at accessibility as a whole. In the whole system, not just thinking about the end-user equipment. Maybe accessibility happens, maybe it doesn't. So if you look at the system as a whole, if you want to provide a service, let's take,

for example, talking subtitles -- subtitles, you can do that in the consumer equipment end, so that every consumer may have to provide text to speech. It may be expensive. Or you can do the text to speech conversion once at the service provider end and do it much better. By considering the system as a whole, you can decide where to implement the accessibility. And again, this is another reason not to just stick it on at a later date and try to adopt the consumer equipment, because maybe it's better to put the accessibility in another part of the system.

The accessibility of IPTV specifically, and this relates to digital television in general, since that TV is new. There are new opportunities to get accessibility into the thinking.

Closed captions have been mentioned. And yet it's bad to hear how few countries are providing closed captions. And to provide sound effects on the screen so that people who are hard-of-hearing or have the sound turned down can still follow a television program. Subtitles, it's different from closed captions. Subtitles are used for language translation. So we will see in this case that the person watching can hear the sound, but just not understand the dialog. And subtitles are not suitable for people who are trying to follow a TV program with hearing difficulties, because they have different requirements, it's important to separate those.

I hope to show a clip of video descriptions so you can see what it's about. It's a service provided for blind and partially sighted people to follow a TV program by having what is happening on the screen described to them. It's called video description in some parts of the world.

And with IPTV there is an exciting opportunity for sign language translation. Traditionally with even digital television, there were problems with offering sign language interpretation. It's very expensive to send the sign language interpretation as a separate video stream and incorporate it into the picture at the consumer end, because it takes up a large amount of broadcast bandwidth, and so it's difficult to argue the case for allocating that bandwidth. But with IPTV, you can actually take the broadcast stream off the satellite and combine it with a signing service that is coming to you via an IP network, combine them in the consumer device. It means that you can have user control over whether they have the signing service and how it's displayed on the screen. Currently, the signing services are already mixed with the video picture, so it means the user has no control over how it's presented.

Finally, clean audio. It's helpful for some people with some hearing. It's just a matter of reducing the background sounds, the sound effects, the music, so that you can hear the dialogue more clearly. And there are ways of achieving this in

the digital arena.

Looking at the equipment itself. Remote control. There is a lot of that going into the ergonomics of remote controls. Better layout of buttons. Improving the text on the remote control. Making it large, with a contrast and I'm pleased to hear about the work being done on defining some of the terms. So where we might be making it easier to use or adding sufficient contrast, we do need the figures that can be tested so that implementation is complying with those figures.

Color combinations can mean that people can use the equipment where they couldn't use it before. It doesn't require any additional hardware resources. All it takes is a bit of thought in the design of the equipment in the first place.

So we have a lot of challenges ahead. And this convention is a great opportunity to say yes, we have got the standards developments over here, but here are the reasons to implement the standards and to push it through into regulation and to legislation.

So I want to give you a taste of audio description. It's an exciting piece of accessibility that is arriving. There has been a lot of work in the UK. Now it's regulated that all broadcasters with a certain proportion of programs actually offer description.

I'll show you a short movie clip from Brave Heart. The first is in the conventional sense. And the second time is the brief audio description. So hopefully you will see a difference.

It's not exciting if you can't see the picture.

(Demonstration)

>> Thank you for indulging me on that demonstration.

(Applause)

>> ERIC VELLEMAN: Thank you, Clive. That's a very nice example of the movie. We just needed that.

Now we have Hiroshi Kawamura, president of the DAISY consortium, presenting DAISY for everyone, the development of accessible multimedia standards.

The floor is yours.

>> HIROSHI KAWAMURA: Thank you. This is all about the development of accessible standards.

We believe that the best way to publish is the Web way. We have a vision. Everybody in the world including People with Disabilities should have equal access to information and knowledge without additional expenses.

We have a mission to develop and promote international standards and technologies which enable equal access to information by all people, including those People with Disabilities and which also benefit the wider community.

Today's session is a worldwide network of publishers and technology companies, which is committed to open source. We host innovation and corroboration. We develop and maintain the international DAISY standards. We develop baseline software to promote the tools that support access to media.

We support and encourage its membership around the world, and we collaborate with disability communities international organizations such as the W3C, ITU, the international federation of library associations, IFLA and the WU, worldwide union to further its work around the world.

We have membership. When we founded it in 1996, there were only six members around the world. But today we have 14 full members, 55 associate members 23 for-profit company friends and eight individual supporters from 38 countries.

These standards support a collection of reading materials that let a reader access to the content in meaningful and useful ways.

These standards are open and based on existing open standards, such as those from the W3C. The standards are evolving. W2.02, which is the most widely adopted accessible technology for reading in history. This is based on SMIL 1.0. Smile WC3 is the standard that stands for synchronized multimedia integration language.

WP3. This is officially called in the United States and in the world ANC I/ISO 39.86, which is quite different from DAISY but the content is exactly the same. That is the content.

This specification is based on SMIL 2790. This is going to be based on SMIL, which is going to incorporate status.

Leading publications provide an enriched reading experience that is completely accessible. The publications are made up of synchronized text in XML or audio or structured text that can be read with synthetic speech. Daily publication can support greater output, and the publications meet both simple and advanced reading needs.

Today the reading needs met by DAISY are categorized in two parts. Super reading needs and advanced reading needs. Simple one includes most books are contained on a simple media: CD, flashcard, etc. And simple button, stop and start. The last point read is retained for multiplebooks. Navigation by headings, this function is very important. Advanced reading needs include bookmarking, Web searching, go-to Page functions, slow up and slow down of audio with no audio distortion, navigation by headings and pages, and optimizing visual presentation, including font size and color contrast.

DAISY users includes those people who are blind or low vision, who are Deaf or hard-of-hearing, who have difficulty to handle printed books, who are with cognitive or intellectual -- wait.

Something happened with my computer. Sorry.

Anyway, it's a high tech risk.

Okay. With cognitive or intellectual disabilities, psychiatric disabilities, who have -- we have a group of psychiatric disabilities, who have been using DAISY very effectively to prepare for the disasters. And later includes people who are in temporary situations that prevent sharing large information, including
Patients, who have an age concern with difficulties, such as Parkinson's disease are users, and who are illiterate, looking for reading materials which can be accessible to them. And who require structured access to all legacy in languages without a written script, meaning indigenous people looking for it, too.

DAISY tools. We have a variety of tools based on the standard. Software players, and we are going to see the great impact of SM I L 3.0 DAISY profile for media players.

So I have some pictures on the screen of the variety of users, and access method for DAISY contents, from audio only to multimedia and Braille reading.

DAISY production tools are also diverse. There are features also in tools. We have production tools available free of charge, as well as commercial production tools. And convergent tools, from some type of text, and we have free not-for-profit production as well as commercial production tools. But our free software tools, which is being developed jointly with Microsoft company is the so-called DAISY transfer, they are from Microsoft Word, which will provide us an option of save as DAISY from within Microsoft world.

And I hope other parts of the tools are for document production and printing, etc., will have such options to save as DAISY.

And an illustration of this save as DAISY is being provided at the exhibition booth outside of this hall.

An audio based production tool is also prepared for long writing scripts writing group. It's free of charge, a software tool, called My studio PC. A commercial version of this is also available.

So we are getting our requirements by a requirements gathering process. The standard is reviewed every two years, and often requirements gathering process is conducted based on the DAISY Web site.

I'd like to show this site. Yes. This is the DAISY Web site. Sorry. The print is very small.

Yes, the requirements gathering page is on this Web site. You can visit www.DAISY.org/Z 3986/requirements/. So then you can review all requirements posted and also you can review the comments and even you can give your views and comments online.

It's an open public process to get requirements from a diversity of communities, including People with Disabilities.

And, for example, the sign language support requirements are posted by Swedish SIT. And I myself gave a comment to support that, for example.

And promoting user participation through requirement gathering is our -- one of our missions. It's very important to have direct input from user groups.

User requirements might have some conflict. Sometimes user requirements conflict each other at least at a glance.

Technology development, to achieve a breakthrough is always required to develop standards with Harmonization.

Development of use cases with full participation of users with disabilities is key to successful standard development.

Research in the real world is very important. Smart 3.0 DAISY profile is designed to meet the requirements of disabled people, including Deaf/blind individuals, because developers were involved in the research project on emergency disaster preparedness which addresses all types of disability groups in the society. Interactions between the use cases and professional developers with cutting edge technology may give us solutions.

Universal design produces AT is a guiding principle. DAISY contents is a set of files based on DAISY stand arz. Users may have access to the same contents, depending on their preference and their environment. A wide range of tools, devices and services may provide users with optimal access to information and knowledge. DAISY global library will increase opportunities to have equal access to information and knowledge with reasonable cost.

International corroboration is the most important working area of the DAISY consortium. The Society for disability focal point was performed by the DAISY consortium and four other projects are being conducted. Workshop on accessible, I GF, in Rio last year, strategy council at the United Nations gate, emergency preparedness for persons with disables and AIDS development in south African countries. Networking, those are the four programs of the DAISY consortium. And you can visit the DAISY activities at the www.D INF.ME.JP Web site.

The DAISY 4 has a diversity of activities which is closely related to the WS I S co-op. Global issues and full access of knowledge is the most important working area of the DAISY consortium right now; including emergency preparedness and AIDS prevention and treatment.

So some of the pictures of the disability caucus in WS I S and DAISY 4, all projects in developing countries, pictures are shown on the screen. And the pictures at the bottom on the

screen say case see training for trainers of autism and low vision. So we combined training in the Philippines to disseminate DAISY technology. Combining autism and low vision at the same time, and it was, I believe, very successful.

In conclusion, development of ICT standards in corroboration with People with Disabilities is crucial to bridge the digital divide. Universal design in combination with ATs is the best logical and practical guidelines to develop accessible ICT products and services with reasonable cost.

Critical issues of the whole community, such as disaster evacuation, AIDS treatment, or pandemics prevention are good subjects of corroborative research by ICT standard working groups and organizations of persons with disabilities to identify the special requirements and the universal design concept.

Thank you very much for your attention.

(Applause)

>> Although you wouldn't get that impression, this session was shorter than planned. And so I'd like to wrap this up. I want to thank all speakers for being here and presenting on their subject in this special session. I came up with a few conclusions that I'll ventilate in the last session. I see there is room for them there. So I won't bother you with them now. So you can all go for dinner. But I thank the speakers here and I welcome to the front here Mr. Probst and Mr. Axel Leblois.

And Mr. Yury Grin as well. Sorry.

>> Okay. This will be the final discussion this morning. I have the quick pleasure to open the 7 year signature of a cooption agreement for development of a toolkit on E accessibility and service needs for persons with disabilities.

This cooperation agreement will be signed between IDT, represented by Mr. Grin, and G3ICT Mr. Axel Leblois. I would like first to give the floor to Mr. Grin, please.

>> YURY GRIN: thank you very much, Mr. Chairman. Know that all of us will try to watch, I'll try to limit myself only to a few words from my point of view.

So for the background of this ceremony, I'd like to start with that it had been decided during the last world communication development conference in the year 2006, that ITU should pay special attention to the People with Disabilities, to their needs of course in our field, in the ICT field. ITU did implement this resolution 56. This was adopted by this world development communication development conference through our activity in study group 1, question 20. Within the framework of this question 20 activity, special events were held last year on this topic in Geneva and Cairo. So two events. Both events,

during both events, participants underscored the need for ITU-T to support member states in raising awareness and capacity building to address ICT needs for People with Disabilities and in meeting the requirements of section 9 of the UN convention on accessibility ICT.
As a follow-up to this request from member states and in the language in resolution 56 on People with Disabilities, it was conceived on the project to support creation of awareness, sharing information on best practices, and capacity building in this area. ITU then approached G3ict to cooperate on this project with them, which has three main things. Including development of on guidelines. This is on question 20, development, the development of cooperation agreement, which I hope we will sign in a few seconds, and implementation of workshops to train policymakers, regulators and others they call users of contents, to be developed under this cooperation agreement. Today, signing of the agreement should be viewed as an initial cooperation effort as more partners are still needed to achieve the first phase of this project, that is the capacity building and support to countries to develop policy, regulations and mainstream disability issues.

So I would like to use this opportunity and invite you to join us in these efforts.

Just a few words regarding the objective of this project for you to understand why we will sign it. First one is to create a global online toolkit to support the development of successful policies and strategies, addressing ICT accessibility and service needs for People with Disabilities.

Second, it's to mainstream disability issues at all levels in application of this disposition of the convention of the rights of People with Disabilities.

Third one, furthermore, the toolkit will serve as a global electronic repository of policies and strategies.

And the last one, share as a platform for sharing experience on best practices addressing disability issues in ICT sector. The toolkit will provide a set of necessary actions to be undertaken at the national levels and will assist development of effective policy frameworks, deresponding to the needs of these principles.

Just the last words, the next step after signing this agreement, of course will be implementation and development of the content. But after this, after, I hope successful development of this toolkit, several original workshops to train the trainers will be undertaken to help with the project and it will be already next year.

Thank you for your attention. Thank you Mr. Chairman.

>> Thank you very much.

(Applause)

>> I give the floor to the other partner.

>> Thank you, Mr. Chairman. We are delighted today to sign this agreement with ITU. And we would like just to emphasize a couple of characteristics of the toolkit process. I said toolkit process, because as you just heard, the toolkit will be a living proposition. Meaning it will be online and always be upgraded and improved hopefully and will we will address whatever feedback we get all the time.

But it's also an important process in that we will conceive the toolkit with input from a number of different constituents, including policymakers themselves. So our hope will be that it's a toolkit for policymakers, by policymakers, who successfully implemented dispositions in their respective jurisdictions. So the foundation of the toolkit is practical, successful. It's not about us working and how you can do it the same way in your own jurisdiction.

So with that in mind I'd like to call on all of you in this room to feel that you are part of the process. Do not hesitate, if you wish to look at any part of the toolkit, give contribution, give input, we welcome all potential cooperation.

So thank you very much for your attention and I think we will now be signing the document.

>> PIERRE-ANDRE PROBST: Thank you very much, Axel.

(Applause)

I think we all worked on this excellent initiative. And as Axel said and I must agree, I think we can probably do all of us something to promote this initiative, to help to be a success, and I think we wish really a good success to this partnership.

And now you can sign the two documents. I hope you have read the small letters on this?

(Laughter)

On the bottom of the contract?

>> Not yet. After.

(Laughter)

(applause)

So thank you very much.

>> It's really time to break now for lunch. So thanks again for this short presentation of the initiative. We will close now this session. I think we are a bit short of time. I can ask the delegates to be back at a quarter past 2. -- 20 past 2. So you have five minutes more. Thank you very much.

(Applause)

(Lunch break taken)

>> JIM TOBIAS: Okay. We're going to begin the third

session.

(Gavel sounding)

(Laughter)

Welcome to the afternoon -- the third session of the day. This is a session on Mobility: Wireless Devices and Phones, Accessibility and Assistive Functionalities. If you can move to the fourth slide.

What we heard this morning, I think, was an excellent introduction to the requirements for designing accessible user interfaces and guaranteeing access to contents. And I think we're all aware, and Axel helped us see statistics regarding the rapid advance in the marketplace of mobile technologies, now the largest platform worldwide for access to information and communications, and it's also the fastest growing.

Another thing that I'm grateful to Axel for pointing out is that as part of the -- of the treaty, there is a provision which is Article 20, which refers to personal mobility, and most people think of personal mobility as wheelchairs and scooters and walkers and like this. But we also can consider mobile ICT as mobility aid in that it doesn't help us move from paint A to point B, but it helps us navigate, it helps us consider why we're going from point A to point B. It helps us communicate during that travel and when we arrive at our destination. It helps us with access to emergency services or anything else that a user with a personal mobility impairment might need. So in fact, we should consider mobile ICT not just as a standard ICT platform but also as a personal mobility aid. Next slide, please.

Wireless ICT is a unique, in some ways, environment for accessibility, and I've already mentioned the fact that it is also ubiquitous. It can be found everywhere, and its availability and its service are extremely flexible and, in fact, low cost in most environments. Because of the rapid dynamics of the market and the technology, it is very diverse in the devices, in the networks that we're able to use, in the types of software that we're able to use. It also comes with a built-in network orientation; that is, it is aware and thinks about and is able to link us to other networks and other services on networks in ways that previous models of technology were not always able to do.

Another unique advantage of wireless devices is that for the most part, they are personal devices. They're not intended to be shared, and so they can be deeply customized and tailored for the use of an individual, whatever that individual's preferences and needs are. So they become a part of us as we carry them throughout the day, and we can -- we can customize them and make

them work in a very familiar way, a way that's friendly to us, and yet a way that is also very sophisticated and offers us a lot of choice.

So how can we redeem the many promises that mobile ICT can offer us? Well, we have three uniquely qualified speakers this afternoon to talk about how we have already redeemed that promise and how we can continue to do so. Our first speaker is from NTT DoCoMo. It's Mr. Yoshinobu Nakamura, who will talk to us about the experiences and success that NTT DoCoMo has had introducing many models of accessible mobile phones in Japan.

>> YOSHINOBU NAKAMURA: I am Yoshinobu Nakamura, and I work for NTT DoCoMo, a mobile operator for Japan, and I am responsible for product, especially for universal design, design handsets for people with disabilities.

Today I would like to talk about four items. One is the trend of Japanese mobile phone market, and after that, our activity about universal design and the fundamental concept around universal design in product permitting. And after that, I will introduce universal design products.

First one is (Indiscernible). And the second one is (Indiscernible) of our handset.

Mobile phone marketing Japan. (Inaudible) -- mobile handset in the market, and our share is approximately 52%. And the mobile phone system, 85.7% of third generation and 14.3% of second generation. So the migration from second generation to third generation has been progressing.

And in Japan, mobile phone carriers procure handsets from manufacturers and sell them to the end users. And at DoCoMo, action based on the fundamental concept of universal design is called DoCoMo's (Indiscernible). And we want to provide easy-to-use mobile handset for anyone, through our products and services. And for mobile handset, DoCoMo works to design product reflecting our customers to bring a mobile phone to match the user's needs.

And here is the concept of universal design in product planning. and DoCoMo wants to provide more user-friendly mobile handsets to as many as possible. And first is usability. As for all of our handsets, we have to make mobile phone functions easier to use and to understand. And second is accessibility. As for (Indiscernible) -- dual-screen, which I will introduce later, we have to pressure accessibility, regardless of age and capacity.

The third one is the interface. If we reach a limit of what we can do with mobile handset itself and due to cost or technology, we have to set interface with systems.

And the last one is adaptation. Using this interface, we can provide dedicated services, and that suits various needs with

customized devices, and I will introduce one of the examples of adaptation later.

For now, I will introduce (Indiscernible). It means easy, comfortable, and fun in Japanese. And as for the series, 11 different models have been launched one after another, and the first was in 1999, and the total sales exceeding 20 million units as of the end of this March.

And this is the (Indiscernible) lineup. And at the left side is simple for voice calls only. And the next is basic for e-mail and Internet browsing in addition to voice calls. And the next one is full, which has a camera and GPS and assistive function incorporated with external equipment.

And then is the premium, which has more added, like mobile wallet and TV and global warming functions. And this was launched just last week.

I will introduce speech-to-speech functions and assistive functions with (Indiscernible) equipment.

The phone has two speech functions, and it contributes to accessibility for visually disabled people. And in response to user needs, our products undergo function Al improvement -- functional improvement model by model, and as a result, text-to-speech function is available for many operations. For example, in standby mode, not only date and time, but also recognition of e-mail and remaining battery power can be (Inaudible). And six different reading speeds can be chosen by the users.

Our next one is assistive function with external equipment. To use this function, the user just needs mobility scanner, and with this book, with picture writing. And firstly, I would like to explain an overview of the technology briefly. User can activate the application without operating buttons using this small scanner here. Which can be mounted on this pen and connected to mobile handset. Like these pictures. Many invisible dots are painted on a paper, and when the user places the pen on a paper, it is sent to the mobile handset, and then the phone will launch appropriate applications, and by using these functions, the mentally retarded and those who have difficulties with buttons can make a call and send out e-mail with ease. And these external devices are sold by Japanese third parties, and the name is Good Mark Corporations.

And I will introduce the (Indiscernible) mobile phone, the 800 IDS. This handset has three typical features. First is touch panel with feedback functions and custom vibration device is mounted below the panel, and when the touch panel is pressed, the mechanism allows the user to (Indiscernible). And secondly, silicone rubber material. We attached silicone rubber at two locations here on the back, and by doing so, operations can be performed with the handset placed on a desk.

And at least, we installed more buttons to adapt to these users.

And this shows the three operation modes. And the three types are as follows: The left side is (Inaudible) mode, and that executes all operations with three buttons, and this is six-key mode with six buttons. And the customers can choose the functions, and this is a ten-key mode, and that displays the buttons of ordinary mobile handset. Because buttons displayed on the touch panel using software, several sizes, shapes, numbers, and colors of buttons can be created. For example, this three-key mode, these large buttons can be used to operate functions of telephone and e-mail and camera. So -- and this mode can be used by users with weak vision and users with decline in vision.

Next feature is scan function, and this function is designed for users with disabilities, and this is the first commercial mobile phone to be equipped with these scan functions. The auto scan function is (Indiscernible) -- time period, and it moves to the destination button and just pushing the button, the command is executed. By buying the switch offered by third party, anyone can use these functions.

Let me summarize my presentation as follows: As a base for anyone and any handset, we pursue the ease of use through products. And furthermore, we continue to direct the universal design handset like (Indiscernible) and dual-screen mobile phone and reflecting the know-how, we can get through and develop the universal design handset to all of the handsets, and the usability of the product become more higher.

And at least, we will promote cooperation with third parties to offer the various external devices to match the various needs.

Okay. That's all of my presentation. Thank you, Chairman, and thank you for your kind attention. (Applause)

>> Thank you, Mr. Nakamura. Our next speaker is Mr. Sean Hayes of Microsoft, who works in Microsoft's incubation lab Accessibility Business Unit, who will talk about accessible mobile technology.

>> SEAN HAYES: Okay. Thank you, Jim. Good afternoon, everybody. Yeah, I'm going to talk a little bit about accessibility in mobile and what that's going to kind of mean to us in the coming years. I've got a range here of different kind of form factors of devices. I've got some pictures of some other ones here on the screen of the kinds of things that we see today as mobile phone technology, and I'm going to be talking a little bit more about that as we go through.

But first off I want to talk a little bit about, you know, what is accessible technology in terms of how we see it at

Microsoft, and it really kind of boils down into three parts. But they're all playing to this main theme, which is that you can adjust technology, the computer software, to meet your specific needs, whether, you know, you have some visual requirements, hearing, dexterity, cognitive, whatever. And the way we do that is either by building options directly into the products so that they take into account these things. For example, on my -- this is my current phone here. I have it set up so that the text is larger so I can read my e-mails on there without having to have a microscope, and then there are other products that we can add into this because we -- Microsoft, we provide a platform in our mobile phones which third parties can add functions to, and so there are a number of assistive technology products that people can add to phones, either as software products or as additional hardware add-ones, such as a Braille keyboard.

And then the third plank to that is this notion of interoperability, and this is a critical thing. It's -- you need to have all these things so that they work together smoothly. Also, at Microsoft, we recognize that accessibility covers a wide spectrum of needs, from on the one hand what you might call sort of recognized severe forms of disability, like total blindness or total deafness, severe mobility problems, that kind of thing. And then there's the sort of gradual change into a sort of more temporary condition, you know, maybe you have a temporary injury, you know, break an arm or a leg or something, or you might get some kind of thing over time. Or it just might be due to some environmental factors, you know, you might be in a very noisy environment on the street or something, or you might go out into very bright sunlight and you can no longer see a screen because of glare.

And then on the far right-hand side, we think in terms of just general customer preferences, you know, so being able to simplify user interface or choose colors to fit your particular requirement. So there's a very wide spectrum. So we're moving away --

(Lost audio momentarily)

-- trying to emphasize to people that these things are there because very often people won't find features that have been in our products for a very long time because they just didn't think they applied to them. People don't like to identify with some of these issues. If you say, you know, do you have difficulty reading in the evenings or during the day, they'll say, oh, yes, well, I do. Then they can find some of these options rather than going to a specific disability center, which we were finding people weren't using.

We commissioned a study through FAAST back in 1993 that

actually looked at how many of our users were likely to benefit from the use of accessibility, and the number that came back was really quite surprising. It was some 57% of computer users are likely to benefit and at some point perform some of the features that we build into our software products. So one in four users having a visual difficulty, one in four having pain or problems with dexterity or in their wrists, one in five having a hearing difficulty. And so this is a very large section of our consumer base, as somebody pointed out, so this is real money to us.

I also want to talk a little bit about what we mean by mobile technology, because you know, we're the snapshot in time at the moment, but I want to think about the sort of larger continuum a little bit. And really, I think about mobility as the ability to -- to do, you know, information tasks, communicate with people regardless of where you are. And that's really come about over the last couple of decades through electronic miniaturization of products, particularly computer products, and then that's going to continue into the foreseeable future. And then, of course, the ubiquity of various communication channels. In particular, recently we've had wi-fi and GSM networks, and we're also seeing things like Bluetooth and buddy area networks, which are devices it talk over a much smaller area.

We are in this progression, though, from a period 30 years ago, when I started out in computers, I was going to make the computer that could do the same things as this that would be the size of a house, but in actual fact, thinking about it, unless you had a military-scale budget, you couldn't buy a computer when I started out that could do all the things that this little device here can do. You know, this can do speech recognition, it can communicate with anybody on the planet, it can talk back to me. So there really wasn't any single device, or if there had been, you would have had to have a special building to put it in.

But we got to this point in time today, and this is basically a general personal computer, has a keyboard and a screen and all those kinds of things. But we're at the limit of miniaturization with this because of its -- you know, because of my form factor, really, the physical size of my fingers to use the keyboard, my ability to see the screen. But we are going to move on continuing to miniaturize products until we get down to sort of nanotechnology, carbon nanotubes, doing computing. We are going to see devices moving into our bodies. They are at the variable stage. You see people with things like this, little Bluetooth headset, and people are wearing these more or less continuously now, so having computing devices around your body is not a particularly strange thing. They're going to get smaller so that that's going to become more and more readily

accepted, and eventually they're going to migrate into the body in terms of we'll have computing devices in our bloodstream, connected to our brains, things like that.

We are only partly along that line. So we have two major lines of mobile products, so this is what we call a sort of PDA, pocket PC type of device. This is the other kind of thing which is called a smartphone. It's more of a handset sort of form factor. And so this is primarily aimed at people who want phone type of functionality. This is more aimed at people who have much more computing type of needs. This tends to be more of a professional's device. This would be something that more of a consumer-oriented sort of device. But they have basically the same platform running on them with some different applications layered over the top of them.

I'll be putting a bunch of these form factors out on the table, if you can actually see them and you want to get your hands on them during the coffee break, if anybody is interested.

So talking about some of the accessibility options we have today, so for example, there are a couple of screen readers out there for these devices. There's a thing called mobile speak, there's another screen reader. There's a screen magnifier, if you need to go beyond the sort of built-in text zoom, and there's a daisy player for these devices. So there's a bunch of stuff there, and of course, we also build in a number of features which is not really what you would call accessibility specifically, but they do have an accessibility function. For example, there's a voice tagging system, so I can just talk to this and make a phone call without having to touch any buttons. It has a vibration mode for reading so I don't have to be able to hear the actual phone make a noise.

And of course, we're moving ahead. There are more things coming up, so this has a camera built in the back and actually in the front as well, so I could set this up, and if I could do signing, I could actually have a video conversation with somebody mediated through this phone and do signing. This has a Bluetooth interface, so I can now actually use this to connect to other devices in my home, smartphones or into products that I come up to in the street. It's getting very common now in Scandinavian countries to use SMS functions, you know, to go to ticket machines, so if my personal phone is accessible to my needs, then I can actually interact with some other devices which may be less accessible. And obviously, these all integrate with Web interfaces now, so rather than having to navigate voice menus, which may be a problem if you can't hear them, you might be able to actually navigate through a Web interface as well instead, and we already heard about the DoCoMo phone which has a tactile touch screen, so things are still

changing.

Those are sort of today's problems, but we need to think about where we're going because the next 30 years aren't going to be like the last 30 years. Computing and mobile technology, they've come a long way and they already make it possible a level of independence that's way more than was possible 20 years ago. But we're still moving ahead very quickly. You know. 20 years, a phone was the size of a house brick, and you know, it was a very rare and expensive item. Today it's a pervasive, low-cost item. 50% of children in the U.S., for example, have a mobile phone. But this has all happened very, very rapidly, 20 years, and we heard this morning, the standard took 20 years in the making, some parts of it. The whole of the mobile phone technology happened in that period, and WCAG 2.0 has been ten years in the making and counting. So you know, ten years ago GSM was really just getting off the ground. The first text message was sent in 1991, I think -- nine 3, actually, the first SMS message. Now there's 1.8 billion text users worldwide, and that's an $80-billion industry. So that's happened in just 15 years. We're at the level now of starting to see what I was talking about earlier, computing devices moving into our body, and since 1984, there have already been cochlear implants to assist deaf people. Over 100,000 people over the last two decades have had such implants. Now, actually, in the last few years, John Middlebrooks at the University of Michigan and the University of California, have come up with a device that bypasses the cochlea completely and goes directly into the nerve system. They have experimenting on animals today, but human trials are coming in the next couple of years. If you like, that's the house brick version of mobile technology, so 10, 15 years out, things are going to look very, very different, and we'll have artificial eyes, artificial ears, speech. There are some prototypes of cameras now that can actually read books for you, read them out loud. They might even be able to do translation into different languages, you know, artificial intelligence. So very, very different.

So there's a bunch of different accessibility standards happening over the next couple of years. I'm not going to go through all of these, but we've heard about some of them, the 508 refresh, which is happening. There's the IEC mandate happening here in the EU. In Japan they're having some stuff, China, and obviously there's the UN mandate. But it's important, then, that we think, because as Gregg made the point earlier, it's not where the ice pack is today, it's where it's going to be when these things come out ten years from now. So the world is going to be a very different place, and we have to

write the standards so that it expresses the needs and the requirements but doesn't get involved too much in the technologies. Because although mandating a particular technology can be a big win, the GSM network is a classic example of that, of how once you get behind a technology standard, it can -- it can really create a marketplace. But it can also be a lock-in. For example, as we were seeing earlier with the -- you know, the media aspects, if you have a technology requirement, say like the U.S. 608 and 708 captioning, that can actually be a technical barrier to stuff moving to the Internet, where you could use a whole bunch of different ways of achieving the same user requirement, but because of, you know, an issue in the marketplace, that's not happening because the same technical standards don't translate.

So you know, standardization is a good thing, and I always joke, standards are great, everyone should have one, but you know, they also -- they can be a problem. So you know, I urge people to meet standards, but we need the right kinds of standards. They need to say the right kinds of things.

And of course, I'd like to say a final word from our founder, Bill Gates. This is a quote from a while back now, but it emphasizes, I think, Microsoft's equipment, and I'm just going to read it out. Our vision is to create innovative technology that is accessible to everyone, will adapt to each person's needs. Accessible technology eliminates barriers for people with disabilities and enables individuals to optimize their abilities and unlock their potential. So that shows that, you know -- our commitment to accessibility. It goes right to the top and permeates through the whole organization at Microsoft.

So that's it for me. Thank you. That's my contact details here. Feel free to get in touch with me if you want to have any more information. Thank you. (Applause)

>> Thank you very much, Sean Hayes. Our final speaker in this session is Professor Clayton Lewis. He is Professor of Computer Science and Scientist in Residence at the Coleman Institute for Cognitive Disabilities at the University of Colorado. Dr. Lewis will talk to us about mobile ICT for people with cognitive disabilities and will include a note on Google's Android platform.

>> SEAN HAYES: Thank you, Mr. Chairman. We've already heard many mentions this morning of the opportunity to support people with cognitive disabilities, and that's going to be the focus of my remarks, looking specifically at the opportunities of mobile technology in that area. Some of these advantages have already been mentioned. Low cost is an advantage for anyone, but especially for people with disabilities, someone might say especially for people with cognitive disabilities. Portability

is also an advantage.

I'd like to mention two more specific features which are emerging very rapidly and already available at least in some technology. So one is the potential to allow people's devices to be managed remotely. So for someone who is able to manage his or her technology completely on their own, it's perhaps not so clear what's -- what the value is here. But if you are a person who needs to work with a caregiver to have one's technology operated -- (lost audio momentarily) -- something with a lot of benefit, and it's particularly benefit in a really key area, which is independence, being able to do things as much as possible on your own, which makes it very important to have it be easy for the support that you need to be delivered to you.

And then a second really class of feature that's of special importance for people with cognitive disabilities has to do with location of services, so current and future technology commonly incorporates global positioning technology in the device, and that makes possible a variety of services. Some of them are safety and security related. Some people with cognitive disabilities, unfortunately, may get lost, for example, using public transportation, if they get on a wrong bus or something of that kind. So there's a lot of interest in using GPS technology to provide a safety alert if it's seen that the device is moving outside what might be a planned area or a planned route.

Another possibility that people are starting to explore is the potential to offer prompting to a user, reminders based on location. Many people with cognitive disabilities are able to carry out a wide range of tasks, but they may have trouble remembering what tasks need to be performed when and under what circumstances, so being able to use location to target reminder information is something that's of potential value.

There are also some challenges and opportunities to do better in the development of the technology that I want to mention. One point which we run into is that you can have technology packaged into a device where the interconnections between parts of the technology have not been fully worked out. So one obstacle we've run into in some of the application development we've been interested in doing is that while you can have a device that's capable of synthesizing sound on the device and that same device is capable of supporting a telephone conversation, it may not be possible to route synthesized sound over the telephone connection. And there are reasons why one would want to do that, especially for people who can't speak, and I'll just note that a good many people with cognitive disabilities also have impairments in other areas and, in fact, difficulty speaking as a pretty common sort of combination that

one sees.

It appears also that in addition to just allowing someone to send synthesized speech over a telephone conversation as part of allowing someone who can't speak to use the telephone, there could also be value in using the same capability to generate, for example, a spoken message, so not carrying on a conversation but providing an additional medium of input where someone who can't speak could send a message that could be heard by someone on the other end.

A bigger area that we're seeing that one can think of as kind of an emergent opportunity here, and while our starting point is looking at this from the point of view of cognitive disabilities, this is an area that I believe has enormous implications really for everyone, and that is that selecting the features on telephone and configuring those features is really objectively much more difficult than it should be.

Telephones have potentially hundreds of features. Anyone who has done market research in this area knows two things. One is that everyone will say they wish their telephone were simpler. The second thing is no one will buy -- or almost no one will buy a supposedly simplified telephone. People are reluctant to not get some feature that they're afraid that they might use. If it was easier to add and configure features to existing telephones, potentially this impasse could be broken. A person could buy a telephone with a simple range of features without any fear that somehow they learn they need some more complex kind of feature. Everyone could benefit for this.

Returning to the specific audience here, it's absolutely critical for this technology to realize its potential for people with cognitive disabilities. If caregivers find it easy to make the changes, perform the setup and the like that's needed to realize the potential of these devices, the typical person who is a caregiver for someone with cognitive disabilities might be a family member, might be someone who is playing a professional role, but it's very unlikely that that person has specifically technical qualifications for this role, and yet today the state of the art is that it requires quite a bit of technical sophistication to set up these devices.

I'll also argue that to allow the developments that we're talking about here, a maximum degree of openness is going to be desirable. It should be possible for people freely to choose the software and features that they want to have available on their phone. For other but related reasons, it should be possible for people to have as much freedom as possible to choose the particular handset that they're going to use, that is to be able to control the physical factors in the design. And there also seems to be a prospect, if things can be made more

open than they are now, to really attract resources across a much wider community, so to actually have useful software contributions in an open source or community source community beyond what a purely commercial model can support. And I believe there's an argument that regulation around the world really should be looking to support this kind of openness.

Here's potentially an example. And actual l, I want o -- actually, I want a little bit of data from the audience. How many people have heard of the Android platform? Okay. A good many. How many have heard of the Google Phone? Hmm, maybe roughly the same number. There is no such thing as the Google

Phone. Android is what the buzz and rumors about the Google Phone really represents. Android is a platform developed by the group whose web page we're seeing here, the Open Handset Alliance. This is led by Google, but it has roughly 40 partners in it. And the aim is to create just such an open phone platform as I was just describing.

At the moment, this exists in the form of an emulator, so any of you who are interested in this can go on-line, and you can download not only the entire software development kit for this free, but as part of that, you get quite a capable emulator that allows you to do software for this device, though it doesn't yet exist.

My students and I have just completed a round of project work in this current semester in the U.S. where the students have developed, as you see on this slide, a wide range of applications using the Android platform to provide services of various kinds for people with cognitive disabilities. I'll mention just one example, actually. The third one there on the list because this is a pretty simple and concrete example but illustrates some of the benefit that we're talking about more broadly here. Aphasia, as many of you will know, is a language disorder. It's mainly associated with stroke, so it occurs mainly, though not exclusively, in older people. And it can affect any aspect, really, of language performance. But one aspect that can commonly be affected is your ability, really, to come up with names for things.

So I see this and I know that this is, let's say, a PDA, but I can't say, I can't come up with that name PDA.

Well, it's been found useful for therapists working with this community of people to be able to give them practice in naming, and such facilities exist, but today they are restricted to therapists' offices, so you have to go to a therapist facility to access special software, and as a result, you have really only limited ability to practice naming.

Well, one of the projects here developed with my colleague, Gail Ramsberger, who is an aphasiologist, takes the software and moves it on to the platform so when a hardware is available, a person can perform this ability to do this naming practice wherever they are, when they have a spare moment to do it. This also means that this practice can be managed remotely by the therapist. So the therapist can get reports of what the results of practice have been and the therapist can make changes to the practice as might be therapeutically necessary. So for example, if the results show that the user has gotten, within a period of a week, let's say, adequate practice with one set of terms, then a new set of terms for practice can be remotely added to the device. So that's back to this theme of increasing

independence.
The person with aphasia doesn't need to go physically back to the physician or therapist office, but this can all be handled remotely. This is a very attractive possibility.

Same with the Android, in closing, we are still seeing these challenges I mentioned before, some lack of flexibility in the architecture of the device for how information can be routed between different components of the technology, and the setup and configuration of these devices. The Android device so far remains more difficult than we would like. The fact that Android is an open source project creates some grounds for optimism that improvements can be made in these areas if the community puts the energy and organization in to make it possible. Thank you.

(Applause)

>> Thank you very much, Clayton Lewis. Thank you all, and I'm very happy that we've been able to restore 14 minutes back to the organizers. I'm not going to tax us any of that except to say that I'm very grateful to these presenters who I think did a marvelous job of talking about not only the abstract opportunities in the wireless ICT but some very practical experiences and projects that are currently under way. So thank you all, again, very much.

(Applause)

>> CHIARA GIOVANNINI: Hello, everyone. Welcome to session number 4. We are going to discuss now product development methodologies. I would like to introduce myself. My name is Chiara Giovannini. I work for ANEC. This is a organization representing consumers. We are going to deal with a particular standard, standard dealing with product methodologies development. I think it's a very interesting subject because, of course, if universal design or design for principles are implementing since the beginning of the inception of the product or the service, the end result should be accessible as well, and this is what we expect as consumers.

I would like to leave the floor now to the first presentation, and the first presentation is from Gunnar Hellstrom. He is going to present us the work of ITU-T SG 16 on accessibility guidelines, and Gunnar, the floor is yours.

>> GUNNAR HELLSTROM: Thank you. I will talk about what we have done in Study Group 16.

(Lost audio momentarily)

-- produced that have wider applicability. We are right now seeing the big bang of communication development when we develop the NGN, the Next Generation Network. It redefines communication. It will evolve in a new shape very soon, and that is a unique opportunity to include accessibility from the

beginning in new designs.

ITU study group 16, the multimedia accessibility question saw this, and we have contributed with some essential components for the working procedures of the standardization groups to make sure that NDN gets accessible. And there is an urgent need for effective takeup of these working procedures among mainstream standardizers. We cannot continue to have just accessibility groups doing their own work and the mainstream standardizers ignoring it. This is the chance.

So what is accessibility for us, and what have we done in this accessibility group? The (Indiscernible) is to provide multiple modes and media for performing and for controlling communication action. That's why it fits so well to do this accessibility in the multimedia group. And the task of the accessibility group has been to communicate this message within the study group and within ITU and also contribute to accessible solutions in the multimedia world with more practical things.

Now we have got another group in ITU. It's a joint coordination action for human factors and accessibility, overall umbrella group who can carry the documents and whatever out to all study groups. So now we have two groups acting on this.

Now, why do we need this checklist that we have been producing? We see that mainstream standardizers, they are so focused on their main tasks that maybe they are (Indiscernible) -- maybe don't have a clue on that has accessibility features that he should take care of in his design, but accessibility touches everything all the way through the networks, so they're out to designers, the communication architects all need to know a little about accessibility, but they don't read our thick accessibility guidelines. We need something smaller and more consumable for them. And the time to get their attention is so short before they go out again. So we need a very condensed accessibility checklist for these mainstream standardizers, to catch them, to make them understand they have accessibility issues, to make them put in the accessibility features that are needed.

So what we did, we produced on request from the NGN group, in fact, this little document, a five-page accessibility checklist, which would have the basic three steps of accessibility that we all know, but first, in the original product, you should serve the widest range of capabilities. Next thing is to have setable options so that you can expand the usability. And third thing is to have standardized external interfaces so you can (Indiscernible) assistive technology if you really need.

Then it talks about the use of this checklist and then goes into specific areas for the standardizers to check if the control of devices, if that's valid, if they have

(Indiscernible) -- for enough media and remotes. In the country world services the same. The media transport, are they transporting enough media for enough quality for all? The media entry by the user. Do you capture well enough for sign language, for example? Media presentation to the user at the other end, when -- is that enough? Are all media included? Are all media included with qualities required? Then invocational media translating functions, is that included in a quality way so those who need relay services get well served?

Communication world is getting complicated. We need user profiles. Does the user profile handling involve accessibility features? And then you need to record what you have done with the checklist from time to time. And hopefully the standardizers get interested and can move on to further reading that is also included in some of the references further in there.

A brief example is about media transport, saying that media -- media transport properties should allow presentation of video with good quality for sign language and lip reading and a reference to a document about that. And text transport properties should make it possible to present text with good timing characteristics so that users do not experience excessive delays. So this is what is a couple of clauses from that document. And the standardizer who read them should think, ah, have I really done the quality enough for signing? And by reading it, they should also extend their products to enable, for example, total conversation transport with real-time text, video, and voice rather than continuing doing voice telephony. So this could be the future telephony with all media in place and accessible assistive technology possible to attach.

Another simple example from the checklist is the media presentation to the user. Describe methods for presentation of alternative media so that presentation of accessible media can be achieved. For example, in IPTV designer would read this and understand that there need to be subtitles and captions, there would need to be voice readout, there would need to be audio descriptions, there would need to be supplemental media information. So that the future IPTV gets accessible.

So now we have this little document, and the intention is that anybody working with standards, the owner of the work item should go through the checklist at various times and check that it's followed, especially when you start a work item, you should check it. And get reminders and expand the scope of the work to cover accessibility. And also get interested in accessibility and read the background materials. And, of course, take action. Create the communication world for all while they are developing this, what comes out from the big bang.

We have also created another background material document. It's called F-19, the Accessibility Guideline. It's a more traditional accessibility document with a lot of details about user SBE user interface and things like that, but it is communication oriented. It's oriented around communication tasks, so it was needed. We saw that the ISO Guide 71, which is a master for all these kinds of guidelines, is too general and too little focused on communication. So this is kind of Guide 71 for the communication side. So it has details about user interfaces, communication procedures, communication services, and so on. So it can be seen as the counterpart for all these ISO standards that we saw -- heard about this morning from ITU.

A very important requirement that we shall never forget is interoperability. Why do we do communication? It is to enable communication from people to people regardless of what they have for communication features. So that's the most essential communication requirement. The picture is from an emergency service trial between sign language user (Indiscernible) -- equipped with fixed network communication. It really requires interoperability between them, and there was also an interpreter between in that situation.

So by these two documents and all our other accessibility activities, we hope to contribute to a better communication future. And I hope that you will include these documents in your working procedures when you contribute to communication for all future. Thanks.

(Applause)

>> CHIARA GIOVANNINI: Thank you, Gunnar. A condensed way to help standardizer in taking the needs of people with disabilities into account, looks quite interesting and promising. I would like now to leave the floor to Roman Longoria, who is working for Computer Associates. He is the Vice President of User Experience, and he is going to give us the industry point of view on product development methodologies and how to structure the development of process in order to take into account accessibility requirements.

>> ROMAN LONGORIA: Thank you very much. Quick show of hands. I was trying to get a better feel for the audience, and I can tailor my quick discussion, and I promise to keep this on time. How many of you -- wake you up here -- how many of you actually involve directly with development processes? Oh, great. And how many of you who aren't interface with people who can affect change in development processes? How many of you actually work with people who develop software? Okay.

The reason I think this is important is because obviously, all the standards that are being written here -- second slide, please -- really only matter if they make it -- if they make

themselves, you know, into a software that people (Inaudible).

My point of view -- and I'll try to tailor the discussion -- is how -- how I framed an argument and a business justification at CA to help evolve our development processes to better take into account global accessibility criteria and basically how to go from a company to build an accessibility program from scratch and to integrate it with an existing and evolving process.

For those of you who don't know, I get a lot of questions, typically people ask me who I work for. We are a prework software company. And I don't say this -- I bring this up for one reason is I kind of want to dispel immediately that the recommendations that I'll be putting forth aren't really that expensive and aren't really proportional to the size of our company. And I'll go into specifics later.

Next slide. But basically I wanted to kind of talk a little bit about why we care as a company, and I think this is important because for those of you who are working as consultants or trying to create a business case for your company in terms of why this is important, I think it's important to kind of think -- to step away from the standards you're writing and think a little (lost audio momentarily) -- your customers (Inaudible).

So in the context of the U.S., obviously, the U.S. government is the largest buyer of software in the world. They spend a lot of money. And most governments who fall under particular procurement regulations do have, you know, some sort of accessibility criteria that they need to adhere to. One thing that's very important in couching your argument towards why software needs to be compliant is to understand that, at least in the U.S., 508 is a procurement argument. Right? So the government cannot purchase software unless it meets regulations, the criteria. So that means there's a lot of money on the table that you're not going to be able to have access to unless you actually implement software that meets their criteria, and I think, number one, getting that point across is very, very important in building your business justification. Because if you find yourself having to really argue with your development managers or development community as to why is accessibility important, you probably already lost the battle.

This is an easy sell if you position it right, and I'll be talking a little bit in a few minutes about some myths that you can overcome. But main thing really is -- and you know, increased revenue and reducing risk. Now, a lot of us obviously -- not to preach to the choir -- want to do it because of the intrinsic motivation, it's the right thing to do, and that's important. But the point here is that we want to start building, shipping, you know, more accessible software. And you

have to do it within the context of a business acumen, the pragmatics of running software.

Next slide, please. Thank you. So I created the accessibility program at CA with some, you know, fundamental criteria. But I did those -- and you can read our basic tenets. I basically wanted to institutionalize accessibility, and to do this, have you to define it. Have you to define what accessibility means because the problem with lot of them is they're nebulous, very gray, very hard to interpret as an individual developer, and that's the first thing you need to overcome if you want to build software that is accessible.

Now, if you are dealing with small shops or you're running your own shop, you've got one or two products, it's much less of an issue because the key is -- that's really going to be driving us as a large-scale business objective is consistency and reuse, all the critical things that you need to take into account when you're shipping dozens or even, in our case, hundreds of products.

Now, most of the larger companies, IBM, HP, Oracle, SAP, have well-established products, but if you're an emerging company or if you're working with one or if you want to grow, it's certainly something you need to take into consideration.

Next slide, please. Just real quickly, I want to, you know, give credit to Mike Paciello and his organization. I hired him to help get us off the road, and they worked with us pretty exclusively. I talked earlier about we are a very large company, but I wanted to talk a little bit now about how relatively, you know, on the cheap we've been able to do this. Next slide.

And I'll get into that a little bit -- in a little bit. I think the first thing that you can do to become successful in building software is counter the arguments that you're going to be faced with. So you walk into a business meeting with developers or business managers, and the first thing that they think is that, well, first of all, they don't know what accessibility compliance is, so you have to define it for them, but you have to define it in a way that is actually implementable, that is meaningful to them, meaning that if a developer goes back to his or her desk, they need to be able to start writing software that meets the guidelines, so you have to create very specific criteria for success in order to be successful on -- you know, on the grand scheme.

So there are a lot of myths that you have to overcome. One, the first one that you're going to hear is that it's too expensive. And relatively speaking, you know, in the grand scheme of how much it costs to build software from engineering to QA to marketing to shipping, resaling, partner costs, the

incremental costs for actually creating an accessibility program and creating software that is accessible is negligible. You know, I've captured costs of how much it takes to actually go through an entire development cycle, and we're talking a fraction of a percentage point in terms of incremental cost. Certainly, when you look at the billions of dollars that are on the table in terms of what your customers are buying, it's inconsequential. So that's a good way to talk about that myth.

Achieving compliance is difficult. Well, it actually is not very difficult because when you operationalize The criteria that you'll find in 508 or WAI, which you will have to operationalize yourself because, you know, the actual criteria, like I said, are very nebulous. So if you operationalize them, it's actually quite simple. In the grand scheme of developer software, doing UI coding is on the easy side. You know, it's not like the more complex kernel coding. So it's not rocket science, as we say.

To follow best practice, you know, the industry standards, is relatively straightforward. So there is some cost up front. People say, we need some special skills, we need to go out and hire experts. Well, they do need training. It is required. You do have to know the best practices. But the training is relatively inexpensive compared to other types of developer training. And once, you know, you have mastered that, again, all the cost is up front.

Another myth is that, okay, we can patch, we can duct tape accessibility on, as I typically say, at the end of the cycle. And the fact is it's not true, as many of you already know. So being able to talk to your organizations about the duplicative costs in development by having to reengineer your software at the end of the cycle is a good way to convince them to institute processes at the beginning. So again, accessibility is no longer nice to have. We're seeing around the world, you know, public sector mandating this. At first we just had to have a VPAT, which is a certification document, to say -- to compete for a contract. Didn't say that your contract had to be compliant with 508, but we had to certify that we actually tested it. And this has been really the case in the U.S. federal government for about five or six years. Now we're seeing less and less dispensations from that, meaning that we're actually required to produce compliant software.

Next slide, please. So you can also, you know, couch all of this in terms of return on investment. You have to convince your customers, your management, your development organizations that the costs that they put into developing accessible software will be gained back by -- you know, by some ROI model. Standards are great, working globally is great, but you have to understand the -- the pragmatics of running a software business.

I mean, it's very simple. You want to reduce costs and increase profit, increase revenue. I mean, that's how you run a business, very -- you know, my simple view of it. And every time you introduce a cost to development, you're going to get some pushback. So if you want to make the argument, you have to couch it in terms of what -- I always say you have to be multilingual when you work in the software industry. You have to speak engineer, you have to speak psychologist, the human factor, you have to speak, you know, executive. You have to be able to talk to the people who have the check and explain to them that the incremental cost or the perceived cost is actually going to be gained back through ROI.

Cost savings is a real big one. You know, couching your argument in terms of if we build the right process, it is actually cost-effective, and you have to actually go out and do the effort of measuring that. By lowering development cost, by creating the right types of standards, the right types of internal, you know, reuse technology, you know, you can measurably demonstrate that it is cheaper to build software. And any type of process will help eliminate duplicative or mutually exclusive efforts. But it's a good way to actually demonstrate that you are building software more cheaply.

And then you have the positive, the return in terms of marketing, market share, and revenues, showing that your customers and going out and talking to your customers and saying -- asking if it really is a requirement and having them say yes, it is a requirement. If you want our business, you have to meet these goals. Getting that information and presenting it to your management in a way that they understand will do more good for you in terms of actually getting software built to meet these requirements than any type of, you know, moralistic argument that you might provide. People want -- companies want to be ISO compliant, but more than that, they want to make money. So it's a very good way to -- to couch that.

Next slide, please. My arrows have moved. Here's just a quick reference for you. It's in the slides, and I won't get more detailed, but it shows you a very (Inaudible) -- development process. You have different versions of the process, and if you don't -- if you work with an organization that doesn't really have this kind of process, again, you can reference this later.

But the main thing I wanted to talk about, really, is -- next slide, please -- is going through each stage of the process -- and refer to these slides later -- and taking a look at where you are and asking yourself these questions in preparing yourself for, you know, for the different stages that you'll

have, from figuring out where you are in terms of skills and what you need to actually do to produce it.

There's some reference -- next slide, please. There's some references. One more. Thank you. In terms of the types of training that we've provided, you know, it's very important to get very specific in terms of how you're going to train your developers and your sales force, how to code, how to design, and then how to talk to your customers about what you've done.

Next slide. So all of this, obviously, is in the slides. And I also want to let you all know that I am more than happy to discuss this, as our 15 minutes is up, one on one after, and I -- you know, on behalf of CA, I would extend my thank you for having me come and talk, and I very much look forward to working with you in the future. This is a very important issue to me personally and for our company, and I think together we can be very successful.

(Applause)

>> CHIARA GIOVANNINI: Thank you very much, and thank you for understanding the time issue as well. And I found your demystification exercise extremely instructive as well. So thank you very much for that. I would like now to leave the floor to Sean McCurtain. He is working at ISO. He is head of conformity assessment, an he is going to talk to us about one of the most known quality management standards, ISO 9000, and its possible links with accessibility requirements.

>> SEAN McCURTAIN: Good afternoon, everybody, and thank you very much for this opportunity. I would like to give you an overview of what I would like to present today. I would like to tell you where we are in ISO in terms of accessibility issues at a general level and to go into some detail there with regards to that. Then I would like to look at ISO 9000 as a family of standards and focus in on 9001 and what we can do with 9001 with regards to accessibility issues and then give some conclusions with regards to that.

Before I start, I'd just like to give you an indication of how ISO operates and to what extent we operate. There are basically, as you are probably aware, three main standardizing bodies. It's ISO, IEC, and ITU. We collaborate on an awful lot of standardizing issues and standards and specifically in the area of conformity assessment, which is the area that ISO 9000 falls into. We collaborate quite significantly with IEC, and in fact, all our documents are joint documents. They're ISO/IEC documents.

To give you an overview of ISO and the extent of work that we do -- and if this is familiar to some of you, I apologize, but I think it's worthwhile going.

(Lost audio momentarily)

-- when one talks about that, the development of the standard itself, but it's the regular review, the systematic review of those standards and the maintenance of those standards that has to continue.

We're currently producing plus or minus 100 standards per month, and that includes not just new standards, but it also includes the review, the maintenance process with regards to it. We've got approximately 155 staff at the Center of Secretariat, but most of the technical work is done by technical committees that you're familiar with, and these are basically chaired or convened, and they have secretaries from our member bodies, and we've got 157 member bodies, so the actual technical work is more or less farmed out to our member bodies with regards to that.

We've got currently over 200 active technical committees, and the Central Secretariat is responsible for coordinating, managing those, and showing they fulfill their obligations. I know there's been some discussion in terms of how long it takes a standard to be developed from scratch, and if you look at the process at ISO, we are maintaining a 36-month period generally from beginning to end with regards to the development of standards. There are certain areas where we do go beyond that. And we've got approximately 50,000 experts participating in those committees. So it's a fairly sick range with regards to that.

If we look at what ISO has done to date with regards to accessibility, we've jointly agreed with IEC two main documents, and the first is the policy statement, and this policy statement came as a result of our consumer committee. It has been approved by Council, and it is well documented, and it was approved in 2000. And it's basically a policy statement on standardization for older persons and persons with disabilities.

And then we've got another document which you have heard, and I've heard criticism of it, and that's ISO/IEC Guide 71, and I want to go into both of these documents in a little bit of detail before I address ISO 9000.

If we look at the ISO/IEC Policy Statement, it's basically ISO and IEC recognizing that it is important to improve accessibility and standards and standardization, and I think that's very important from an organization's point of view. It has come up with three policy recommendations, and these recommendations are valid today. The first is promotion of universal design and accessible design, and with regards to that, the main focus of that particular recommendation is to increase awareness and to provide information to standards developers, and that is a critical aspect, is giving them the tools to be able to incorporate and address the accessibility

issues.

It's also to coordinate between standards committees and to ensure that they've got the information and that they are coordinated in their approach to accessibility issues. And then it's, of course, to increase availability of standards.

If we look at policy recommendation number 2, it's representation of older persons and persons with disabilities in the standardization work. And that also is a critical aspect, is to facilitate the participation of people in the actual committee so that they can give firsthand their issues, their areas of importance with regards to that, and to make sure that they can participate. It's also to provide those participants with the relevant training and guidance with regards to standardization and how they can participate and make the most of that participation in technical committees and so that the end result is a good result.

And then links between research programs and standardization is basically coordinating and sharing of information so that can be distributed and distributed fairly quickly. Now to our famous ISO/IEC Guide 71. And it is a general guide, and it is meant to be a general guide, but if you look in terms -- inside of that guide, you will find that it's very clear and it says that should there be a need for more sector or problem-specific guidance, that this is an avenue that can be taken, so I think we've got to be able to get around and to start using more effectively Guide 71 and what it provides with regards to that.

It's basically a guidance to standards writers, an these are the people who are setting the scene on how to take into account the needs of older people and people with disabilities. It also outlines a process whereby the needs of people, older people and people with disabilities, can be taken into consideration in standards development. And it provides a table that allows developers to relate relevant clauses of the standard that should be considered to ensure abilities are addressed. The critical thing here is it's product focused, unlike ISO 9000, which is a management system document.

Now onto ISO 9000 and accessibility and how we can incorporate that with regards to it. ISO 9000 is a family of standards, so it's a whole series of standards, and ISO 9001 is a quality management system. So we're looking at something that is system focused and not product focused. As such, ISO 9001 or any incorporation or development of that should not include specification of requirements for products. It just would not fit with the process.

The main focus of ISO 9001 is to ensure that the customer expectations are met by the organization, whether that's in terms of the product, service, or process. Output matters in

terms of ISO 9001. So how can we look at this in terms of accessibility? I think the other issue we've got to bear in mind is it's a generic document. It was intended to be used by all sorts of organizations with all sorts of numbers of employees and addressing services, products, et cetera. It is -- does not directly address accessibility issues, but that does not mean that we cannot look at it to see how we can incorporate it into the document.

If we look at 9001, because it is such a generic document, certain sectors -- and when I talk about sectors, I refer to industry sectors or product sectors -- have felt a need that they would like a roadmap that gives them specific guidance on how to apply it within their industry. And sometimes that is very valuable with regards to it, and we've got to look later to see whether that's a viable solution for us. But it is basically where there is a need to interpret the requirements, each and every requirement in ISO 9000 specific to that industry.

Certain examples of that are ISO/IEC 20,000 information technology, and that's a specific application document. We've got 90,003, which is software engineering, and we've got 13485, which is medical devices. We've also got TL. We have to be very careful when we do a sector or an application document for ISO 9000 that we're not giving rise to a proliferation of interpretations. There has to be a good need for a sector document within this regard. We are guided within ISO and IEC by our rule book, which is the directives. And that basically tells us when or when not it is appropriate to even think about developing a sector or an application for ISO 9000. In addition to that, TC (Inaudible) -- which is the technical committee which is responsibility for ISO 9001 have also developed a guidance document related to application documents.

The main aim here is before we go in or even contemplate looking at developing a sector-specific document, there needs to be a need. And that need needs to address not just one or two requirements but all of the requirements within ISO 9000. We've got to make sure that we do not take away from the integrity of the generic document and its use and its value because it is so applicable and that we do not take away from the consistency in terms of how it is implemented by various different organizations and the harmonization that it gives. So the less sector-specific organizations or documents, the more harmonious the output with regards to ISO 9000 is.

Any sector-specific or application development of ISO 9000 has to go through this process. It has to be measured against these criteria before we could move on it. And a sector is an

industry sector, so it's slightly different to the issue of accessibility. So how can we give accessibility some prominence in terms of ISO 9000 and in terms of ISO 9000 as the generic document? And the first way is looking at the quality policy, that an organization that implements ISO 9000 has to have a quality policy, and they have to have objectives. And they have to be pushed down throughout the organization. So that's one opportunity.

The second opportunity is output matters. And when I refer to that, I say that ISO 9000 should ensure that the product that our service that the organization develops at the end of today meets customer requirements, our regulatory requirements. So there is an opportunity there to give emphasis to the accessibility issues within the organization.

If you look at the quality policy, they have to set objectives. These objectives have to be known within the organization. They have to be implemented, and in terms of demonstrating that you meet ISO 9000, you've got to be able to measure your achievement of those objectives. So senior management can address accessibility issues here that will have to be filtered down and measured throughout the organization. And this is applicable in the generic ISO 9000 document, so any organization, any side can address it from that point of view.

If we then look at the customer issues, in other words, specifying your product requirements, there are three requirements or three sections more or less within ISO 9000 that allows us to address it there, and that's 5.2, which is customer focus, and 7.21 and 7.23, and also to a certain degree 8.21.

If we look at customer focus, we can see here that top management has to ensure that the customer requirements are determined and that they are met. So if the customer is educated to express that they need accessibility issues addressed in terms of what they want from the organization, the organization has no choice but to accept it and build it into their ISO 9000 quality management system with regards to that.

If you look at 7.21B, which is actually quite an important one, even those requirements that are not specified by the customer but which the organization knows the product may be used, the organization has a responsibility to address those -- those requirements in terms of producing the product and making sure it meets the requirements.

Customer communication, and that's getting feedback so organizations can fete feedback from their -- can get feedback from their customers in terms of accessibility issues. Has it been looked at successfully? Has it been addressed successfully with regards to it?

So there are two basic ways -- without going into developing

an application document or a sector-specific document, there are two ways that it can be addressed and made part, an intrinsic part of the product management system, the most important being through the management processes in terms of policy and objectives of the organization. However, we must not forget Guide 71. We've got the process side or the management side in ISO 9000, but it needs to be fortified and backed up by the product-focused process. So we bring those two together. And as I said before, the criticism of 71 is it's too general. There are opportunities for other guidance for product-specific areas.

So my conclusions, it should be addressed at the product, and the earlier the better in terms of standards and standardization and developing standards and standards development. And it can and should become an integrated part of the overall quality management system of the organization, and ISO 9001, as it currently stands, allows that to take place.

How best organizations achieve this and what combinations they use in terms of doing that is very much up to them, but many of the terms have been provided in terms of that process. Thank you very much.

(Applause)

>> CHIARA GIOVANNINI: Thank you very much for explaining so well about ISO 9000 and also reminding us about Guide 71 from the -- coming from your view may be more familiar with (lost audio momentarily) -- remember that ANEC was a (lost audio) -- related to Guide 71 and then eventually Guide 6, and now what we are waiting for is just implementation. So thank you very much. I would like to ask you to join me in thanking our panelists today for their very good work today.

(Applause)

>> I'm sorry. I'm taking the floor just to say that now we have a coffee break. As we are more or less on schedule, I would say 15 minutes as planned, please, so go back at 4:20. Thank you.

(Break taken.)

(Gavel sounding)

>> Two minutes.

(Gavel sounding)

>> KEVIN CAREY: Good afternoon. Gather strength for the last plenary before we start drawing conclusions. My name's Kevin Carey. I am the chairman of an organization called

HumanITy, which Jim said sounded like the most intimidating e-mail address in the world. I'm not going to introduce the speakers because I've told them that their ego slots will be inside their 15-minute presentations. So we'll begin immediately with Cynthia Waddell.

>> CYNTHIA WADDELL: Good afternoon. As she dashes to the computer side. I am Cynthia Waddell. I am the executive director and the law policy and technology consultant for the International Center for Disability Resources on the Internet.

My topic today is Government Support of Accessibility Standards Best Practices. My brief discussion today addresses three topics. First, the government role in carrying out ICT obligation of the Convention on Rights of Persons with Disabilities. Next, best practices for government in supporting accessibility standards. And finally, resources for government. So let's begin.

As Axel so well described in his presentation earlier this morning, the Convention sets forth significant ICT obligation that must be addressed by government. Because of the time limitations of this presentation, I've selected only a few of these ICT obligations for discussion, even though all of them deserve to be addressed, understanding some of the ICT obligations sets the discussion of government best practices in the appropriate context.

As we turn to the Convention provisions, I'd like to highlight four ICT general obligations in Article 4: Universal design, assistive technologies, accessibility information, and training on disability rights. The first ICT obligation -- general obligation calls for government to promote universal design in the development of standards and guidelines. The Convention defined universal design as the design of products, environments, programs, and services to be usable by all people to the greatest extent possible without the need for adaptation or specialized design.

Next, assistive technologies. Government is to undertake or promote research, development, availability, and affordability --

>> Your slides just went through the entire sequence.

>> CYNTHIA WADDELL: My what?

>> Your slides.

>> CYNTHIA WADDELL: You know what? I'm going to fast that I haven't advanced my slides. Here we go. That's what my notebook does. Okay. We're on the right page now. I'm okay. Thank you. Just press this button? All right. Okay.

My notebook is doing things. All right. Okay. Next, assistive technologies. Government is to undertake or promote research, development, availability, and affordability of

assistive technologies. And another general ICT obligation of the Convention addresses accessible information. Government shall provide accessible information about new technologies and support services. And finally, government has a general ICT obligation to promote training on disability rights as outlined in the Convention.

The Convention -- there we are. The Convention also has an article devoted exclusively to ICT accessibility. In particular, we see that Article 9 provides that states or governments must address equal access to information, electronic and communication technology, and emergency services. Article 9 also mandates that government is to develop, promulgate, and monitor the implementation of accessibility standards and guidelines for facilities and services.

In addition, government role in supporting ICT accessibility is to ensure accessibility of private entity facilities and services that are open to the public, to provide training on accessibility issues for stakeholders, promote accessible design of new ICTs, including the Internet, and promote accessibility at the early state of ICT product development.

Finally, I would like to highlight two additional ICT obligations especially relevant to participants here today. First in the area of statistical and data collection, Article 31 requires government to collect statistical and research data to assess implementation and to identify barriers and this data itself is to be accessible to persons with disabilities. This means, for example, that if the information is in a software or Web-based database that it can be accessed by assistive computer technology, or if on the Web, it needs to meet industry standards for accessible Web design. In this way, the data itself is accessible.

Second, the data cooperation in that area of Article 32 requires government to facilitate research and address and access to scientific and technical knowledge, provide technical and economic assistance, and to enable technology transfer.

With these selected ICT obligations in mind, let us take a look at some examples of government best practices. One very important role government can play in supporting accessibility standards is to promote the mainstreaming of disability issues in the development of standards. Mainstreaming is a critical approach that enables policies, strategies, and design to take the needs of persons with disabilities into account in all stages of policy and standards development. The Convention references mainstreaming of disability issues in the preamble. Quote, as an integral part of relevant strategies for sustainable development, end of quote.

A second important role government can play is to support

stakeholder engagement. It is my experience that one key success factor for mainstreaming is the engagement of persons with disabilities that represent cross-disability issues to inform all policy and standard sectors. By actively participating in the development and implementation of policies and strategies for accessible ICT, persons with disabilities can contribute to the determination of the most relevant and appropriate strategies for successful policies and design.

So what does this really mean? In order to engage the spectrum across disability participation, attention must be paid to the provision of effective communication, accessible information, accessible web sites and facilities. For example, meeting documents should be made available in alternate formats so that persons with visual disabilities can access the content. Meeting rooms and restrooms should be accessible for persons with mobility disabilities. And sign language interpreters, real-time captioning, assistive listening devices, and text telephones, as appropriate, should be available upon request for people with hearing disabilities. And if meetings are held on-line, accessible teleconferencing also is a requirement so that everyone can participate.

In addition to mainstreaming and stakeholder engagement, a third important role government can play and one I point to as a best practice is government can legislate the procurement -- (lost audio momentarily) -- by procuring accessible ICT government supports the business investment and the product development cycle, and government supports the development of accessibility standards. However, it is not simply enough for government to announce, we will only buy accessible products and services. Standards are needed to inform the procurement process on the technical requirements for accessible design. Agreement must be reached on these standards.

So let's take a look at some examples of government best practices in procuring accessible ICT. Taking a look at Canada, successful procurement toolkit for Canada's Web-based application that delivers accessibility guidelines and standards for use in the procurement practice process of mainstream ICT products developed by the assistive devices industry. It was launched in 2000. It can be used by (Inaudible) -- to inform public procurers of their product requirements. It can also be used to add accessibility clauses to a purchasing document, and vendors can be informed as to what standards apply to their products for planning and development purposes. Vendors can also compare the conformance level of their products to government or national standards.

The Canadian procurement tool applies to various accessibility standards, including the U.S. Section 508

electronic and information technology accessibility standards, the Canada common look and feel standard for the Internet, and other best practices. The accessible procurement toolkit is available both on-line in English and in French.

Another example of a government procurement practice is found in Ireland. Launched in 2007, the accessible IT procurement toolkit is designated for Irish public service bodies as well as anyone seeking to procure accessible hardware or software. Developed by the National Disability Authority, the NDA, the toolkit is based on NDA IT accessibility guidelines and is a Web-based application that covers four topics: Principles of accessible procurement, stages of procurement, accessibility targets, and supporting information.

accessibility procurement is a legal requirement for all public sector bodies under the Disability Act 2005. The ICT accessibility targets cover the following products and services: Web technologies; all information services including web sites and on-line application; public access terminals such as automated teller machines, information kiosks, ticket vending machines, information displays, point-of-sale customer card payment system, and car door entry system; application software; telecoms, fixed or mobile telecommunication devices and services delivered via interactive voice response system; hardware and software aspects of public or private telephones and video phones; menu-based services such as voicemail; and smartcards.

In stages of procurement, the tool covers writing a request for tenders, development and implementation, evaluating deliverables, and maintaining accessibility.

And finally, another best practice example of government procurement of accessibility ICT is found in the U.S. Jim Tobias, a member of our panel today, will be addressing the current Section 508 in more detail, but very simply put, the federal government, through a congressional act, is now required by law to procure accessible ICT so that persons with disabilities, whether they be federal employees or members of the public accessing government services, can have equal access.

Briefly, in 1998, the U.S. Rehabilitation Act was amended by the Workforce Investment Act and directed the U.S. Access Board to promulgate electronic and information technology accessibility standards. Published in December 2000 pursuant to public rulemaking, the ICT standards for government procurement of products and services became effective in June 2001, and since that time, the U.S. General Services Administration has established an accessible data center and provided training, including a procurement tool wizard, that is available on-line at www.buyaccessible.gov. The U.S. buy accessible wizard is a web-based application that assists procurers of ICT products and

services to comply with the accessible ICT procurement law of Section 508. A procurement law wrapped around the civil rights requirement, as I describe it, Section 508 is mandatory for all federal ICT procurements with some exception.

Now, the wizard is a procurement tool used by federal agencies, and it is open for public use. It resides on the general services agency portal gateway, along with resources and tools for meeting the Section 508 requirements.

Because Section 508 procurement law is supported by a complex regulation structure that contains extensive guidance for implementation, the buy accessible wizard integrates access to technical guidance and simplifies the procurement process. A procurement officer is guided by the wizard through a process of gathering data on the ICT product or service to be bought, and at the same time receives information about the product conformance to the Section 508 electronic and information technology accessibility standards. The wizard includes a market research database that is supported by vendor submission of what has been referred to earlier of the voluntary product accessibility templates that show the extent that their ICT products conform to the accessibility standards. The wizard also has a summary report that features -- feature that enables the procurement officer to draft a complete compliant request for proposals and, at the same time, serve as documentation on how the procurement officer met the Section 508 requirements.

I would like to conclude by providing some resources for your consideration as you move forward. First, please take a look at the handbook for parliamentarians on the Convention. It has a comprehensive resource, and the free publication thoroughly lays out the ICT obligation of states' parties and the role of government in implementing the Convention, and it's on-line at www.un.org/disability.

A second resource, as mentioned earlier, the success of the Convention requires both the mainstreaming of disability issues and stakeholder engagement. An excellent resource that discusses how to involve people with disabilities in the standardization process was published just last year by Dr. John Gill, OBE, Chief Scientist of the Royal National Institute of Blind People. It's available free on-line, and it's a long URL, but it's on this slide. And if you need to know, you can ask me about it later.

Next, there is a comprehensive background paper that discusses public policies, ICT accessibility standards, the Convention and global best practices that was commissioned by ITU last year and is also available free on-line on the ITU web site in French, English, and Spanish. This paper is linked to this -- to the web site for today's forum, and the URL again is

too long to put here. It was a privilege to write this paper entitled Meeting Information and Communication Technology Access and Service Needs for Persons with Disabilities: Major Issues for Development and Implementation of Successful Policies and Strategies.

And finally, another resource for your consideration is the book Web Accessibility, Web Standards and Regulatory Compliance. This is the second book I have co-authored on Web accessibility, and it includes the global survey of laws and policies around the world that address accessible Web design, and not only does it provide some of the best tools for accessible Web design, but it also provides the public policy and law support for implementation. This has been a helpful resource not only for Web developers, but also for the budget decision-makers and the public policy officials that need to understand the critical role of accessibility standards.

And Chairman, I conclude my presentation. I am leaving the podium so that I can read the captioning and hear what is being said. Thank you.

(Applause)

>> KEVIN CAREY: I'm greatly reassured that you're not leaving the platform for any other reason. So is 508 a holy grail or just a hollow shell? We who live outside the United States have watched it with alternating joy and sorrow. I have to say in Cynthia's presentation that she produced the longest and most concrete list of the day. I thought that when Axel gave his list at the beginning, he was going to win my always-awarded prize for the most concrete nouns in a list, but Cynthia's gone way ahead of him in that. But there are still two more presentations which might even pass that.

Now over to Jim Tobias.

>> JIM TOBIAS: Thank you very much, Kevin, I guess, for identifying U.S. speakers of English as the worst practitioners possible in our constant bouncing back between noun and verb forms of words. And I'll try to keep it to a minimum in my presentationalizing today. I'm here to talk about the recent refresh of accessibility regulations in the U.S., which affected two sets of laws and regulations that are already in operation. The one that you're probably most familiar with is Section 508 of the Rehabilitation Act, which is for federal and, in some cases, other public-sector purchase of ICT. The other law is Section 255 of the Communications Act, which applies across all markets in the United States, public, private, and otherwise, but applies only to telecommunications and an additional little slice called interconnected Voice over Internet Protocol is covered as well.

So why did these regulations need updating? Well, one of the

things that the Access Board and others discovered when they first promulgated the regulations was that not everyone was clear on what the meaning of those regulations was supposed to be, so what products were covered, and we've heard Section 508 especially referred to as a procurement regulation, but the law speaks clearly to maintenance, development, and use as well. So there are a lot of questions about, well, when my agency uses ICT, what are my obligations? Or does my obligation cease once I purchase an accessible ICT?

Other reasons for the change, which heard about earlier that we have processes of international harmonization, and it became very clear that Section 508 was no longer up to the international pace for development of accessibility standards. But probably foremost -- and we've also heard about this today -- is the pace of technological change itself, which rendered some of the provisions of the existing regulations even harder to understand and implement or even incomprehensible in terms of new technologies that were out there, such as the widespread adoption of wireless and VoIP and the convergence effect across the product categories that you may be familiar with within Section 508.

So one of the principal areas in which updating was necessary and one of the major points of focus of the committee was to look at Web software and content. We know that the Web is now not just a bunch of static pages with information that only changes when they're actively edited by someone, but the Web is full of dynamic pages, even full of applications that we use every day that behave very much like software that we would install on a computer from a CD. And the current regulations in 508 didn't really address that.

Similarly, content, the only provisions to focus on electronic content were Web pages and Web content, and we know that in federal environment and, really, in the universal environment, we have many more creators of content. Anyone who writes a Word document or anyone who records a voicemail message is essentially a content creator. So how can we use the old regulations to capture the accessibility needs here? We needed to refresh the standards.

So the (lost audio momentarily) -- arenas in the U.S. -- (Inaudible) -- which we called TEITAC, and its members were recruited and we've been advised broadly from a number of stakeholder communities, including the federal agencies itself who are responsible for implementing the policy and using ICT in the workplace, largely -- a large number of members came from industry, the mainstream ICT companies, as well as the assistive technology companies. We had representation from standards bodies, from consumer advocacy organizations, quite prominently

all of the major categories of conventional limitations were represented on a committee. We had researchers and developers familiar with accessibility technology over the years, and luckily, we had not only national but international representation, which I think was something of a first, at least in the U.S.
environment, where we knew that we have a global market and we have a global drive for standardization and harmonization, so we involved international representatives.

We were very happy that many of the people on the TEITAC committee were active and, in fact, led many of the other simultaneous standards development bodies. So we gained kind of synergy and immediacy from that fact.

So what have we accomplished is this well, aside from perhaps the most crowded slide in this presentation, anyway, the TEITAC operation, which ran for about 20 months, almost twice as long as it was first expected to take, so that may tip you off to a certain amount of complexity and politicization that went on, really accomplished a lot. I think we looked at the final product with a certain amount of pride.

The most significant, at least the most obvious when you look at the result, is that we've replaced the six product categories which were, you know, a separate category for software and operating systems, another one for Web, another one for telecom, et cetera, with a notion of product characteristics; that is, for example, we now care about real-time voice conversation functionality. I think that's a good example of American verbal normalization.

(Laughter)

But it does have a meanings. I think it has a meaning. It's what we used to call a phone call.

(Laughter)

But recognizing that now we place what we used to call phone calls on almost everything that we have, you know, obviously, phones, wireless, wire line, cordless, Skype on our desktop, a gizmo on our laptop, you know, we've got so many ways of communicating by voice. What we tried to do was abstract that functionality and understand what were the individual user needs that have to be reflected for accessibility to be built into that functionality no matter what platform it occurs on.

So this same kind of convergence approach or functional approach informed our work in software, Web, and content scheme, where now virtually all of the interface behavior, electronic interface behavior and content accessibility criteria sit in one section of the document, at least as we've recommended it to the Access Board.

We've continued the notion of functional performance

criteria, that is, a listing more or less attempting to be complete of the categories of user needs and, in some cases, of users and specific disabilities that must be reflected in the standard in order to capture functionality in a product that may escape the specific technical provisions. So for example, as technology changes or as something unexpected occurs in a particular ICT offering, if the product can't meet a specific technical provision, it perhaps can be captured or trapped or at least analyzed within the context of which set of user needs does it or does not meet, and how can we go about addressing those needs?

We also made it clear in our recommendations that the federal agencies need to go beyond procurement. We heard many times from industry representatives the frustration of an engineer who has spent a lot of time adding an accessibility feature to a product that was successfully sold and only to find out that the agency never bothered to turn on that accessibility feature. So I think we see this very often, a kind of underutilization of accessibility features, and we are clear in recommending that there be a responsibility at the agency level to configure products so that they maximize the accessibility that's built into them.

So I won't say much about harmonization. I think we've heard about it. I'll just say that I think we did a good job of harmonizing both with WCAG 2.0 and with ISO. I think you heard a little bit of anxiety in Judy Brewer's voice this morning, recognizing that especially with represent to WCAG 2.0, it's not really complete yet, it's not a finished product, and yet here the TEITAC committee has recommended very specific conditions drawn from the active WCAG 2.0. So we tried to address this by reminding the Access Board and all participants in the rulemaking that it may be better to -- to promulgate a rule that includes the most mature version, most mature stable version of whatever standards are being drawn from and referred to. I think this is a global and probably endless issue that we may want to recommend to the G3ict folks in their policymaker toolkit that we are always going to be in a synchronization, you know, not battle necessarily, but some sort of exercise of maintaining awareness of standardization issues and their input into legal and regulatory issues.

So the things that we didn't finish -- and trust me, there's a much longer list that I was urged not to put on this slide. I want to just refer to a few items, because I think they're relevant, again, to the global work that we're doing here. One thing that we really need to keep in mind is that the people responsible for procurement are not and will never be experts on accessibility. We'll be lucky if they have a 2% to 5% awareness

and sense of professionalism about that. And we can, you know, give them some training and we can give them some guidance and we can build them toolkits, but we really have to do as good a job as we can recognizing that those people will never come to that part of their job, because it is only part of their job, with the passion and professionalism and dedication that most of us in the room here feel.

So we did encourage the Access Board to consider in the informal recommendations further development of tools like the one that Cynthia just referred to, the buy accessible wizard, the VPAT. These both can stand the kind of upgrading and updating that the regulations themselves did. But beyond that, we want to encourage a sense of community of practice, which has more or less become a term of art of recognizing that those who participate in this work and who have a professional dedication to it need opportunities for sharing their resources and asking each other questions and, giving the answers and developing the field more or less informally across organizational boundaries. And we're hoping that in the U.S. we can help develop that and globally I think it would be valuable as well.

Another thing we hear about in a number of different tones, I guess, is that we can't really afford to hire accessibility experts to do the necessary work of evaluation and market assessment and testing with users against assistive technology. As an accessibility expert, I mourn when I hear we don't have enough money to hire accessibility experts, but I recognize that it's true. There are tens of thousands of tests that would need to be run with all of the domains of users with different disabilities. We must figure out a way to economically transfer that knowledge from one environment to another, and I think that speaks to the community of practice as well.

Another area of somewhat heated dissension or discussion was -- and Gregg referred to it this morning -- about, you know, how can we make sure that mainstream ICT products are compatible with AT products in a dynamic environment where ICT mainstream products are moving so quickly, and they really escape the resource limitations of the AT industry. Can we rely only on a set of specifications for an accessibility application programming interface, or do we have to test every product and software release with every product and software release in the AT world with every possible setting change? This is another irresolvable problem in the final analysis, but I think we can do some work along these lines, and I think that both sides of the industry equation are ready to make their contribution.

One of the things that we recognized is that although the AT sales, through a Section 508 procurement, are really a very small part of AT sales; that is, you don't find a federal agency

buying, you know, 10,000 seats of a screen reader -- in point of fact, if you look at AT sales, about 80% of those sales are somehow through the public sector. So we think that we can possibly aggregate some public-sector demand to help bring AT resources to bear on the interoperability issue in a highly motivated way.

And finally, in the research and development requirements we had from the Access Board, we know there's a lot more that needs to be done. We heard a little bit about it this morning as well. We don't have enough clear metrics and testing protocols for many of the things that we really should have by now, things that especially pertain to low vision or hearing loss, not deafness, but hard of hearing. What can we -- what more can we say about audio quality over a telephone call or recorded media? How can we do a better job of testing and providing results that are meaningful?

Clayton Lewis raised the issues of cognitive disabilities, which are really brand-new, at least in the 508 field, and we need a whole set of ways of analyzing products in a domain that most people find somewhat mysterious. When you compare it to vision or hearing, cognitive disabilities seem much harder to address with respect to testability. So we know that a lot more research and development needs to go there.

And we're also convinced that the technological changes that we've seen in the five or ten years since the regulations came into effect are still ongoing today, and we will see many more new products that expand or explode the boundaries of some of the provisions that we have in there, and some examples are in the hand-held world, obviously, touch and gesture interfaces, which are only marginally dealt with in our provisions, are revolutionizing our concepts of user interfaces, and we need to understand their positive and negative implications, and people may be familiar with these PICO projectors, these little embedded LCD projectors that we may find utterly replacing the displays of hand-held devices. How can we guarantee that people with low vision or people with impaired dexterity can operate gadgetry with those built in, and these are examples that are already reaching the market.

We'll probably see a half a dozen a Ye that are as disruptive of our notions of accessibility, so we've going to have to manage somehow in a faster, maybe lighter-touch regulatory framework something of a synchronization issue between writing laws and regulations on the one hand and allowing technological and market development on the other.

So hopefully I've expressed a little bit of what we did in the TEITAC process, and I hope that it's going to be useful for the global work that we're doing here as well. Thank you.

>> KEVIN CAREY: And now we pass from the large skies of North America to the intricate complexities of the European Union, where the interests of very many countries have to be harmonized, which takes a very special kind of skill. And it gives me particular pleasure to introduce Inmaculada Placencia Porrero. We have been working and, indeed, arguing together now for well over ten years, haven't we? So she is going to start, and she will, in turn, introduce Martina Sindelar. Thank you.

>> INMACULADA PLACENCIA PORRERO: Thank you very much, Kevin. It's a pleasure to be here and having you introduced, so it doesn't go from my time because he warned me at the very beginning, I will have to keep to the schedule, we'll try to do our (lost audio momentarily)

The policy context of accessibility standards development in Europe within the European disability strategy. On the second part, Martina will enter into the details of the mandates that we are developing now on accessibility standards. So, the first slide reflects the big change into the policy context in Europe in relation to disabilities, that it is also having an impact on standards development. Why is that? We have shifted from, in the last years, not only from the -- what has been referred to the medical model of disabilities, but also we have gone beyond the social model of disabilities, where member states had the discretion to do some positive things for people with disabilities to a right-spaced model in which people with disabilities are recognized to have equal rights like anybody else, and that is very well expressed in the UN Convention, and what the role of governments, of policymakers, is how do we make, how do we ensure that those rights are going to be enjoyable by people with disabilities?

So it has had an effect on the way in which we have to do our job and we have to deliver. And this is very important because not only all the member states have signed the UN Convention, but also the community as such, and we have to implement the Convention also at European level.

It is very good to say that the implementation of the Convention fits very well within the European disability strategy, and I would like to mention the four philosophies of this strategy because they are very well applicable, as we have seen today, to the idea of ICT accessibility. We need and we have seen in many countries -- it has been mentioned today several times ADA, DDA, so there is a need to have some legislations and legislative measures. In the case of Europe, we have ain't discrimination in the area of employment at this moment, but we also have to mainstream accessibility to ICT into many policies, and we will provide some illustrations further in the presentation.

We need to work on specific accessibility measures, and we need to mobilize the stakeholders, in particular, also users with disabilities. To that extent, we have a comprehensive program in each of the actions, and we are supporting European (Indiscernible) to participate in the process not only of developing the policies in general for disabilities but the particular policies of development of accessibility standards.

As I said, the -- most of the member states, except one, for the time being, have signed the Convention, and not because they had a problem but just because there is a process at stake to them. They have informed us that they are planning to do so. So -- and the community also have signed, and we are in the process of ratifying. Member states have taken different time schedules to do so, and we are aiming to have and to implement the big corporation practices and the obligations we have between the member states and the community towards an international convention to try to deposit as much possible the certification in a joint manner. So soon this is why you are seeing there is a will little bit of a delay that some member states have done the internal homework, but they have not put the instrument on the table.

So this is coming. It's coming.

In the meantime, we have had last year for the first time a ministerial meeting, so the ministers responsible for disabilities have come together, and they have said that not only do they encourage the community to sign and to ratify quick, but also that they would like to confirm their wish to do it in a coordinated manner and also to have put in place a process so that we will monitor together and we facilitate the implementation of the Convention at European level.

In order to do this, we need to define the competencies, so what are European competencies, and what are member states' competencies? Where do we meet? What actions can we do at European level? What are member states' subsidiary actions? And that is the process in which we are today. Soon we will publish -- we will issue, sorry -- a proposal for a Council conclusion for the UN Convention where it has a declaration of competencies. Basically it says what we can do and what do we need to do together.

In the meantime -- in the meantime, the members -- the ministers asked the Commission to help -- to be helped by the high-level group on disabilities, a group of disability experts, and prepare a report, saying how far we are in the process of ratifying and implementing the convention. The first report will be available in May this year because we are having the second ministerial meeting, and that report will provide a good review not only of the let's say administrative processes but

also in the content what are the main challenges and solutions we see the main activities in which we need to work. And as soon as this report is public, I think it will be very good to offer it to the toolkit that has been just announced and also to the G3ict web page because it will contain information for Europe.

So I would like to highlight that every two years we publish a document like this, which is already available in the web site of the G3ict that describes all the initiatives that we do in relation to disability policy, also covering the ones of the area of ICT. You find here the details that were not entered into each of the activities. I encourage you to read the documents.

But just to summarize some of the key issues, the data that we have today still tells us that there is a considerable gap in Europe. I mean, we have mentioned the situation, folks in developing countries, but still in Europe there is a lack, a gap between people with disabilities and people without disabilities in access to basic services like education and having access to employment and doing any other social type of activities.

We also know that this difference between member states -- this differs a lot between member states, and this poses a challenge for uniform implementation in the Union in Europe, and also on ICT accessibility elements. We know that there are services, for example, relay services, that some countries offer, but some countries do not offer relay services on-line. I could provide you many -- countries have got legislation mandating Web accessibility. Other countries do not have this type of policy -- active policy on the table. So we need to work with all these things.

In the meantime, as Jim also has mentioned, we are concerned about international harmonization because the world, the market of ICT products is a global market, so we are participating. We were very happy to participate in the TEITAC process and also to contribute to the and incorporate with the (Indiscernible) initiative from the beginning, and we hope to continue to do so.

Let me just -- this slide reflects the content of the information. I am not going to enter into the details because I think Kevin is watching me with the time. I just see his hands on the watch. But I would like to highlight, before I pass the floor to Martina, with too a couple of thoughts. First of all, an accessibility of goods and services, accessibility of ICT can only be accessible if it is really embedded as a complete experience from the user perspective. So I was very happy this morning when the (Inaudible) -- the issue of accessibility to the built environment was mentioned because this is -- these are two types of accessibility areas that seem to be very much --

(Inaudible) -- in its practical implementations. From the user perspective, we need to be coming together. And Martina will expand a little bit more on this element.

The second thought that I would like to mention is that in order to develop policymaking in this area, we need -- and the Convention is also clear on that -- that is indicators. We need indicators, and to fill these indicators with data, we need data. We are working on this, but this is presenting a big challenge I think not only at European level but also at international level. While it is agreed at international level the use of ICF as an instrument to help measure the way we are going to measure social participation, it is still far from being a practical -- having practical instruments so that we can do so in an easy manner. And when it comes to technology, it is exactly the same situation. We know we need to measure participation of people with disabilities in the use and enjoyment of technologies.

We still don't have the right instruments, and I need -- I think that it is important to -- to invest on that as we are investing in other -- in other aspects of the accessibility of technology.

Finally, before I pass the floor, I would like to highlight that it is very important and we are trying at the European level to combine the different policies where accessibility is relevant so that we present a coherent approach to it. I would like to mention not only the Disability Action Plan that contains a big reference in the area of inclusion, where the eAccessibility policy is being developed, but also that in -- in documents like this in other domains, which they are not so specifically focusing on disability issues, for example, in the area of the development of the single markets, there is in the most recent communication about resolution, a clear reference to accessibility standards as an instrument to empower consumers in Europe.

There is also a recognition in the latest communication on standardization and communication to the role of accessibility standards and the role in public procurement in order to foster innovation in Europe. I think this being together, social and industry policies, market policies also, is essential in order to advance into a better accessibility of products.

And I leave the floor to Martina.

(Applause)

>> MARTINA SINDELAR: Good afternoon. My name is Martina Sindelar, and I am from the European commission from DG employment -- excuse me -- (Laughter) -- I wanted to say this is not right in the program -- from DG Enterprise and Industry.

Before I take the opportunity to explain to you in some more details two of our main activities in standardization concerning

eAccessibility, I would just like to give you very, very briefly some figures concerning the public procurement market because public procurement and the way through purchasing goods and services is very, very important.

There are two public procurement direct -- European public procurement directives which give the legal -- the legal background for the activities, and from the figures you see here, it is very obvious that it is a huge market in Europe.

As Inma already said, it is important to understand the standardization policy and standardization activities in the framework of overall European Commission's policy, now focusing on eAccessibility, so Inma mentioned in details the eAccessibility Action Plan, but we have also other important policy documents where we have very clear links to standardization, and those documents give a prominent role to standardization in order to foster eAccessibility and interoperability.

Again, just more at this stage as a background information, again, some information, some priority areas.

>> (Off microphone).

>> INMACULADA PLACENCIA PORRERO: Oh, yes, okay. Sorry. No problem. No problem. As I said -- well, I think we'll skip this to the market.

Also important to mention very briefly that the public procurement area is of extensive importance for employment, and again, I just wanted to leave you these messages to give you some more background information. The public procurement directives are rather complex legal -- legal works, and again, it's not time to go into details. What is important (lost audio momentarily) -- articles is that the contracting authorities should, whenever possible -- of course, it is no obligation, but whenever possible, lay down technical specifications so as to take into account accessibility criteria for people with disabilities or design for all users.

And we have here exactly the link to the two main currently ongoing projects, standardization projects, which refer directly to eAccessibility and which have the clear objective to foster eAccessibility.

The first is a mandate on accessibility requirements for public procurement of products and services in the ICT domain. It has been mentioned already several times this morning. And another mandate concerns the accessibility to the public bid environment.

Before I take the opportunity to give you some more details on these projects, I would like to just clarify for those who might not know what is a mandate. A mandate is a specific standardization work. The Commission can ask for the three

European standardization organizations, so it is CENELEC and ETSI. You can see a very important way of asking for policy support in the area of standardization. The other possibility the Commission has is -- and this is done in kind of work program -- ask for support of standardization projects, but in a broader -- in a broader way.

The mandate gives the Commission the possibility to specify in much more detail its need in the area of standardization to help to support and implement policy -- important policy areas. The mandate we are talking about here reflects a policy need coming from DG employment and DG Information Society, so you see we are working very closely together in this work. And as I said, the Commission can describe in the kind of terms of reference specific needs and the ways this mandate or this work should be executed. And of course, the Commission is funding these -- this work.

This mandate, 376, certainly for many reasons is very important, but also very specific mandate. Because I think it is perhaps the -- you can say it's the first time that the European Commission launched such a mandate very specifically in this important policy area of eAccessibility. The mandate itself is divided into two phases. In phase one, the ESOs are asked to come up with an inventory of accessibility requirements and existing standards. I go later into more details. And the second is a report on testing and conformity assessment.

The three standardization organizations divided the work, and the first task, the inventory, is done by ETSI. The second, the report on the testing and conformity assessment, is commonly and jointly done by SEN and CENELEC. For the execution of this mandate, the SOs established two expert teams, and what was very important for the Commission is that all stakeholders would have the opportunity to -- in a way, to accompany the work of the expert teams or to give advice, to give their input during the phase of the execution. And we are very glad that the ESOs gave room to all stakeholders, and we are glad that colleagues like Yury or Alex or others can bring their input because it was our aim to ensure that not only the highest transparency is ensured but also to make sure that work, the very important work done on the U.S. level, Section 508, and other international institutions, organizations are taken onboard.

We didn't want to have to, again, reinvent the wheel. On the contrary, our aim is to find the most harmonized approach as possible, and so it is obvious that all the work already done or currently undertaken is taken -- taken onboard. And for example, concerning the ETSI part, it is a subgroup of the technical committee, one factor that Stephen is sharing, which is accompanying the work.

The ESOs are, I would say, now currently in the intermediate phase of phase one. Several draft reports have been published. They are all accessible on and published on the Web, and they are all open for public comments. So when you go -- I apologize, I do not have the exact web site, but when you go on the SEN, CENELEC, and ETSI web sites, you find links to the expert teams' work, and you're all invited to comment on the reports published there.

I would also like to take the opportunity to announce that on the 3rd and the 4th June, there will be an open workshop in Brussels where both expert teams will present their work so far done, and this workshop shall be a real interactive workshop and shall give a lot of time and space for all interested parties, for all stakeholders, to give directly their input and comment. So again, also I would like to invite you to come to this certainly very interesting workshop.

Once the work of phase one, which will mainly be two reports, will be finished around end of the year, we will start then, after certainly some contractual negotiations, with phase two. And the main objective of phase two is to produce European standard on eAccessibility. What is also very important and what was very important for the Commission when we wrote the terms of reference, a technical report and support guidelines and an on-line freely accessible toolkit. Why is this so important? Because very often public purchasers are small communities, and as Jim also mentioned, in most cases, there are not the people who are responsible for, they are not experts in eAccessibility, so it was very important for us to -- to develop a toolkit or to ask the ESO to develop a toolkit which helped them to use and to implement the standard.

I'll rush very quickly. The ETSI part mainly provides or shall provide an inventory of services bought by procurers, existing functional requirements, existing standards in Europe and internationally, develop a gap analysis so are there, perhaps, particular European accessibility requirements which are still not addressed, and, as I said, existing work shall -- on international level shall be taken into account.

The ETSI part on the conformity assessment is an analysis and just show you this slide what certainly will do analysis of the different schemes, but also analysis of the different criteria, for example, transparency, testability, all these criterias are very important afterwards for the practical implementation.

As I said, the second mandate which is still not issued or which is just in the phase of being issued concerns the access to the public -- to the public-built environment, so public places, parking, but also airports, trains, and so on. The structure of the mandate is similar to the other one, so again,

functional requirements shall be identified, and of course, this is a bit different mandate since, for example, accessibility aspect of construction products must also be taken into account, but of course, both mandates are very linked, and we hope to get very strong synergy of effects after both mandates have been executed.

Very quickly, when we --

>> You have one minute. I'm sorry. You're overrunning. One minute.

>> MARTINA SINDELAR: Some conclusions. The European Commission committed themselves very strongly to the rights of people with disabilities itself, as I said, and in its policies, and we would like to highlight also the fact that disability -- people with disabilities are an important social -- important socioeconomic actors, and someone said this morning with the help of ICT technology, the potential of people can be unlocked, and I found that was a very significant expression.

As Inma said, this is usual and very typically for the Commission's work, the closed corporation with the member states representing the competencies the member states have, and this goes through all actions. Of course, also particular concerning now the implementation of the UN Convention.

Another area of the European Commission's policy is, of course, the direct cooperation with people involved, in this case with people can disabilities, but also with industry, and I would like, last but not least, mention a very successful dialogue on ICT standardization concerning eAccessibility we have with the U.S. government. So this dialogue offers us a great opportunity not only to exchange information, what is going on on government level in this area, but also to learn from each other and to ensure also from governmental side as to the broadest extent possible a harmonized approach with a common goal to improve the situation for people with disabilities and to foster eAccessibility.

Thank you very much for your attention.

(Applause)

>> KEVIN CAREY: There is just time to thank all our speakers and to formally close this session. Thank you.

>> Excuse me. So I would like to call on the podium the session chairs, and Frances West, Andrea, and Mr. Urbana (Indiscernible), please.

>> So for this final session, it is my pleasure to introduce to you for -- to chair the last session of our day Ambassador Luis Gallegos, who is also serving as chair of this, and I want to tell you it is a great privilege for us to have Ambassador Gallegos with us. He was the first chair of the preparatory community of the General Assembly of the United Nations, which

actually edited the text of the Convention. And Ambassador Gallegos is credited with getting so many members of the Society to work effectively in the context of the preparatory commission. Ambassador Gallegos carries many -- (Indiscernible) -- but he is also a team member of the Commission to the United Nations. He has been, for many years, involved in the preparatory commission of the convention, and he is chairing G3ict when he is not preparing the trade agreement between Ecuador and the United States. So Ambassador Gallegos for being with us. We really appreciate your presence. Thank you very much.

(Applause).

>> LUIS GALLEGOS: Thank you very much, Axel. It's an honor and a pleasure. Let me begin by just saying we have a concluding session. I would like each one of the speakers to have five minutes each. I will only say a few brief words at the beginning and at the end.

It's an enormous pleasure for me to see that the Convention has entered into force with 21 ratifications at the present. Of course, this we had perceived to be a very prolonged negotiation. When I began the negotiation, I asked the UN experts who had been in organizations with these type of treaties how long it would take, and they said the last one took us 12 years. I thought that that was an extreme, but I am very happy that this treaty came into force and will come into force on the 3rd of May, 30 days after the 20th country ratified it in -- Ecuador was the 20th country to ratify it. Began in 2002 with the sessions of the Committee in 2003.

Let me be very clear about the perception that Axel just said, and it is my conviction that we were all very professional diplomats in those halls in the UN in New York, but they did not understand exactly what diplomacy was about. And I think that integrating the disability community into the framework of the UN negotiations was vital for us understanding and getting an end product. It is not to the satisfaction of all when one negotiates a Convention of this type. There are many things we would have liked to keep that were negotiated in the basis of 192 countries, but I think we did a very good situation of getting into agreement for the 192.

Let me say that not only the 192 members have signed. Only 127 of the 192 have signed. There are some that are very reluctant and some that were very, very against it. But I am extremely happy that we have a convention for persons with disabilities. Just on this point I would just like to make a remark on what we're doing here. We have 650 million people with disabilities, and that is the 10% of the population that WHO has signaled, but most experts calculate that more than 10%

of the population has some type of disability. You are either born with a disability or you acquire it during your life, either by accident, either by sickness, either by war, or whatever, natural disasters, and you can complete a whole list of this. But certainly, as the world ages and we become older, we all have some type of disability, and I was very glad to hear this mentioned this afternoon.

We have a challenge because more than 45% of the households in the world know or have someone with a disability. So this is a universal treaty which will affect the universality of human rights. I think it will affect us all. To what we do here is a very important issue for me because it's the first applicable meeting we have had where we are talking about the progression forward, and I would like to congratulate Axel and his team and the G3 groups that have met constantly and worked here in ITU, and it is very strange for me to be in ITU, which is a very technical organization, saying that they are the first to take a stand on this issue. I would have felt that the High Commission of Human Rights or the development issue would have gone first, but I congratulate you on the endeavors because I do think that you have a very important role to play in the private sectors and public sectors in this case.

I would like to call on Mr. Pierre Probst to be the first person to give the conclusions of his panel, please.

>> PIERRE-ANDRE PROBST: Thank you, Excellency. I have put together two slides from the opening session. We had the presentation after the introduction by Mr. Malcolm Johnson from the THB and from the development sector from Mr. Green. We have presentation by Axel of the convention. I took three elements from his presentation, and I think it shows very well what is inside this very important text.

We have obligations, so it's not only a text describing some nice things, but it has some binding. Accessible communication defined in the Convention, and it covers both the public and private sector. As I can see, this is really a great opportunity to progress in the deployment of ICT center. I have put here developments. You have to develop, you have to implement them in the equipment, in the different systems, and you have to deploy them. Just to remind (Indiscernible) from the BDT, that for the developing countries, it's a very, very, very important subject. And this has been said many times this afternoon, that deployment is very important.

For me, I have been impressed to see how many players or key players are working in this field. It's very impressed. Andrea told me 1991 she was alone.

>> I was.

>> PIERRE-ANDRE PROBST: Now we have 130 people in this room. It shows great development. But it needs, I would say, a very good partnership between all these players, and it includes the users, developments, organizations, and also the ICT industry.

On the second slide -- and this is, again, from my viewpoint -- some direction how to improve this partnership. We have to involve your users, ladies and gentlemen, and I encourage your users to organize yourselves and contribute to the development of standards. We in the telecom industry have not yet been able to take into account the users' requirements in general, so it's a big problem. I am sure every one of you have a mobile phone. Did you ever get a question from the manufacturer to ask you whether you are satisfied or not? No. You get the handbooks with 300 pages, so this is really very important.

Then I guess to improve this partnership, relation, it's important to bring the key players together. So there are different possibilities here. (Indiscernible) will say a few words about the joint activity on the access of human factors on the ITU. We have also a Commission created last year in the Forum in November in Brazil.

Then between the SDOs, we have existing mechanism to work together to coordinate, to develop common standards. For instance, between ISO ICT and ITU, we develop common standards, common texts so this mechanism exists. And then conclude cooperation agreement. I think today we have a very good example of cooperation and collaboration between the G3ict and the development sector of ITU. And maybe the other direction. So these are the conclusions from the operating section. Thank you.

>> Thank you very much, Pierre. Thank you very much. I would like to call about Whitney Quesenbery, please.

>> WHITNEY QUESENBERY: I am afraid I don't have my slides and I have to come down here. So our session, which was, I'm afraid, the longest and the least disciplined, covered issues around human -- the human interface. Yeah? So I think we -- to summarize it, maybe three main points. The first is that accessible ICT can benefit a wide range of people in many contexts, not just the declared disabilities. So for instance, as Bill Curtis-Davidson pointed out, benefit the aging technology users. Both Stephen and Gregg in their own way talked about the always-on 24/7 digital networked economy. That's a nice noun string. But in that world, being excluded from it has increasingly serious consequences, so it becomes an even greater issue.

The other is that new technology challenges our ability for assistive technology to keep up. We heard both in our session

but also later in other sessions about how fast we're developing new technologies. We can barely keep up with them just to get the products out, let alone to keep up with AT. And that -- so things like new-wave technologies, fixed mobile convergence, and so on. And Gregg made a very interesting point that we must think beyond adaptive assistive technology to begin to think about the accessibility as a public -- something we provide like we provide public libraries, public transport, public schools.

Finally, I think everybody talked a great deal, not just in our session but across the day, about the fact that accessibility really needs to be built in. Bill Curtis-Davidson did a wonderful job of introducing us to universal design principles and pointing out how they align with the themes of the Convention, so once more we have an area where existing work can be used to further the aims of the Convention.

At ISO we're seeing standards that are now currently scattered throughout the various ISO working groups, et cetera, being brought together in one family, once again emphasizing the fact that these things all go together, that a human-centered design process, accessibility, usability, ergonomics are all different sides of the same coin and have to be worked on together. And it was very interesting to learn that at ETSI, the human factors group not only writes standards but actually does research, so we're having a group that's working on standardization but is also doing research with users to understand the impact of those new technologies.

I won't read it out, but we heard two definitions of usability and accessibility that also point out how they work together, and the ISO -- the ISO standards that start with a definition of usability (lost audio momentarily) -- effective -- (Inaudible) -- and then goes beyond that to say that accessibility is usability for a broader range of people, so it's the same thing extended more broadly and applied in some very specific ways.

So if we wanted to get to two recommendations and conclusions for future action, I think we might get them down to these two. The first is the notion that we want to, in all our work, move towards ubiquitous accessibility, building access into products rather than applying it afterwards, looking at standards that can adapt mainstream technology or empower mainstream technology to be used in ways that are useful not just for perhaps their original purpose but also for broader purposes. And Gregg raised the interesting idea of beginning to build AT features into ICT and into networks. We've certainly seen this with the operating systems, that our operating systems come with a number of accessibility features. Why not extend that same concept?

And the other -- and I was very pleased because I thought I

might be alone in saying this -- that we really need to begin to think about not just accessibility, not just removal of barriers, but making it usable. But if I can come to work and sure I can read everything and sure I can access the information but it takes me five times longer to do so, have I really created a situation in which someone can fully participate? So not until we've really created a usable situation for people who need help with accessibility have we reached true accessibility. Thank you.

>> LUIS GALLEGOS: Thank you very much. Eric Velleman, please.

>> The second session was about accessible contents and services. I just took some of the conclusions from the people presenting there, and one of them is an important one. Do not forget the authoring side of the picture. So accessibility when creating the content, when creating applications like the authoring tool guidelines, most l look at the content side only. Engage in a thorough process of implementation and planning and then involving and addressing stakeholders, then all stakeholders, adopt harmonize standards and publishing frameworks, promote awareness, select supporting authoring tools, et cetera, et cetera. Agree and support with methods and implementation and also address daily routines, things like trust.

Then one of the things we heard was look at the system as a whole, and then you can decide where to input accessibility beforehand. And the development of ICT standards with people with disabilities with people with disabilities is crucial to bridge the digital divide. And universal design in combination with assistive technologies is probably the best logical and practical guidelines to develop accessible ICT products and services with reasonable cost.

And then critical issues of the whole community are good subjects of collaborative research by ICT standard development groups and organizations of peoples with disabilities. And the last slide, I think. As a follow-up for the Convention, establish a legal and policy agenda might be an idea, or agree -- I think this is happening also, but agree on national goals and future vision was something that came up. Lay out practical long-term objectives. Agree on terminology to explain to the public what we're talking about. Agree on the means and methods to use for accountability and reporting. Provide affordable access to information and accessible ICT.

And then two other things is look at and coordinate with existing standards and work, like under mandate 376 that was just presented, and the work that is done by ETSI there. And also an example of the cluster work, where 23 European partners

worked on a unified Web evaluation methodology.

That's it.

>> Thank you, Eric. Jim Tobias, please.

>> JIM TOBIAS: Yes, I'm going to try to keep this brief, like that text message that you get that tells you you won the lottery. It doesn't have to be long, it just has to say you won.

So what I think we need to do as a conclusion is to play up the strong points that wireless already has for us, already showing accessibility dividends. Wireless is everywhere. It's available everywhere. It's available inexpensively and there are many ways for paying for it. This makes it a very good platform for providing accessibility regardless of the economic status of the individual or the locale.

Wireless accessibility should be considered an aid to personal mobility because it helps people wherever they are locate themselves, navigate, and get services that are based on their locations, and we can piggyback very profitably on already existing mainstream services and technologies that support that functionality.

Wireless allows a multitude of consumer choice. It has a huge selection space of hardware, of services, of networks, and of software. There is not quite yet a robust market in third party, but we see the development in that because it is responding to the huge market potential in wireless as a whole already to see screen readers, screen magnifiers, and other accommodations based on the wireless platform. This gives the users a large degree of choice. It also gives them an opportunity to personalize and customize their interface, and in one potential business model, allows users to subscribe to their accessibility features and services rather than make a large capital investment.

I may be sneaking in points that weren't exactly explicit in the presentations, and I hope you'll accept my apology. One of the challenges -- and this was explicit -- is that because technology moves so quickly and wireless technology probably more quickly than the desktop environment, there is always going to be something of a struggle to synchronize with legislation and regulation how can we maintain the mandates and the expectation of -- that users have for continued accessibility if the technology is always exploding beyond the boundaries of the regulatory framework, and I don't think we'll ever have a final answer to this. It will just be an issue that we will continually have to manage in a balanced manner that allows for standardization and regulation but doesn't impede technological progress.

And I think we had wonderful examples of location-based

services and remote administration and management as strong and, again, mainstream advantages for people with cognitive disabilities. So the overall umbrella conclusion might be that what we need to do is take advantage of the already existing accessibility and usability support features found in the mobile wireless platform and encourage further development and encourage awareness and utilization by consumers with disabilities.

>> Thank you, Jim. Chiara Giovannini, please.

>> CHIARA GIOVANNINI: Thank you. I would like to jump directly to the two last slides, the recommendation -- further on. Yes, the recommendation and conclusions. So I would like to -- as you know, in our session we focused on the product development methodologies, and we would like to make a very pragmatic recommendation to this forum, and it is to use the ITU-T SG 16 checklist we included in the toolkit that is going to be produced. We think that this is going to be a very good start, and we hope it's going to be useful as well.

We also think that the training and the testing of the -- of accessibility requirements and the training of the people developing accessibility software or accessibility products is key to the development and the keeping up-to-date with the requirements of user with disabilities, and therefore, we think that also the toolkit should look at -- or should have a section on creating these materials for training and testing.

And we also learned that the existing standards on quality management, ISO 9001, can be used already for including accessibility requirements into the development process.

This morning we heard a lot about existing standards, standards to be developed, standards already approved. However, we want to buy an accessible product, it is still quite difficult. There is an accessibility gap. And this is -- the next slide, please. Yes. There is a perceived gap, but there is a real gap. Depends on your point of view. However, the UN Convention is providing us with the new opportunity and it is to implement the standards to give member states or the signatory parties the power to check whether those guidelines and standards are used. If I noted, it is Article 92A of the Convention. Therefore, we might want to -- the development of standards is going in the right direction, and there is also a sort of stage development in the sense that at the beginning we had guidelines, we had requirements in the form of design and the performance requirements.

We might want to see if the product to develop methodologies are a good way to implement the requirements that we have already developed. But I would like to keep it as a question mark because I think that further discussion and thinking is

needed in order to see if it is a good step to take. Thank you very much.

>> Thank you, Chiara. Kevin Carey, please.

>> KEVIN CAREY: I'm not sure whether my slide arrived or not, but it doesn't matter. Give your eyes a rest if it doesn't. And I will summarize the slide, but I will unashamedly introduce some of my own points rather than try to sneak them in. The first conclusion we came to in our session was about the need to mainstream accessibility, though I'd like to leave you with a question of whether that is simply ideologically coherent, given quite often people are more visible inside the city walls than outside. At least outside they send you food parcels. When you get inside, sometimes you just starve.

The second conclusion was on the need for stakeholder involvement. Again, I put a rider in there. Last year I went around the world doing a project on user requirements, and I went to 11 countries, none of which had a methodical way of collecting random sample, representative sample of users so that we could collect user requirements to inform the procedure. So it's a nice theory, but we're going to have to do something a lot more practical about it than simply assert that it's necessary. The third main conclusion that I put on the slide originally was that we need to look in a concrete way not just at something called accessibility, but at something that was referred to once this morning, and that is task completion. In fact, as a disabled person myself, I don't care about accessibility.

I don't do accessibility. I shop, I bank, I want entertainment. In other words, that's why I was talking earlier about Axel's string of concrete nouns, because disabled people live in a real world where they want to interact inside what I think are called sectors rather than living in this abstract world where we either have accessibility or we don't have accessibility. So I think task completion is very important. And therefore, following on from that, involving sectors in what we do, whether it is banking or retail or the government or broadcasting, is very important because it presents us with an opportunity and presents us with our own challenges.

To finish with, first of all, yes, public expenditure is very important, but we're approaching a time when there is going to be a lot of public expenditure on sorting out of financial system, food security, and people security. So if we're actually going to make a case for public procurement, if it's going -- we're either going to have to get the economics right to show that it isn't going to cost money or, if it is going to cost more money, we're going to have to show that that's worth it. I suspect at the moment we need a good deal more economists

in the room and maybe a few less lawyers.

Gregg mentioned earlier -- and I think it's very important -- the idea about the pace of change because that also implies that there's going to be a great deal of cost. And we're going to have to be a lot more realistic about what we do and what we don't do, and that brings me to my final point. Every time I come to one of these conferences, I pray that it's the last conference I come to where we do the theory and that we'll get out of the theoretical stratosphere down to specifying exactly what tasks people have to do and by what deadline they have to do it.

(Lost audio momentarily)

-- from industry to make your comments, please.

>> Okay. Thank you. Let me just give you a 30-second introduction of myself. I am Frances West, and I am responsible for IBM Human Ability and Accessibility Center worldwide. This is an organization that's dedicated to helping IBM to bring out its hardware and software and services solution to the marketplace in the most usable and accessible way. We also have a mission of really providing the leadership in this area to the marketplace in general.

Some of you might be wondering why is IBM interested in accessibility. Very fundamentally, there are two reasons. One is about talent, one is about revenue. IBM actually hired the first person with disability back in 1914. That's a good 76 years before the Americans with Disabilities Act. Because we compete on innovation, and to have people with disabilities in our workforce really helped to fuel the innovation.

How many of you have heard about the product ViaVoice? And that product actually was developed by one of our deaf scientists from Russia. How many of you have heard about the product Home Page Reader? And that was developed in Tokyo research lab by Dr. Chieko Asakawa, a blind researcher again. So we have seen the benefit of people with disabilities in our workforce.

The next point about business, there is no questioning in our mind that we can make money out of disability, so to speak. It sounds a little crude, but it is absolutely, just like Kevin mentioned, people with disabilities, they shop, they bank, they travel. So there's lots and lots of business opportunities out there, and we believe in that, and we also have already seen early adopter industries, like banking, like retail industry, like travel and transportation industry. Earlier you heard Bill Curtis-Davidson on my team talking about kiosks. And again, for those of you who are on-line, you can type in. You've probably heard of the company Macy's, which is a very large department store. If you type in Macys.com, you will get to their top

page, and if you scroll down a little bit, you will see there is a little life link that allows you to start up a little program from our Tokyo research lab that allowed visually impaired people to navigate the macys.com site in a much friendlier user way.

So there is no question that the business is there and the business needs can be had if you focus on thinking about the topic from a kind of a broader and not -- and segmented view.

The way -- the thing I do want to spend a minute to talk about, though, in terms of industry, reflection about today's topic -- or today's forum is that right before this session, I think Inma talked about standards in innovation, and I'm so glad to see that word innovation appeared on the page because from our perspective, as much as standard is needed for this industry because, after all, this is very much a technology-driven topic in that if we don't have the standards, then we really risk fragmenting the market even more, but there is a whole big piece of innovation that's required. We spend a lot of time talking about, for example, cell phone being not accessible and that we really should, you know, build in the accessibility from the get-go.

From IBM's standpoint -- by the way, my organization is situated inside IBM Research. The reason we put it in IBM Research is because we truly believe that technology, at least in the area of accessibility, can be either a uniter or a divider. So we need to put a lot of focus on innovation, not just on the existing issues, but on the future topics and future technology. For example, in the area of social collaboration area, Facebook, YouTube, these are the new phenomenon in the world. How many of you have heard about Second Life? We believe that 3-D Internet is going to be a ubiquitous platform for the next generation because I know my sons, that's all they live is in the virtual life. If you think about Avatar, that's the ultimate personalization of a personal experience. An avatar can be anything you want it to be.

Harvard Law School already are putting their courses on Second Life, and what they found is that through Second Life eLearning, distance learning, they actually get better student participation than life in the classroom environment. Why is that? Because they have students from other countries who are not native English speakers. When you are in classroom settings, people who cannot speak English tend to shy away from raising their opinion. But when they are an Avatar in a virtual environment, they can be equal participants.

So one thing that I will leave with you is that as your government begins to set out policies and also standards or legislations, there is a big research and development piece, and

you can help companies to participate with -- in this area by incenting or motivating innovative ideas and innovation -- innovative research. From a private industry standpoint, we're doing our part, but we do need the government to meet us halfway so we can raise the floor because this is, after all, a societal transformation issue. A single company, single government, or single NGO cannot force the issue or solve the issue. We need to come together in a very collaborate way and really create a business model that drives the public and private collaboration and innovation.

>> Thank you. Thank you very much, Frances. Andrea, please.

>> Thank you, Your Excellency. I like speaking last because I don't really have to say a lot. You've said it all. It's wonderful. I will say something about coming here in 1991 with a bee in my bonnet because all the text telephony throughout the world was incompatible because of the "not invented here" syndrome and also the "I want to save the world" syndrome and "my way is best."

Without standards, we can't function as a world. And without standards, we can't function in the realm of accessibility. I -- I get emotional. I'm so delighted to see all of you here. Many of you I've worked with. And I always say I'm not going to cry, but I just am so happy. And what I think that's come out of this, contrary to what Kevin thinks, I think we need another one because the information that has been shared here has been so valuable. I've learned a great deal.

I'm pretty cognizant about deaf telecommunications. I'm learning a great deal about autism and blindness and all the different problems that people have. You mean you can't hear me?

(Laughter)

That's a first. Or any case, thank you very much. Anyway, the thing that I want to see happen is those of you who have come into this room with information to share, those of you who have come in here to learn something, and also I want you all to be aware, as you are, that we have representatives from different disabilities here and participating. This needs to happen more. We need to have more people who actually have some of the accessibility problems participating in this forum and telling us exactly what has to be done.

Now, I grew up in a deaf family, and I was the first deaf telephone that I know of before we had text telephony, and my sane name is this with a telephone, and it went like this because I talked to fast.

My parents were oral and lip readers. My father got so frustrated with communicating with a five-year-old, I think he was inspired in many ways, and he and his two other colleagues -

- my dad's name was Andrew Sachs, worked with Bob and Jim to create the first text telephony using surplus -- because no one could afford the big things that were coming out with a teletype. We just took the junk and reconditioned it.

It was probably the only first time that people who signed and people who were oral actually worked together without deciding which language they should be using. It was fantastic. It's beginning to happen again where we're coming together again to actually work together, not only people who are not disabled, but people who have different disabilities are all here in this room joining forces.

I have been so privileged to be a part of ITU. ITU has delivered. They have backed me. (Beginning to cry) here we go again. Now, I get so emotional. (Indiscernible). The ICU, I see so many of you -- and Gunnar Hellstrom -- who have given me time, free, and who have written standards and who have worked so hard. Now, where we need to go is to industry and to the regulators and to governments to make them understand that they have to take these standards and make them mandatory in the nicest possible way, but they need to be implemented by industry. And a lot of times we have created fabulous standards, like V.18, which Malcolm, who is the director of the TSB, mentioned earlier today. It only was really implemented once in a broad sense, which would have been a broad platform, and that was with (Inaudible) -- could talk to any zone in the world back to back if it was part of the six flavors. It is a shame that it didn't go into regular modems. It would have solved a lot of problems.

But now I see all of you, and it's possible, through all of you and more of you coming in, to actually spread the word, influence the people who are in power, and with the UN behind this, I think we have a very good chance of leveling the playing field. We may never catch up with the problem that Gregg Vanderheiden mentioned. We will always be a little bit behind because there's always going to be a brain shooting way ahead making something fantastic that we need to be a part of, but through communication and through all of us who really care about doing it, I think we stand a pretty good chance, judging from the people in this room.

So I'd like to see another one of these forums come up and a bit longer, because that's what I've been hearing from all of you. We want to be able to discuss, ask questions, and really communicate, which isn't going to happen today. But I think we should do another one, and I hope all of you agree, and I'm so happy and thank you so much for coming.

>> Thank you very much, Andrea, and thank you for your work. You are a convener, as the definition has it, and thank you.

>> Oh, I forgot to tell you about that.

>> We'll leave that for afterwards. (Indiscernible), please.

>> Thank you, Mr. Chairman. Yes. Ladies and gentlemen, I was, during the five years when it was the work of the committee for about this Convention on the Rights of Persons with Disabilities in New York, I was at the delegation of Italy. And after the exposition, Mrs. Placencia, I must give you some information.

The five (Indiscernible) of 2002, 14 countries or 15 of the European Unions decided to leave the committee. Only Italy decided to stay. And I explained it to the other countries that if you go, we stay here to discuss with others about this convention.

After today's -- (Indiscernible) -- we give you the first draft of the convention. As European Union. Okay? Now I listen that the European Commission discuss with the countries about their ratification. It's very strange because the ratification is national business, not European or Commission business.

Okay. I was in China many times. Now, when I go in Italy tomorrow, I will ratify this because it is very strange as it is impossible that this situation will follow. We know, for example, that (lost audio momentarily) -- this is a demonstration that it is not necessary that the Commission discuss about this situation. But every state discuss and decide alone.

Other information, more interesting for you, the new minister of new technologies in Italy will be the former European President of IBM, Mr. Antonio (Indiscernible).

And I think that it is very interesting Mr. Gallegos, that ICT and ITU, send the new minister their documents to discuss with this minister. That is very interesting to these technologies. Your documents to discuss with (Indiscernible) the possibility to have collaboration, a strong collaboration in these fields.

Now I give you only two suggestions deriving from two observations. The first: In the introduction that we have in our invitation, you discuss about the situation that one billion persons have a computer and are connected to Internet. 10% of the world's population are disabled people, but not -- the situation that the 10% of 1 million are disabled people connected with Internet. Because -- because only 130 million are in developed countries, and 520 million are in developing countries. This is the real situation. And in this way, it is important that we use the (Indiscernible) -- governmental organizations, to nongovernmental organizations, organizations to DPOs and, in particular, to families within them are persons

with disabilities.
Families are very important in that we have the more important necessity to activate the (Indiscernible).

And in this way, we can achieve the possibilities to give to persons with disabilities in other numbers these possibilities, these ICT possibilities. Okay.

The last observation is, okay, we have the standardization idea, but the standardization idea without the collaboration between the humanistic and technology is very difficult. Now we have the situation -- strange situation. The technology (Indiscernible). And when a person or others related is very difficult progress. For example, today we listened to many, many new ideas or investigations or others, but you know if these ideas are deriving from real leads or persons with disabilities. Before we must organize the realization of the needs after we can make the investigation. For example, if you give me the possibility to make pictures by, for example, a tone, okay. I can. But I can take (Indiscernible). This is the discussion. The picture is impossible that the person with disabilities, visual disabilities, can use.

I think that every person with disabilities must -- must take the situation without (Indiscernible). I conclude my discussion with this indication. Okay. I think that we can discuss together, tomorrow, for example, about the humanistic side, integrated with new technologies. In this way we can have knowledge of 360 degrees, not 180 degrees. Thank you.

>> Thank you very much, Urban. I will just say two words You are, ladies and gentlemen, suddenly invited to a transformation of a society. The importance of what you are doing here has a fundamental reasoning. If you, with your technology and your capabilities, integrate, permit people with disabilities to integrate to self-sustain, to change, you are having the paradigm shift in society, which is fundamentally why this convention has an importance. And I thank you very much for your presence here today. I believe the toolkit and the inventory will be fantastic instruments, and I agree that -- with Andrea that we should have more meetings of this type. I think it has been a very illustrating and very worthwhile experience for all of us. Thank you very much for your presence here today.

(Applause)

* * *

totally verbatim record of the proceedings.

* * *