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Economic Cooperation

Seminar “Social Inclusion of People with Disabilities through Access to Telecommunications”

15 June 2016

Tacna Military Club, Tacna, Peru

Telecommunications and Information Working Group

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Project presented on the context of 53 APECTEL Meeting

Tacna, Peru
15 June 2016

Summary Report

I. BACKGROUND

According to its mandate, the APEC Telecommunications and Information Working Group (TELWG) "*aims to advance the development of information and communication technology (ICT) infrastructure and services as well as to promote cooperation, information sharing and the development of effective ICT policies and regulations within the Asia-Pacific region*"[1].

During TEL52 Meeting, held on 19-23 October 2015, in Auckland (New Zealand), the Telecommunications Regulatory Agency of Peru (OSIPTEL) presented a project related to the organization of a Seminar in order to exchange experiences and best practices for effective social inclusion of People with Disabilities (PWD) through telecommunications. The results of that project were expected to be useful for all APEC Members, as a contribution of the Peruvian Economy.

The Project was co-sponsored by the following economies: Australia; Japan; the Philippines; Russia; and the United States. The TELWG approved this proposal as a self-funded activity and a contribution of the OSIPTEL.

The Seminar "Social inclusion of people with disabilities through access to telecommunications" was held in Tacna, Peru on 15 June 2016, as part of the activities related to TEL 53 Meeting with the participation of policy makers, regulators and representatives from APEC Economies. It addressed topics related to i) Access to ICT as a fundamental right of PWD; ii) Policies and regulations on access to telecommunications for PWD, iii) Best practices on regulating access to telecommunications for PWD, iv) Achievements, difficulties and challenges for PWD in the APEC Region.

The aim of this report is to compile the presentations made during the Seminar, including its recommendations and outcomes, as a Peruvian contribution to the TELWG.

[1] Telecommunications and Information Working Group, 2016. http://www.apec.org/groups/som-steering-committee-on-economic-and-technical-cooperation/working-groups/telecommunications-and-information.aspx

Source: http://www.apec2016.pe/es/

II. CONTENT

Opening remarks

❖ Welcome and background[2]

The first session was led by Mr Gonzalo Ruiz Díaz, Chair of the Board of the OSIPTEL, and Mr Andrey Mukhanov, Chair of the Telecommunications and Information Working Group (TELWG).

Chair Ruiz welcomed TELWG Members representatives, observers and guests to the Seminar "Social inclusion of people with disabilities through access to telecommunications".

After that, he started his remarks, recognizing that the "*United Nations Convention on the Rights of Persons with Disabilities*" established that persons with disabilities have the right to live independently and participate fully in all aspects of life. In order to fulfill this mandate, States Parties shall take appropriate measures to ensure to PWD access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services available to or provided to the public, both in urban and in rural areas.

Chair Ruiz also highlighted the APEC Leaders Declaration from Manila (November, 2015), as a relevant agreement because Economies shall "*take action to fully realize a stable, integrated, and prosperous community in the Asia-Pacific, in which all our people can enjoy the benefits of economic growth and technological progress. Our enduring commitment will underwrite the peace, stability, development, and common prosperity of the Asia-Pacific*."

[2] Based on the speech made by guest Economy representative Mr Gonzalo Ruiz Díaz, Chair of the Board – OSIPTEL (Peru)

Leaders in Manila also "*recognized the significance of enabling the full participation of all sectors and segments of our society, especially women, youth, people with disabilities, indigenous peoples, low-income groups, and micro, small and medium enterprises (MSMEs), to achieving inclusive growth*".

Source: OSIPTEL

In order to contribute to the mentioned United Nations Convention's Mandate and APEC Leaders Declaration, it was said that the principal goal of the Seminar was to share experiences and exchange information regarding accessibility for PWD through information and Communications Technologies (ICT), so Economies could be in a better position to work on this matter.

On the other hand, it was reminded that APEC Telecommunications and Information Working Group Strategic Action Plan 2016-2020, agreed that ICT "*has become an integral part of modern life, and has revolutionized our economies and our societies*". At this matter the TELWG agreed that "*ICT should be used as an instrument for sustainable economic development and social integration": working for "better and safer communities for the youth, vulnerable and disadvantaged groups so as to provide opportunities to improve their social and economic welfare*".

Afterwards, Mr Ruiz explained that the Seminar on "Social inclusion of people with disabilities through access to telecommunications" consisted on a four panel program and the first one dedicated to the discussion of policies and guidelines for access to telecommunications and ICT for PWD. The following panels would address the matter related to access to ICT for this sector of vulnerable population, organized by type of impairment: visual, speech and hearing, and physical. These panels would be summarized on a segment in which moderators of such panels would present the conclusions of each debate.

Finally, the representative of the OSIPTEL remarked that it was expected that the results of this Project would be beneficial for TEL Economies and participants of the Seminar could take advantage of the contributions that would be presented.

❖ **A contribution for APEC work on accessibility to ICT for people with disabilities[3]**

On behalf of APEC Telecommunications and Information Working Group (TELWG), Mr Andrey Mukhanov, TEL Chair, congratulated Peru on the very successful organization of TEL53 and for this Project in particular.

He said that the question over social inclusion of PWD has had an important role in the international practice and in our lives. It is a topic discussed in the United Nations, OECD, ITU and other international organizations, including APEC.

The TELWG traditionally pays attention to this topic, as ICT is one of the main instruments for social inclusion and integration of PWD in order to get their lives easier. They can use ICT in almost the same scale and enjoy the possibilities that they provide as persons without disabilities.

Mr Mukhanov pointed out that there is multiyear project that deals on the topic of ICT disabled people in TELWG, "ICT applications for people with special needs, aged and handicapped". In 2006, the TELWG held a workshop on APEC e-inclusion bridging the digital divide for this group of people and now there is this seminar "Social inclusion of people with disabilities through access to telecommunications".

Source: OSIPTEL

He remarked that APEC pays particular attention to this topic through other forum as well: the Group of Friends on Disabilities (GOFD), which was established on 2015, in the Steering Committee on Economic and Technical Cooperation, as a result of a high level APEC meeting.

"*This Seminar will become a valuable contribution into the first priority area of TEL Strategic Action Plan 2016-2020 for the participation of persons with disabilities in the Internet Economy*". The TELWG reaffirms the need to work on this direction, sending this seminar materials to GOFD Chair and its members for consideration, he concluded.

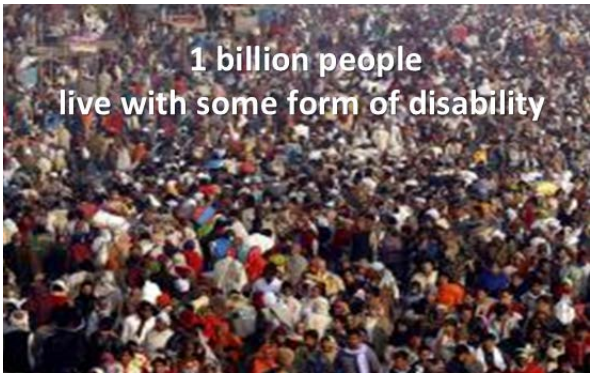
[3] Based on the speech of TEL Chair, Mr Andrey Mukhanov (Russia).

Policies and guidelines for access to telecommunications and ICT for people with disabilities

❖ *ICT accessibility policies and standardization issues*[4]

According to World Health Organization (WHO) and the World Bank Report on Disability, over 1 billion people in the world live with some kind of disability. In addition, many countries have aging population, so they have an increasing number of aged related disabilities to deal with. For that, the challenge is to connect all people in the world without any discrimination, including PWD.

WHO statistics indicates that over 1.1 billion of young people worldwide are at risk of hearing loss due to unsafe listening practices. The International Telecommunication Union (ITU) worked with WHO raising awareness about safe listening devices among manufacturers of personal devices. ITU also set up a technical working group for the development of norms and standards for safe listening devices.



Source: Presentation made by speaker during Seminar

ICT are essential for social inclusion and economic development, enabling PWD to live independently, accessing to health, education, public services and job market, as people without disabilities do; however to achieve all this, ICT should be accessible.

United Nations Convention on the Rights of Persons with Disabilities (CRPD), ratified by 163 countries and signed by 25 countries, includes provisions related to the right of PWD for their inclusion to society without discrimination. Such Convention has been either signed or ratified by all APEC Economies. Peru was one of the first countries in the world that became a Party to this Convention in 2008.

Two of the key CRPD provisions related to ICT accessibility are in the article 9 and the article 30. ICT accessibility for the first time has been identified as an integral part of accessibility rights.

[4] Based on the presentation made by Roxana Widmer-Iliescu, Senior Programme Officer - Digital Inclusion, Special Initiatives Division (SIS) – Telecommunication Development Bureau (BDT), International Telecommunication Union - ITU

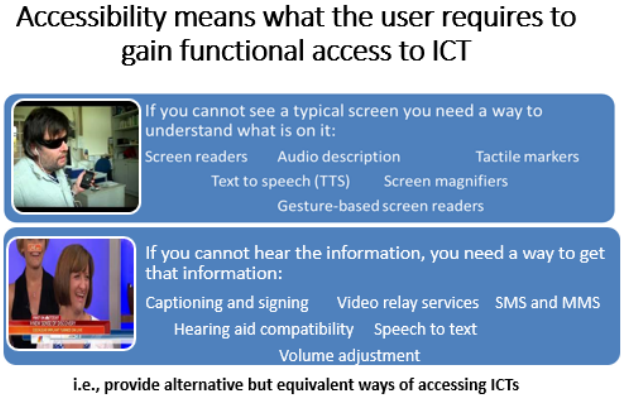
The goal of accessibility is to enable PWD to live independently and participate fully in all aspects of life. The article 30 requires television programs to be produced in accessible format.

The ITU sector related with standards (ITU-T), created in 1991 the first international Standards Body to address accessibility issues. Before 1994, when the international text telephone standard V.18 was published, people were not able to transmit messages from a country to another. There is also another standard issued by ITU-T E.161, related with key “5”, to assist blind and visually impaired people and others to facilitate dialing under low light conditions.

Therefore, standards are very important to work with PWD, taking into consideration all types of disabilities so services and features may be usable for this vulnerable population. ICT accessibility is all about ensuring that PWD can use ICT the same as person without disabilities. That means that it is necessary to remove barriers.

A blind person has to face a barrier to see a user interface that requires vision, therefore he needs an alternative way. One of these ways should be the sound, he will need Text to Speech (TTS) to read along any information converted by text, Gesture-based screen reader on a smartphone to “see” what icon he is pressing.

Applications to overcome blind impairment to see screens, navigate websites, read electronic books, check e-mails, are Screen Readers (for computers and mobile phones), Gesture-based screen readers, tactile markers, adjustable font sizes, audio description, among others.



Source: Presentation made by speaker during Seminar

A blind person who wants to use a smartphone or tablet faces the lack of tactile markers of fingers on icons. Similarly, the person wouldn’t be able to see the flashing battery sign to know that the battery is low. So icons that provide audible feedback are required. In case of watching TV, the blind person face different barriers, needs a remote control with audible tactile markers and audio description of the program.

On the other hand, a deaf person will communicate by signing, SMS, MMS, visual or vibrating alerts. He/she requires any video captioning and signing. To provide

accessible mobile telephony these people can use text messages. In case of video relay services, in some countries you can call a person who can do this as an interface between PWD and the person without disability and enable this service.

In the case of limited mobility, where persons cannot use limbs, flex fingers, press buttons on a phone, or a mouse on a computer, the solution is to employ voice recognition, auto text, anti-shake apps, adapted keyboards, well designed remote controls, etc.

Accessibility open doors to PWD for inclusive education, employment, as well as participation in social and political life, including emergency services. Addition to service the needs of PWD, accessibility can help aging population, emigrants, as well as people who are illiterate.

It is important to create awareness about the need to protect ICT accessibility for public sector, broadcasters, industry, private sector, etc. Also, it is recommendable to promote ICT Accessibility to industry makers and content providers such as making accessible content and devices (public and mobile phones, TV sets) available.

From economic and social perspective, there is one billion of PWD and another one billion users to become disabled due to misuse of listening devices plus the increasing aging population. So there are too many people in the world that need accessible features to access information for education and participation in the society.

There is a worldwide Convention of Rights of Persons with Disabilities, ratified and signed by almost all countries in the world, which committed to create and put in place ICT accessibility policies and regulation to enable PWD to promote, protect and ensure the full and equal enjoyment of all human and fundamental rights, including access to ICT by all PWD.

- ***Technologies and ICT are key to improve the life of people with disabilities***[5]

Technologies and ICT are key to improve the life of PWD. It is important that all APEC meetings provide a space for Economies to discuss issues related with this relevant issue, as a key element and a key policy. For example, an APEC forum that is working on this matter is the Group of Friends on Disabilities (GOFD), where you can express concerns, projects and programs.

In Peru, there is a General Law for People with Disabilities – 2012, which is aligned with the United Nations Convention on the Rights of Persons with Disabilities. This law approaches disabilities in different perspectives, considering disability not as a medical issue, but a social issue. If PWD get an opportunity, they could be able to accomplish all activities they could need, and that is something that is necessary to promote with the support of technology.

[5] Based on the speech of Mr Fernando Bolaños Galdós, Vice Minister of Vulnerable Populations and Chair of National Council for the Integration of Persons with Disabilities – CONADIS (Peru)

There are four major concerns that PWD have: education, health, job opportunity and accessibility in different ways.

In the case of education, most of the children with disability in Peru do not have enough opportunity to study beyond basic education, so technologies can help to close this gap in order to provide for them, the opportunity to continue secondary and college levels of education.

Source: Ministry of Women and Vulnerable Populations (http://www.mimp.gob.pe)

For health, the starting point is to certificate PWD so they can have access to different services in different areas. This certification has to be available on line so different sectors in Peru can review this information.

Since PWD do not have enough education, it is very difficult to be competitive when looking for a job. Recently, the Ministry of Labour in Peru issued a Law to improve telework, so with the participation of the private sector, it is expected that in the future, more PWD would be working at home, benefiting from the use of technologies.

Finally, accessibility implies challenges mostly in case of physical impairment. One example is the case of public transportation. Most of the cities in Peru do not have facilities for PWD. For that reason, the extension of Internet and ICT services can reduce the gap and bring more opportunities for this people in order to work, study and access to public services.

In terms of regulation, Peru has advanced significantly to expand the services for PWD. In addition to the General Law for People with Disabilities, a Law issued in 2009 promotes the access to Internet for PWD through the *"Internet cafes"*. In 2011, a Plan for Digital Agenda was approved including the matter for PWD in this agenda.

In that sense, we need to use more the technology in order to bring new services for this vulnerable sector. Peruvian Economy has different challenges and it is working on some new regulation such as a special regulation for sign language for deaf people, particular discounts for mobile services and alert system for emergencies, among others.

Considering that technologies and ICT are key to improve the life of PWD, there are many opportunities and challenges that require a joint work of the public sector (at different levels), private sector and civil society organizations.

❖ ***Accessibility to ICT policies for people with disabilities in Mexico***[6]

As the Mexican Body for telecommunications and broadcasting, the Federal Telecommunications Institute (IFT, for its initials in Spanish) has been aware and specially committed to the issues related with PWD. Since its creation a few years ago, the IFT has worked on social inclusion for telecommunications and broadcasting sectors dealing with the rights of users and audiences. This Entity monitors that broadcasters, operators and manufacturers comply with standards that have been issued for PWD.

Important broadcasting guidelines mandatory for all broadcasters are in a process of delivery, containing specific points about accessibility, such as captions, sign languages for some live broadcasting programs, as for example news; while in the case of telecommunications, the IFT is empowered to issue mandatory regulation for operators and manufacturers of telecommunications devices.

The Mexican Telecommunications Broadcasting Law, issued in 2014, established some specific rights for PWD. At the matter, they have the right to have accessible contract forms, to have telecommunications devices with accessible features, to have accessible public facilities at telecommunications operator's office, to receive attention from specially trained personal, to receive specific telephone assistance from operators and to have accessible websites.

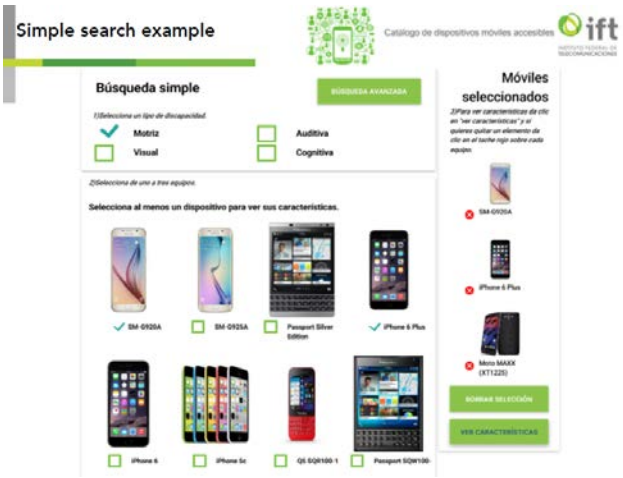
Since December 2015, every public agency in Mexico has the obligation to have an accessible website. They have all this year to comply with that mandate and the IFT was the first public entity that has complied with this guideline, having an accessible website, in English and Spanish.

Regarding accessible websites, Internet is a key part in the accessibility issue. The ITF has developed an application that can be accessible for people with visual or hearing impairments. A "Catalogue of Accessible Mobile Devices" has been developed considering the standards made by the Global Accessibility Reporting Initiative, which has specific features for telecommunications devices, according to specific disabilities. At this time, the Catalogue only includes information of smart mobile phones, but in the future it is expected to consider also tablets and reading devices.

The Catalogue available at the IFT website contains specific features (hardware and system information) of mobile devices according to the kind of disability: mobility/Dexterity, vision, hearing/speech, and cognitive. For each one, there are a

[6] Based on the presentation made by Mr Miguel Quintero Rivero, Director of Multilateral Relations, Federal Telecommunications Institute – IFT (Mexico).

number of features defined and listed. For every device offered in Mexico users can find out if it complies or not with the specific features.



Source: Presentation made by speaker during Seminar

The Catalogue considers a simple and an advanced search. The application allows to choose the kind of disability and the device model to check if a specific one complies with determined features. The tool serves as an enhancer for manufacturers. Since they are compared to each other, they are encouraged to improve their devices in order to include additional features than competitors have.

Since its launch in 2015, the web site received more than 3000 visits. Actually, IFT is working on accessibility guidelines for broadcasting and also reviewing and issuing accessibility guidelines issues to apply for both telecommunications operators and manufacturers of telecommunications.

❖ ***Session remarks***[7]

For Regulators, one of the main objectives of regulation is accessibility to services. This objective overlaps with another public policy like the inclusion, because accessibility is related with social inclusion. There are some discussions about considering regulation for PWD and vulnerable population as regulation itself.

Mexican presentation shows how private sector can contribute to social objectives related with accessibility. On the other hand, Peruvian presentation mentioned the importance of stakeholders, due that public entities cannot make the job isolated, and the participation of operators and manufactures is also required.

According to that, the Mexican representative indicated that at the beginning, it was difficult for telecommunication operators in Mexico to accept the regulation. On the other hand, manufacturers were really interested on collaborating with the Regulator, providing information and updating their devices to accomplish the features.

[7] Based on the speech of moderator Mr Gonzalo Ruiz Díaz, Chair of the Board – OSIPTEL (Peru) and speakers

On this point, the Chair of the Board of OSIPTEL mentioned a Peruvian regulation proposal that comprises a special discount in the mobile service tariff for this sector of population. Regarding the analysis made for this regulation, it was found that PWD has low access to ICT for several reasons, one of them, but not the only one, related to tariffs. The provision of this service represents an opportunity for private sector, in order to develop special plans for them.

On the other hand, the ITU representative indicated that accessibility for PWD is not only a social gesture for private sector, and it could also be seen as a business opportunity. When ITU began its work, they were thinking they had to advocate why the operators were supposed to provide special devices for PWD. Then later, they discovered that this was a business opportunity for some of the operators who realized that 50% of the world population can be targeted.

Access to Telecommunications and ICTs for people with visual disability in APEC Region

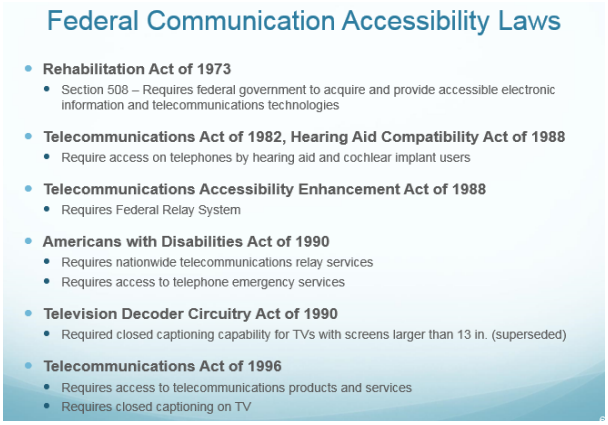
❖ *Perspectives and key regulatory efforts in the United Sates to increase accessibility for persons who are blind or visually impaired*[8]

The Federal Communications Commission (FCC) is motivated by the principle that all citizens, including PWD, should have access to robust telecommunications services; thus, accessibility is a top priority.

The FCC's overarching policy perspective is based on the idea that the competitive marketplace typically addresses consumer needs, but this does not often occur for PWD, for several reasons. Each specific disability market is too small to impact the market trends. For example, approximately 54 million adults (22% of the total U.S. population) that have some sort of disability, but only 4% are blind or have some kind of visual impairment. In addition, PWD often have lower incomes, which means they have less purchasing power to influence the market. Similarly, the need for adaptive equipment discourages off-the-shelf purchases for this group of individuals, again diminishing purchasing power.

In that sense, because traditional market forces have not been responsive to the needs of this group, the government has stepped in to adopt laws and regulations to ensure telecommunications accessibility.

[8] Based on the presentation made by Ms. Ena Dekanic, Attorney-Advisor, International Bureau, Federal Communications Commission - FCC (the USA)



Source: Presentation made by speaker during Seminar

To this end, throughout the 1970s, 1980s, and 1990s, the federal government adopted a patchwork of communications accessibility laws, primarily designed to ensure access to traditional telephone and television services; however, these laws left some gaps, and they were unable to keep up with the rapid technological changes of the past decade.

Therefore, in October 2010, Congress passed the 21st Century Communications and Video Accessibility Act (CVAA), one of the most significant and comprehensive accessibility laws in the United States. The CVAA contains groundbreaking protections to enable PWD to access the latest technologies. Notably, one of the key provisions of the CVAA orders that "*advanced communications services … shall be accessible to and usable by individuals with disabilities, unless … not achievable*". These services include voice over Internet Protocol (VoIP) telephone service, electronic messaging (including SMS, e-mails, and instant messaging), and interoperable videoconferencing.

Over the past two years, the FCC has been implementing various provisions of the CVAA. For example, the FCC has addressed the issue of Internet browsers on mobile phones.

In the process of implementing the CVAA, the FCC came to the conclusion that failure to ensure the accessibility of Internet browsers would prevent consumers from successfully accessing underlying advanced communications services, such as e-mail. In April 2013, it adopted rules to clarify that Internet browsers built into mobile phones must be accessible by individuals who are blind or have a visual impairment.

The FCC has also worked to increase accessibility through its video description rules. Video description is an audio narrated description of a TV program's key visual elements, inserted into natural pauses in dialogue. The current rules require 4 hours per week of video described primetime and/or children's programming, which applies to the top 4 national broadcast networks in the top 60 TV markets and the top 5 cable channels.

Since the implementation of these rules, the FCC has found that the availability of video description has provided substantial benefits to consumers with visual impairments, allowing them to get engaged to TV programming. As a result, the FCC has been exploring the possibility of expanding video description. In March 2016, the Commission proposed new rules that would increase the required amount of video described programming, as well as the number of networks subject to the rules. Also, the Commission proposed a “no-backsliding” rule, which means that once a network becomes subject to the video description rules, it must continue complying with the rules even if it falls out of the applicable rankings.

In addition to video description, the FCC has recently implemented provisions of the CVAA to enable individuals who are blind or visually impaired to have greater to programming on a wide range of video devices, such as smartphones, laptop, tablets, etc. Current rules mandate that video devices must be able to provide video description through a secondary audio stream. Additionally, starting in December 2016, video devices must also have an accessible user interface that includes essential functions such as turning the power on/off, controlling the volume, channel selecting, etc. Also, on-screen text menus must be audibly accessible, and there must be a simple mechanism to access the secondary audio stream (video description) via button, key or icon.

Moreover, the FCC has taken steps to ensure that people with visual disabilities have access to critical emergency information. In 2013, it adopted rules to make televised local emergency information more accessible. If emergency information is provided in the video portion of a newscast, it must also be accessible through an aural description in the main audio. If emergency information comes up during regular programming, such as through a screen crawl, then it must be accompanied by an aural tone to alert persons with visual disabilities to switch to the secondary audio stream for more information.

Additionally, as more consumers began to use other devices for watching television, the FCC expanded its rules to include “second screens.” Emergency information must be made accessible on secondary audios streams on “second screens” like laptops, smartphones, and tablets when the subscription television providers allow consumers to access linear TV programming over their networks using an app on these devices.

Source: Presentation made by speaker during Seminar

The FCC has a dedicated Disability Rights Office (DRO), which handles all disability-related matters and ensures that all policies and regulations support the goal of increasing accessibility. In December 2014, the FCC also established a new Disability Advisory Committee (DAC) that brings together stakeholders from the public and private sector, and from the disability community itself, to develop recommendations and continue the dialogue about these issues.

Finally, the FCC has established an Accessibility Clearinghouse (https://ach.fcc.gov/), as a one-stop-shop website with resources for PWD, organized by categories of disabilities.

❖ ***Proposal of special mobile telecommunication offer for people with disabilities in Peru***[9]

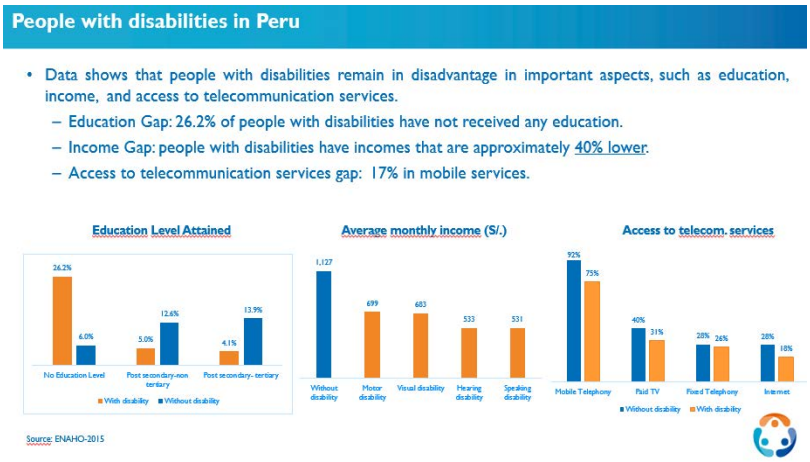
The Telecommunications Regulatory Agency of Peru - OSIPTEL has a legal instrument called "Price Setting General Rules" that sets the rules for telecommunication operators for the application of tariffs, plans, special offers, rebates and discounts. The main concern is to keep the public informed about the different prices and plans put into place. This rule has been modified several times to improve the provisions and give more transparency in the process of price setting by telecommunication operators.

Regarding the general regulation for PWD, in 2006 was declared the 2007-2016 period as "the decade for people with disabilities in Peru" with the objective of generate awareness about this issue at a national level.

According to national statistics, there are more than 1.5 million people with some kind of disability in Peru. Data shows that PWD have disadvantage in important aspects of their social interaction, such as education, income and access to telecommunications services. At the matter, 26.2% of PWD have not received any education, their incomes

[9] Based on the presentation made by Ms. Claudia Barriga Choy, Regulatory Policies and Competition Office - OSIPTEL (Peru)

are approximately 40% lower and compared with people without disability and there is a gap to access to telecommunications services, especially to mobile services.



Source: Presentation made by speaker during Seminar

Considering this situation, in order to provide more facilities for PWD in the telecommunications sector, the OSIPTEL began to carry out some studies in order to find the plans and measures adopted in other countries.

At an international level, different countries have adopted policies to promote the existence of affordable telecommunication services for PWD, through public or private initiatives, addressing specially designed devices, specialized services and price discounts for devices and plans.

In the South American region, a very common practice is to adopt tariff discounts for this vulnerable sector. For example in Argentina, one of the telecommunication operators offers a 20% discount. In Bolivia, has established a “supportive price” in the mobile market. In Ecuador, there is a general 50% discount applied to various utilities (water, electricity, etc.)

Taking into account these experiences, the OSIPTEL is exploring the possibility to implement a similar measure in Peru by a special telecommunication offer for PWD. At the matter, there are no specific rules for access to telecommunication services for PWD in Peru.

Focusing particularly on mobile service for its significant growth in coverage and penetration during the last years, and being one of the most used services by PWD, the OSIPTEL proposal is to establish a 40% price discount to any plan for this service, according to their lower incomes. The discount will apply to only one mobile line contracted by a person with disability who will require to be accredited by a credential, provided by national institutions.

Source: Presentation made by speaker during Seminar

The proposal was published in 13 June for public consultation for 30 days. After processing the comments that may be received and once approved the final version, the rule could be implemented by operators in two months.

The proposal includes a second alternative to the provision, establishing an obligation for telecommunication operators to design special plans for people in this vulnerable situation, instead of providing a general discount for all the plans they have. This second alternative has been implemented in other countries.

The OSIPTEL proposes the first alternative because when both alternatives were analyzed, it was found that implementing a general discount for all the existing plans would be profitable for new users and current users, without affecting the telecommunication operator's incomes.

❖ ***Access to telecommunications and ICT for visually impaired people in Russia***[10]

The United Nations Convention on the Rights of Persons with Disabilities is the first international legal instrument on this century. A very relevant point that this document contains is the agreement of society for inclusion of this deprived social group.

On the other hand, accessibility of information is understood as a right of everyone, regardless of the physical and cognitive difficulties that he or she may be experiencing during temporary or chronical disorders or diseases.

Nowadays, ICT is a tool for the promotion of human rights, providing the ability to overcome poverty and better access to education for all, to encourage employment and generate inclusive social and economic development.

[10] Based on the presentation made by Ms. Maria Bolshakova, Specialist on International Legal Protection, Radio Research and Development Institute – NIIR (Russia)

Source: Presentation made by speaker during Seminar

The background of this issue is a scientific and technological revolution. In the world, there are more than 3.2 billion people that uses Internet and 4.5 billion users of mobile phones. These are no longer pieces of luxury, but means of communication. In recent years, Internet and mobile telephony for PWD is becoming a global trend.

There is a growing understanding that ICT for PWD is not only important for social integration but also significant operational factor to enhance the human potential of individual. From the technical point of view, this problem is solved in two ways, first by using the adapted technologies, second by adapting the design of that products. Both methods are constantly being improved and implemented.

In the case of adapted technologies and programs aimed for facilitating access to telecommunications and ICT for visually impaired people in Russia, “Technology Opportunities” is a non-state Development Center for social innovation that carries out programs for support of social projects to solve the problems of interest of this sector of population. At the matter, the topic discussed during this seminar is a real opportunity to make business.

The five action lines of Technology Opportunities Center are:

- Support of business projects in the field of problem solving for PWD.
- Connected with educational programs, giving necessary knowledge and skills for the elaboration and development of projects in the field of technologies for PWD.
- Focus on studies in the field of socialization of PWD. Science and technology development of interest of citizens with especial needs.
- Holding international and Russian conferences, forums, roundtables, seminars and lectures on the topic of disabilities.
- Facilitate the development of legislation in the field of PWD socialization. Supporting industry of accessible technologies in Russia and the development of creativity.

A few examples of successful implemented programs:

Lexy is a solution for blind and deaf blind people. Considering the complexity or impossibility to read information using screen reading software, the fact that not all

blind persons know braille scripts and current picture cognition system don't recognize perfect pictures screens, this connection will guarantee to overcome difficulties to access Internet for controlling home appliances.

NexTouch is a software/hardware system for PWD. Through this solution the information is transmitted to hearing aids or hearing impaired persons through an induction system. Dedicated software takes into account specifics of impaired persons in zoom in pictures, changes contrasts of the text and converts information into voice. Software can recognize a wheeled chaired user to move active area of the working space. A wide angle video camera allows communicating operators with the citizens, including persons with hearing or visual disabilities, by sign language and wheeled chaired users.

Source: Presentation made by speaker during Seminar

The third project is *Luwrain Adapted Environment,* which main goals are making personal computers accessible to people with visual impairment who are unable to use them for any reasons, offering a reliable and high performance for advanced users to solve a number of basic and specific tasks. Providing a platform for development and distribution of applications, designed especially for people with visually disabilities.

The Super-Books Project is for children with special needs. It is a new form of representing knowledge for children of all ages and physical and intellectual abilities. The project team has developed interactive laboratory classes in physics and chemistry for education from home for children with disabilities, based on Apple iPads.

❖ ***Session remarks and Q&A***[11]

The Peruvian efforts to address the income gap, the Russian projects that address specific problems for different disabilities and the American comprehensive approach to disabilities shown during this panel have provided a comprehensive view of regulatory and policy measures that can be done, considering the gaps that PWD have to face.

[11] Based on the speech of moderator Mr Miguel Quintero Rivero, Director of Multilateral Relations, Federal Telecommunications Institute – IFT (Mexico) and other interventions.

In U.S. case, the FCC has engaged industry and all other stakeholders. For all the regulations that were mentioned, there was an open comment period, where rules are proposed and industry, individuals, consumers, etc., can write to FCC and provide comments or subjection changes to the rules that are taken into account before adopting the final rule. This policy applies to all FCC regulation and not only to disability issues.

The FCC has also the new Disability Advisory Committee, where industry and other stakeholders can provide theirs comments as well.

Access to Telecommunications and ICTs for people with speech or hearing impairment in the APEC Region

❖ *Australia National Relay Service*[12]

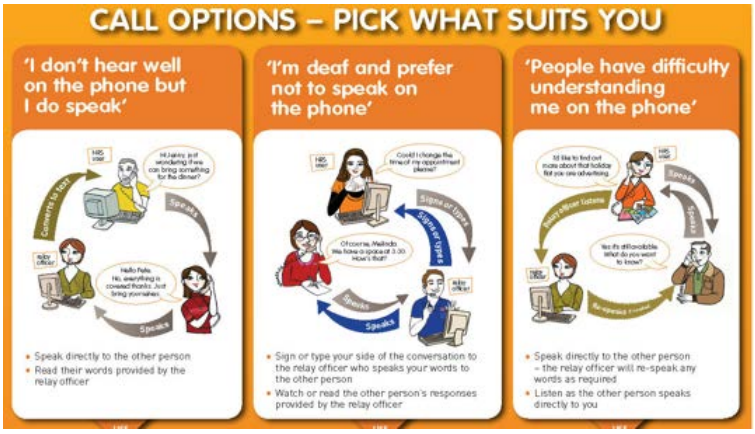
As part of the legislative background, ensuring access to telecommunications for citizens who are deaf or have a hearing or speech impairment has been a focus of the Australian Economy for many years.

There is a universal service regime to ensure that all Australians have reasonable access to standard telephone services on a comparable basis, regardless of where they live, work or their communications needs.

As part of this regime, there are arrangements to provide affordable access for Australians with a disability. This includes access to the Relay Service (established 20 years ago), access to equipment required to use the Relay Service such as teletypewriters (TTY) and information and training initiatives to assist users to enjoy the benefits of telecommunications.

The National Relay Service (NRS) allows people who are deaf or have a hearing or speech impairment to access a standard telephone service or an equivalent service. The NRS enables communication between these groups and the wider community. The NRS enables users to make and receive personal or business calls independently.

[12] Based on the presentation made by Mr Joseph Mc Carroll, Senior Policy Officer, Department of Communications and Arts (Australia)



Source: Presentation made by speaker during Seminar

For people who do not hear well on the phone but do speak, there is a Caption Relay and Speak and Read services. For people who are deaf and prefer not to speak on the phone, there are Video Relay services, as well as Talk and Read services. For people who have difficulties making their selves understood on the phone, there is a Speak and Listen service and finally for all of this people there are Internet Relay and SMS Relay Services.

The NRS is available Australia-wide, 24 hours a day, seven days a week, with the exception of the video relay option.

All NRS users can make an emergency service call to access police, fire and ambulance services – these calls are given prioritized access. There are two numbers people can use 106 – the TTY text service and "000" which is the standard number across Australia for emergency services.

The Australian Economy delivers the NRS through contractual arrangements. There are two components of the Service:

- A Relay Service that relays calls between the deaf, hearing and/or speech impaired communities and the broader community, and,
- An outreach service that promotes community awareness of the Service, delivers training on how to use the service and undertakes stakeholder engagement and research to improve the service.

The NRS is funded by a levy on eligible telecommunications carriers.

For the case of new developments, in Australia there is an emphasis on continuing to improve the NRS to provide a range of service options and to evolve with the introduction of technologies and changes to how people with disability use technology.

Over recent years, these developments have allowed the NRS to introduce new service options, such as SMS relay, captioned relay and video relay. These options provide greater flexibility to users and better cater to different communications needs.

For example, video relay allows users who use sign language to communicate in their preferred language.

Source: Presentation made by speaker during Seminar

In 2014, the NRS App was launched and quickly became popular with NRS users. The App allows users to access Internet Relay, Speak and Listen, Captioned Relay and Video Relay, with additional features for Internet Relay and Speak and Listen only available through the App. A short 2 minute video about the App and some of its features, such as creating customized phrases for regular use and the option to send your GPS location can be found at the following link:

https://www.youtube.com/watch?v=jPsRMeSkvPs

As opportunities and challenges, the introduction of new Relay Service options in recent years has improved the service for users but has also led to increased demand for the NRS.

There has also been a slower-than-expected decline in the use of older equipment, such as TTYs. TTY equipment is much more limited compared to newer technologies and may not continue to be available into the future.

At the same time, advances in communication technologies have provided a number of mainstream products and services with accessibility features that can benefit PWD.

Devices such as tablets and smartphones can be of great benefit, with a range of apps and other software available to address accessibility barriers to communication. For example, Skype and FaceTime allow video calls that can be used to communicate in sign language.

Encouraging the adoption of mainstream service options, where possible, will provide substantial opportunities to improve the overall quality of life for PWD and reduce the reliance on the NRS.

However, it may not be possible or preferable for all users to adopt mainstream technologies due to issues such as affordability, digital literacy and access to the internet.

Australia is interested in learning more about the Relay Services established in other economies and strategies to encourage users to make the most of the benefits that new technologies can offer.

❖ ***FCC regulatory efforts to improve accessibility for persons who are deaf or have hearing or speech impairments*** [13]

In addition to regulatory efforts designed to improve accessibility for persons with visual disabilities (discussed previously), the FCC has also taken steps to ensure accessibility for individuals who are deaf, hard of hearing, or speech disabled. For example, one of the FCC's longest-standing initiatives is the Telecommunications Relay Service (TRS), a telephone service that allows persons with hearing or speech disabilities to place and receive telephone calls. Calls are facilitated by a designated operator called a Communications Assistant (CA). TRS providers (generally telephone companies) are compensated for the costs of providing TRS services from a state or federal fund, at no cost to the TRS user.

There are several different kinds of TRS, such as:

- Traditional text-to-voice service using a teletypewriter (TTY).
- Voice Carry Over, which allows a person with a hearing disability, but who wants to use his own voice, to speak directly to the called party and then receive responses in text from the CA. Similarly, Hearing Carry Over allows persons with speech disabilities to listen to the called party and type their end of the conversation.
- Speech-to-Speech Relay Service, used by individuals with speech disabilities, involves specially trained CAs who understand speech disorders and repeat what the caller is saying in a way that makes the caller more easily understood by the called party.
- Another kind of TRS increasing in popularity in recent years is the Video Relay Service (VRS), an Internet-based form of TRS that allows persons to communicate with the CA in sign language using video conferencing equipment, allowing conversation to flow much more quickly. VRS is not specifically required by the FCC, but for those operators who choose to provide it, the FCC requires that they do so 24 hours a day, 7 days a week.

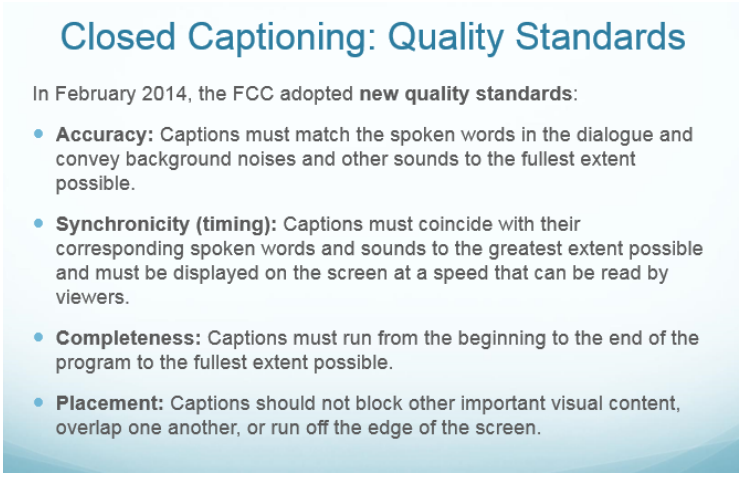
In fact, the FCC has adopted minimum service standards for all the types of TRS. For example, TRS providers have to maintain strict confidentiality for all conversations, which have to be relayed in real time. Additionally, TRS providers must make best efforts to accommodate a caller's requested CA.

Aside from TRS, another important accessibility initiative is closed captioning. FCC rules generally require closed captions for all English, Spanish or bilingual television programming on screens larger than 13 inches, with a few exceptions.

[13] Based on the presentation made by Ms. Ena Dekanic, Attorney-Advisor, International Bureau, Federal Communications Commission – FCC (the USA)

As a result of the CVAA, the FCC has expanded its captioning requirements to other types of video devices.

Moreover, new FCC rules also require captioned programs shown on TV to be captioned if re-shown on the Internet.



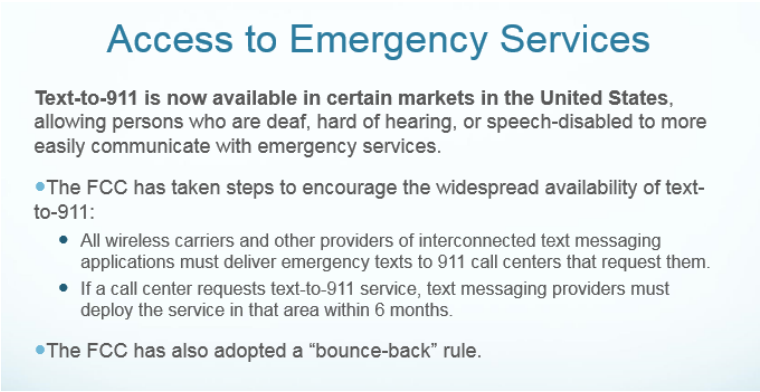
Source: Presentation made by speaker during Seminar

Additionally, in February 2014, the FCC adopted new quality standards for closed captioning. To the fullest extent possible, captions must demonstrate: **accuracy** (captions must match spoken words in the dialogue and convey background noises and other sounds), **synchronicity (timing)** (captions must coincide with corresponding spoken words and sounds), **completeness** (captions must run from the beginning to the end of the program), and **placement** (captions should not block other important visual content, overlap one another, or run off the screen).

FCC rules also require broadcasters and cable TV operators to make local emergency information accessible to persons who are deaf or hard of hearing.

Any emergency information provided in the audio portion of TV programming must be provided by closed captioning or through some other acceptable method of visual presentation, such as screen crawls or scrolls.

In addition to access to emergency information, the FCC also seeks to ensure that persons who are deaf, hard of hearing, or speech disabled have access to emergency services. For example, the FCC has taken steps to encourage the adoption and availability of Text-to-911 services. According to current FCC rules, if a 911 call center requests Text-to-911 service, then any wireless carrier or other provider of interconnected text messaging services is obligated to provide that service. Moreover, if a call center requests the service, the text message providers have to provide it within six months.



Source: Presentation made by speaker during Seminar

The FCC has also adopted a "bounce-back" rule, which means that if a consumer tries to send a text to 911 where the service is not yet available, the carrier is obligated to send back an automated "bounce-back" message advising the consumer to contact 911 by alternative means.

The Hearing Aid Compatibility Act of 1988 requires the FCC to ensure that all wireline telephones manufactured or imported for use in the United States, as well as all "essential" telephones (such as public and emergency phones) are compatible with (do not cause interference with) hearing aids and cochlear implants. In 2003, the FCC expanded its rules to apply to wireless phones, and in November 2015, the FCC again broadened the rules to include IP-based communications such as VoLTE.

Finally, the FCC has established certain institutional mechanisms to improve accessibility for persons with hearing or speech disabilities. In June 2014, the FCC established a first-of-its-kind American Sign Language (ASL) Consumer Support Line, which allows FCC staff to communicate directly with consumers through a video connection. Direct video communications have several benefits, including improved communication and increased career opportunities, as well as cost savings due to the replacement of three-way interpreted calls with two-day direct calls.

In August 2015, building off of the success of the ASL Consumer Support Line, the FCC announced that it would establish a new Open Source Video Access platform (currently still under development) that will enable all citizens who are deaf, hard of hearing, or speech-disabled to communicate directly not only with the FCC, but with all other federal agencies and with participating businesses.

- ***Access to Telecommunications and ICT for people with hearing impairment in Peru[14]***

According to the People with Disabilities Census (Peru, 2012), 43% of the total of populations that present any disability do not have access to telecommunications services. In addition, there are 532,000 people with hearing impairment in Peru.

[14] Based on the presentation made by Ms Isabel Rey Clemente, President of Peru Deaf Rights Foundation (Peru). Representative for LATAM of the Word Association Signs Languages Interpreters

Regarding access to information, the first rule was the Radio and Television Law, published in 2004, which specifies that at State Channel, educational, informative and cultural programs should include signs language interpreters or texts, so people with hearing impairment can access to information. Unfortunately, some years passed and no sign languages interpreters were viewed at State Channel.

The UN Convention on the Rights of Persons with Disabilities in 2007, specifically the Article 21, helped organizations for people with hearing impairment to make efforts for implementing the interpretation services in television. The first media that established interpreters was the Congress Channel in 2007, followed later by broadcasting channels. This media implemented sign language interpretation during newscasts once a week. Even though the law establishes that interpretation services should be increased gradually, still are pending such services in cultural programs that deaf community claims.

Some information from public and private entities were gradually accessible on television and were implemented during the last two years (Examples on slides). The amount of information accessible for deaf community through theses means is not significant.

Source: Presentation made by speaker during Seminar

The People with Disability General Law (2012), in its article 23 establishes provisions related with accessibility in information and communications technologies. In this case, Ministry of Transportation and Communications, in coordination with the National Council for the Integration of Persons with Disabilities (CONADIS), promotes access of PWD through ICT, including Internet.

For example, the Local Authority of Miraflores (Peru), provides information of interest for deaf people that is available through Internet. In this case, Council sessions and protocol activities are videocasted, including a sign language picture in picture.

Source: Presentation made by speaker during Seminar

As a recommendation, public policies should ensure the minimum size of the interpreter frame on the screen. Sometimes, during a broadcasting program the frames are too small that deaf people can no see very well to interpreters.

Telephony operators should offer plans that fit to deaf people. For example, some actual plans do not offer enough time for Internet use, because they prioritize voice.

Internet web sites should have accessible templates so deaf community may use the service. This is important for education of deaf people, who have not reached a high academic level. Since deaf people do not read or write Spanish, Internet web sites should have accessibility by a sign language interpreter. Law 29535, issued in 2010, recognizes the sign language as an official language for deaf community in Peru; unfortunately it has not been ruled at the moment, so it cannot be applied. This is important because the law mandates that sign language interpreters should have a university degree, which implies a major number of interpreters to provide the service.

Finally, it is necessary to promote research that allows to optimize the use of technology for deaf people.

Access to Telecommunications and ICTs for people with physical disability in the APEC Region

❖ *Mexican regulation on accessibility for people with disabilities*[15]

Accessibility on the physical and digital world benefits people with physical disability and all users.

We need to create products and environments that the best majority of people can use taking into account our natural physical diversity.

Most of the time the world can be unwelcoming for PWD and the worst thing is that we create this environment that is not accessible. The good news is that we can create good designs.

[15] Based on the presentation made by Ms. Nancy Reyes Flores, Director of Operations, Hearcolors (Mexico)

Source: Presentation made by speaker during Seminar

Both physical and digital accessibility are equally important. Barriers affects the same way, people can navigate websites and if there are accessibility barriers people will not be able to get to their destination or fulfill their purposes.

Accessibility is mandatory and non-negotiable. Without accessibility, PWD can have a dramatically negative impact on their lives. There are three important legislation that are mandatory in the Mexican Economy. The Federal Telecommunications Law (2014), which establishes rights and defines that Federal Executive and Federal Telecommunications Institute must promote that PWD have access to telecommunications service on equal terms. Also, mandates that websites should be accessible.

There is also a Legal Agreement that defines that the level of accessibility of websites and digital content must comply according to the international standard: Web Content Accessibility Guidelines (WCAG 2.0 level AA) and accessibility statement. This is important because web accessibility benefits people with physical disabilities because all procedures and all things can be done on line and they do not need to go outside where they can find barriers. The Secretariat of Public Functions must be responsible for monitoring and evaluating the implementation process.

Another Legal Agreement regarding regulation of social marketing campaigns for departments and organs of Federal Public Administration, establishes that it must be verified that private providers of digital media have accessible and responsive platforms.

There is new regulation that is pending for publication, developed by the Federal Telecommunications Institute – General Regulations of web accessibility for the telecommunications service for users with disabilities that would have an impact in the private sector, because they would be obligated to provide accessibility in all services, provide media for discrimination complaints, offer plans and packages designed for PWD, offer contracts, promotions and invoices on line in an accessible format.

It has also been established that telecommunications operators should offer physical accessibility in customer service centers, offer universal design and physical accessibility in all new customer service centers, among other provisions related with physical accessibility.

In general, this legislation give beneficial rules for this sector of population, and contributes to increase their quality of life (independence and employment). It also impacts on public and private sector by improving the public's perception, improving compatibility with hardware and software devices, improving Search Engine Optimization (SEO) and positioning, increasing portfolio of clients, increasing competitiveness and avoiding complaints of users. In conclusion, the legislation is oriented to improve accessibility for all people, not only for PWD.

❖ ***Accessibility to ICT for people with disabilities in Peru[16]***

Regarding the situation of ICT for PWD, a study made by the Spanish Committee of Persons with Disabilities Representatives (CERMI) about use and harnessing of ICT by this sector of population, considers telephony and Internet devices as very essential communication ways to overcome some disabilities.

Mobile phones help to communicate with the others, providing security to PWD and to their families. Imagine a software as "Waze" that guides you in a car from one point to another used by a PWD, how this could be suitable for this people. In addition, computers develop the personal scope for PWD, helping to recover cognitive skills while Internet is a very important communication way for inclusion.

Organizations such as UNESCO analyzed the use of ICT in education finding that the most frequently used technological platforms are television, mobile phones and Internet, which are not accessible for PWD in most Latin American countries.

In the same way, the access to ICT for PWD depends on their economic situation. This is very important to take it into account, especially for people with scarce resources in South America, who cannot access to this tools and products. Assisted technology is available, but only for people that have the resources to acquire it. Likewise, they are not available for all.

Another relevant issue are the languages or dialects, which also limit inclusion in Latina America. In Peru there are several dialects different than the Spanish mother tongue language, and there is PWD that cannot access to these technologies and tools because of the existing language / dialect gap.

On the other hand, Law 28530, related to "Promotion of Access to Internet for People with Disabilities" (Peru, 2009) established the progressive suppression of physical and technological barriers that prevent their integration to information society and their insertion into the labor market. Likewise, this rule promotes the access and use of

[16] Based on the presentation made by Mr Manuel Mejia Herrera – Chief of Technology and Computing, National Council for the Integration of Persons with Disabilities – CONADIS (Peru)

Internet and suitable websites. It also includes the suitability of spaces in “Internet cafes”, as well as training on computing programs.

In 2011, Digital Agenda for Information Society was approved, considering that Peruvian society has moved to an information and knowledge society, active and productive, democratically integrated, open, inclusive, with equal opportunities to all people. Ensure inclusive and participative access of urban and rural population to information and knowledge society. Also, the General Law for People with Disabilities Bylaw, established communications accessibility, media accessibility and access to ICT.

Public institutions in Peru are complying with the promotion of access to people with disability though ICT, including Internet, as well as the use of sign language or captioning in educative, informative and cultural broadcasting programs. They mainly agreed the revision of State broadcasting. It is still necessary to include this fulfillment to the private sector.

Considering this situation, the National Council for the Integration of Persons with Disabilities (CONADIS, by its initials in Spanish) has the following challenges and recommendations:

- Consolidate an information society for everybody, inclusive and participative, integrating, expanding and ensuring the knowledge, guarantying human development, fostering innovation for the benefits of all, specifically for PWD.

- Ensure that access of PWD to ICT, including Internet, should be complied by private sector, in order to include sign language and subtitles for all cable and broadcasting stations nationwide.

- Fixed and mobile telephony providers should offer devices and products for PWD.

- Interactive digital communication will allow to implement software so people with hearing and speaking disabilities can communicate to others.

- In emergency situations, telecommunications operators should send alert messages for PWD to their mobile phones or on television.

- It would be advisable to develop a unique platform for virtual education for people with special skills, as an inclusive gap. It could be a network, than can be upgraded periodically and at no cost, accessible all for people, especially for those with low incomes.

- The National Council of Science, Technology and Technological Innovation (CONCYTEC) should generate fairs to promote research and software development, as well as hardware solutions, accessible for PWD, developing pilot projects so the successful ones could be available.

It is essential that an integration takes place between technology and means used by disabled people, without excluding them of this knowledge and tools. When we talk about smart cities, it is said that there would be automobiles with no drivers, which could be useful for a blind person. When technology is created or upgraded, it should be considered the PWD.

- ***Social inclusion of people with disabilities during disasters***[17]

The numbers of PWD is growing every year in all countries, primary because humankind is growing older. This workshop shows that ICT allows those people to feel no limitations in everyday life. But if a disaster strikes, those people are doubly vulnerable.

Today the whole rescue strategy of the population does not take into account PWD, especially who are connected to the system of e-health. And those people that relies on ICT tools in everyday life are especially helpless and die in the first place during the disaster.

In 2012, Russian Economy came up with the concept of new paradigm of personalized behavior control of people during a disaster that it was included in TELMIN 9 Declaration.

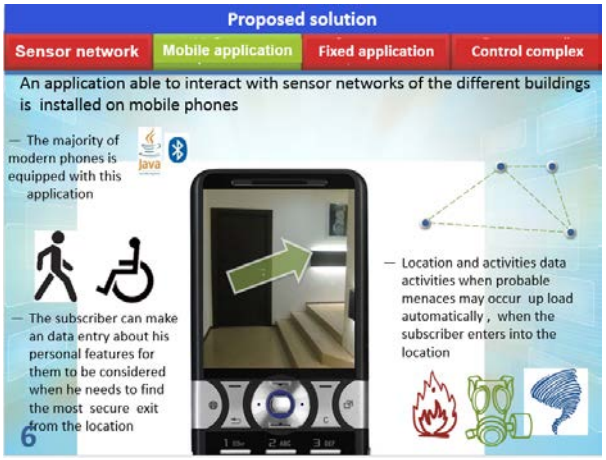
Implementation of a new paradigm of personalized behavior control of people, who find themselves at a facility in an emergency area is possible using IoT (GeO IoT) as sensor of object environment, intelligent subscriber units to communicate with IoT (GeO IoT) sensors located in a facility, modeling of specific disaster solution at the facility.

GeO IoT is an IoT with GPS-Glonass receiver installed that allows you to track the moment of PWD, especially to control their movement during disaster.

Continuing the description of the new paradigm of human risk, organization of independent personal evacuation, panic prevention and help in organization of rescue actions. This system can save up to 90% of people before the start of a disaster's catastrophic phase.

The system on personalized behavior control of people during emergencies provides the following customization on user groups: guests of facility, resident of facility, PWD, taking into account individual characteristics such as gender, health, age, job responsibilities and special needs (hearing and vision limitations, ability to move, etc.).

[17] Based on the presentation made by Dr Viliam Sarian, Scientific Consultant, Radio Research and Development Institute –NIIR (Russia)



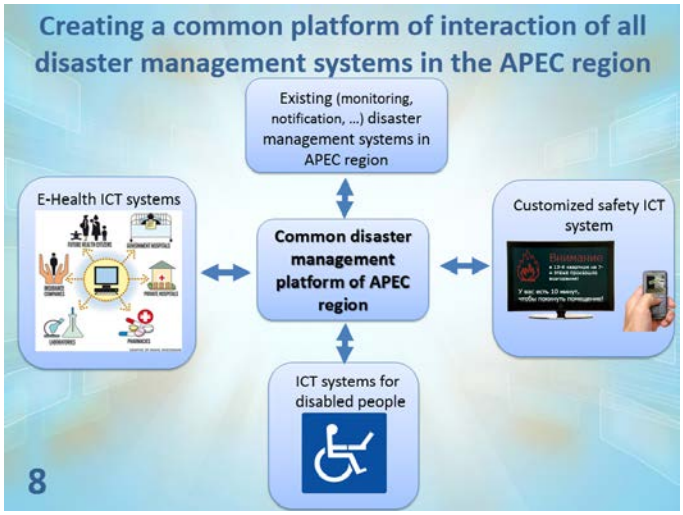
Source: Presentation made by speaker during Seminar

Regarding the main stage of human risk, in case of disaster, depending on the category of the person in a disaster area, his/her subscriber terminal receives the message about the type of disaster and specify the place where the person is.

Based on these messages coming from the sensor located in IoT (GeO IoT), located in facility and individual correspondent all the personalized behavior control signal falls to user terminal. It is based on period recording digital map of this facility and individualized characteristic of terminals. The software of the user terminal generates personalized risk control signal.

For emergency phases, the most existing systems cannot operate during disaster. Operation of proposed system operates during disaster in real time individually with every customer. In this case there is a depicted time between start of evacuation of resident, non-resident and PWD, starting first with the last ones.

The slide shows the feasibility of connecting the system to the common platform, as discussed in November, 2015, at the workshop in Moscow, cooperation program and created a common interoperable approach to improving the efficiency of existing disaster management systems based on ICT. The Seminar had interdisciplinary nature since it was attended by representatives from APEC Emergency Preparedness Working Group.



Source: Presentation made by speaker during Seminar

Inclusion of people connected to the e-health in a common platform will allow expand their area of adaptation and give them an opportunity to evacuate in case they are in a disaster area.

- ***Challenges for access to telecommunications and ICT for people with disabilities in Japan[18]***

Mainly, the policies oriented to PWD are conformed by subsidy policies to broadcasters, telecommunications service providers and researchers. In that subsidy biggest budget is destined to broadcasters for making subtitle and audio description program and to purchase concerned broadcasting facilities.

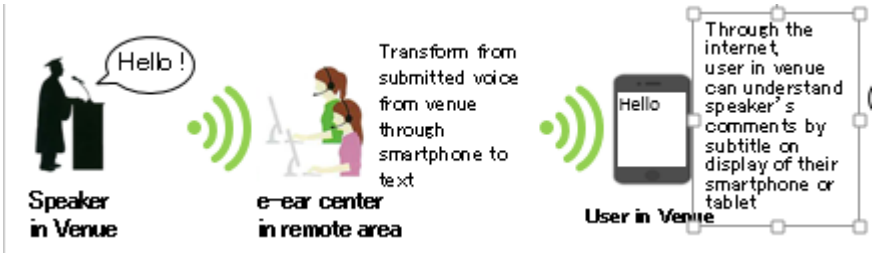
Ministry of Internal Affairs and Communications (MIC) has established this subsidy from 1997 based on Device Broadcasting Act in Japan. In the same year, the Ministry also started up guidelines for establishing coverage target of subtitle and audio description programs until 2008. Later, MIC also revised the guidelines for having expansion target of subtitle and audio description programs until 2017 and encourage broadcaster to expand subtitle and audio description programs spontaneously.

Another policy related to PWD is the promotion of information barrier-free environment. In Japan, there was a complicated structure for website of public sector. Aged and PWD also had to explore a website. In that sense, from 2005, MIC has provided the “Public websites operation guideline for everyone”, in order to maintain and upgrade web access in Japanese public entities. This guideline will be revised every five years. MIC has also developed and provided Web-accessibility performance evaluation tool from 2010, that it was upgrade in 2015.

[18] Based on the presentation made by Mr Hisashi Tsumura, Assistant Director for Multilatelar Economic Office – Ministry of Internal Affairs and Communications - MIC (Japan)

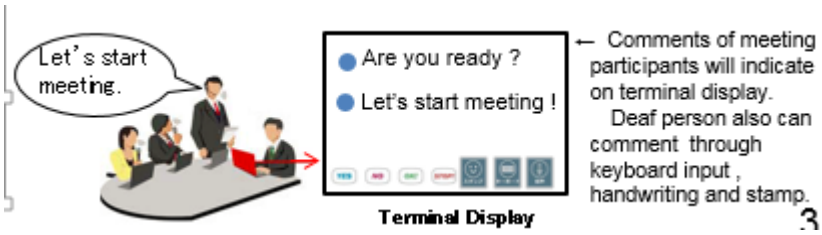
In case of individual needs, MIC will support maximum 50% of budget to those who develop and offer useful and helpful telecommunications and broadcasting services for PWD.

Mobile type information ensure service, called “e-ear”, is a textual information distributing service for high school and seminar supporting learner with hearing impairment. In this service, lecturer will pick up voice and transform it to subtitle immediately by Note-taking at remote area. Participants with hearing impairment can display subtitles on their smartphones or tablets simultaneously through Internet. This motivates deaf persons to study and join the seminar.



Source: Presentation made by speaker during Seminar

Another service allows deaf persons not only understand the context of speaking but also comment through a keyboard input and writing by using this system. Deaf person can join the meeting and understand the context of meeting easily using their personal device.



Source: Presentation made by speaker during Seminar

An application for smartphones and tablets called “KoeTra” allows the communication between a person that has hearing impairment and a normal hearing one smoothly, based on voice recognition composition technology for mutual transfer between voice and character, developed by the National Institute of Information and Communications Technology (NICT) in Japan.

MIC also cooperates with Japanese Federation of the Deaf for promoting and announcing this application to aged and people with hearing impairment. As of January 2016, approximately twenty thousand people uses this application as active users.

Perspectives and challenges to accomplish social inclusion of people with disabilities through access to telecommunications and ICT in APEC Region

Source: OSIPTEL

- ***Perspectives about policies and guidelines related to Telecommunications and ICT access for PWD***[19]

There are many lessons to learn and many projects that we can develop around the topic of accessibility.

There are some gaps between Economies as well as different levels of development from others, so there is a space for fruitful interchange of experiences and cooperation.

In the case of the first panel, Roxana Widmer-Iliescu from ITU, expressed the importance of standards as a way of disseminating technologies and good practices related to accessibility problems. She talked about the ITU's role about this matters and during this discussion, she also addressed something that is very important in this reflection, and how ICT can help to deal with disabilities.

One of the main ideas of this panel was that private sector service providers or operators has business opportunities here. It may not be politically good to talk about business but certainly, in the case of Peru, we are talking about one million and a half persons with some kind of disability. We are talking about big numbers, out of the thirty millions of total population.

Another important part of the panel it is precisely the importance and role that play the stakeholders (manufacturers, operators, civil organizations, unions of consumers, associations, among others). The could not only help to foster the inclusion of this matters in the political regulatory agenda, but also to contribute with the view of the users and the people that is engaged in this kind of problems. They express some problems that only can be seen and perceived directly by people involved in it.

Indeed, the accessibility is a regulatory goal. We have to be clear that there is not a trade-off between inclusion and efficiency. It is a wrong dilemma to think of equity and efficiency as contradictory goals. We are talking about people that have no access to telecom services and allowing people to get access to services is indeed efficient. It is

[19] Based on the speech of moderator Mr Gonzalo Ruiz Díaz – Chair of the Board, OSIPTEL (Peru) and interventions.

not only a social desirable goal, but it is also economically efficient. So, there is no trade-off, there is not a dilemma between efficiency and access to this vulnerable population.

On the other hand, in order to disseminate the lessons and knowledge from this Seminar, it could be possible to build a virtual platform in which all these national good practices can be shared and multiply the impact of these lessons. For example, the application shown by Australia, with some minor modifications could be replicated in other realities. We can share experiences through APEC.

In Peru there are very particular experiences, regarding the use of public phones that were very popular some years ago, but since penetration of mobile service has grown significantly nowadays, they are becoming less used. In Peru, there is a special legislation for these public phones that were opened by small entrepreneurs. There is a special regulation allowing PWD to access to these services.

Australia is very interested in knowing more about what is happening across the region on these issues and have prepared a number of questions that would like to circulate to Economies, related to the policies and issues that have in place, the subsidies that may be provided to their industry and any initiative that may have. The questionnaire would be a very good way to start to get information about the status of each Economy regarding the public policies and practices adopted on ICT access for PWD.

- ***Perspectives about Telecommunications and ICT access for People with visual disability*** [20]

It is more or less common in our economies that PWD face three gaps: education, income and access to telecommunication. Internet is a key element for inclusion to overcome those gaps and it has the potential to give disable people the means to overcome difficulties and be included in normal life.

There is a challenge to issue regulation policies to reach population that is not an attractive market. The State has to step on and promote service to those people and there has to be a policy (regulation) to overcome those differences. It is very important to have this regulation reviewed and updated, considering what it is really happening.

As we assume this new culture, where accessibility is mandatory and not negotiable, it makes the way to create new markets, considering new viable business models for social inclusion of this population.

[20] Based on the speech of moderator Mr Miguel Quintero Rivero, Director of Multilateral Relations, IFT (Mexico).

- ***Perspectives about Telecommunications and ICT access for people with speech or hearing impairment***[21]

A very relevant issue that Organizations must work in, is to integrate accessibility best practices in all its new projects; and on the other hand, institutions need to have a team responsible of integrate this new culture of accessibility. Some of the responsibilities of this team is to identify objectives, define standards to follow and identify necessary resources in order to accomplish these objectives.

This work should represent different areas of organizations, which should be committed and also must have the support at the highest level of the organization. The institution needs to have alliances in order to accomplish the objectives because it is not possible to do it without this support.

In some cases, they will have to hire experts to work in house, as well as to outsource services. The recommendation is to train the team. Also, PWD should be part of the team, because they offer the best perspective about accessibility.

The three main stakeholders are: i) developers, designers, quality control teams, ii) content creators, in order to have accessible digital content in all formats (pdf, word, powerpoint, etc.), and iii) final users, PWD to use ICT.

In general, they could establish alliances with universities, programming learning centers, entrepreneurial programs and the public sector also. The more learning points, the bigger the social impact. This will add value and leadership in the development of international market, it benefits the country at an international level and it also will provide accessible portals according to laws and accessible content for all users, bringing social inclusion.

Classification of accessibility is really important in order to develop programs according to the kind of disability. We need to consider the same importance for all types of disabilities and also learn from the experiences and legislation from the Australian and the United States Economies.

- ***Perspectives about Telecommunications and ICT access for people with physical disability*** [22]

Access to information is a fundamental right for PWD, in special for people with physical impairment, because of moving is a limitation, the accessibility to information becomes a key aspect in order to help them to be connected. That is the reason why services such as the Internet are crucial, as well as different devices for access to information or make transactions in daily life. In addition, it is important to create more products with accessible designs. Every accessible product for PWD improves their lives and also, the life of people that not present any limitation.

[21] Based on the speech of moderator Ms Nancy Reyes Flores, Director of Operations, Hearcolors (Mexico).
[22] Based on the speech of moderator Ms Carmen Velarde Koechlin, OSIPTEL (Peru).

From this point of view, it is necessary to generate new contents for PWD on the Internet, as well as develop regulation of these topics in social marketing, including products and services for them. It is also important the role of the private sector in this matter, offering accessible products for this sector of populations. That will support the efforts related to increase their quality of life.

Other relevant point is to keep and increase investments in accessible devices, and it is very important to involve the public and private sector in new projects and programs that contribute to it, considering also the economic situation and income of this sector of population, especially if they are in poverty or does not have the opportunity to access to technology.

In addition, there are ideas related to designing of virtual learning platforms, in order to improve educational level and knowledge of PWD, so they progressively can get an independent lifestyle. For example, IoT plays an important role to communicate them in case of disasters and television broadcasting, including subtitles in every transmission.

❖ ***Closing remarks***[23]

Source: OSIPTEL

On behalf of the Telecommunications Supervisory Agency of Peru – OSIPTEL, we want to thank the support of the TELWG in allowing us developing this project. In addition, we would like to express our special acknowledgement to the Economies that supported this project: Australia; Japan; the Philippines; Russia; and the United States; as well as panelists and participants in this Seminar.

We do expect that the exchange of ideas and good practices related to work for PWD -from different perspectives-, could be useful for participants in this project and the TELWG Members, in order to increase our knowledge about other experiences and continue the efforts oriented to improve the quality of life in this vulnerable sector in the APEC Region.

[23] Based on the speech of Mr Gonzalo Ruiz Diaz, Chair of the Board, OSIPTEL (Peru).

III. SEMINAR OUTCOMES

Some conclusions and recommendations listed below have been considered as a result of presentations and interventions made on the Seminar. As the project proposing Economy, we hope they could represent a contribution for the development of policies and references in order to promote accessibility to Telecommunications and ICT for PWD:

a) PWD require more opportunities in order to be able to accomplish all activities they could need, and that is something important to be promoted with the support of technology. In that sense, ICT could help them in four key aspects: education, health, job and accessibility.

b) As PWD get autonomy, existing gaps for their social inclusion in the society could be reduced. Several Economies agreed on consider this effort as a priority, so all stakeholders, including public and private sector, must work on new strategies in order to succeed connecting them and improving their quality of life within the APEC Region.

c) Development of standards is another relevant matter in order to provide functional access to ICT for PWD. Accessibility is all about ensuring that PWD can access to ICT in the same way a person without disabilities does. That means that it is necessary to remove barriers. International organizations such as United Nations, World Health Organization, ITU and others have an intensive work on this matter.

d) Economies agreed that accessibility issues for PWD are also a challenge for regulators, policy makers, private sector (operators and manufacturers) and leaders. ICT plays a relevant role in order to achieve it since through them this population could have access to information and services.

e) Accessibility is mandatory and non-negotiable, and should be taken into account for the development of laws, policies and regulation. In this context, it is determinant that markets and businesses in general will be able to adapt new models on an inclusive approach.

f) Technologies represent an opportunity for the social inclusion, in terms of support, knowledge, science education and popularization, and development. In this context, accessibility to ICT for PWD may be more than a social gesture, but a business opportunity.

IV. APPENDIX

Final Program

Final Program

Seminar "Social inclusion of people with disabilities through access to telecommunications"
15 June 2016
Tacna, Peru

08:30-09:00: ***Registration***

09:00-09:15: ***Welcome and opening remarks***
- *Gonzalo Ruiz Díaz, Chair of the Board - OSIPTEL (Peru)*
- *Andrey Mukhanov, TEL Chair (Russia)*

09:15-10:15**:** ***Policies and guidelines for access to telecommunications and ICT for people with disabilities***
This session will address the general international framework of the issue related to people with disabilities, regarding the use and access to telecommunications and ICT's, in order to promote equality of opportunities for this population.

Speaker: Roxana Widmer-Iliescu, Senior Programme Officer, International Telecommunications Union - ITU.
Moderator 1: Gonzalo Ruiz Díaz, Chair of the Board, OSIPTEL (Peru)
Panelists:
- *Fernando Bolaños Galdós, Vice Minister of Vulnerable Populations and Chair of National Council for the Integration of Persons with Disabilities – CONADIS (Peru)*
- *Miguel Quintero Rivero, Director of Multilateral Relations, Federal Telecommunications Institute – IFT (Mexico)*

10:15-10:30 ***Q&A***

10:30-10:45: ***Coffee Break***

10:45-11:30: ***Access to Telecommunications and ICT for people with visual disability in APEC Region***
From different approaches, panelists will highlight experiences, good practices and regulations established in their countries about the access to telecommunications and ICTs of people with visual impairment, in order to provide autonomy.

Moderator 2: Miguel Quintero Rivero, Director of Multilateral Relations, Federal Telecommunications Institute – IFT (Mexico)

Panelists:
- *Ena Dekanic, Attorney-Advisor, International Bureau, Federal Communications Commission (the USA)*
- *Claudia Barriga Choy, Regulatory Policies and Competition Office - OSIPTEL (Peru)*
- *Maria Bolshakova, Specialist on International Legal Protection, Radio Research and Development Institute – NIIR (Russia)*

11:30-11:45: ***Q&A***

11:45-12:30: ***Access to Telecommunications and ICT for people with speech or hearing impairment in the APEC Region***

From different approaches, panelists will highlight experiences, good practices and regulations established in their countries about the access to telecommunications and ICTs of people with speech or hearing impairment, in order to provide autonomy.

Moderator 3: Nancy Reyes Flores, Director of Operations, Hearcolors (Mexico)

Panelists:

- *Joseph Mc Carroll, Senior Policy Officer, Department of Communications and Arts (Australia)*
- *Ena Dekanic, Attorney-Advisor, International Bureau, Federal Communications Commission – FCC (USA)*
- *Isabel Rey Clemente, President of Peru Deaf Rights Foundation (Peru) Representative for LATAM of the Word Association Signs Languages Interpreters*

12:30-12:45: ***Q&A***

12:45-14:15: ***Lunch***

14:15-15:00: ***Access to Telecommunications and ICTs for people with physical disability in the APEC Region.***

From different approaches, panelists will highlight experiences, good practices and regulations established in their countries about the access to telecommunications and ICTs of people with physical impairment, in order to provide autonomy.

Moderator 4: Carmen Velarde Koechlin, Manager of Decentralized Offices - OSIPTEL (Peru)

Panelists:

- *Nancy Reyes Flores, Director of Operations, Hearcolors (Mexico)*
- *Manuel Mejia Herrera – Chief of Technology and Computing, National Council for the Integration of Persons with Disabilities – CONADIS (Peru)*
- *Dr. Viliam Sarian, Scientific Consultant, Radio Research and Development Institute –NIIR (Russia)*
- *Hisashi Tsumura, Assistant Director, Multilatelar Economic Affairs Office – MIC (Japan)*

15:00-15:15: ***Q&A***

15:15-16:15: ***Perspectives and challenges to accomplish social inclusion of people with disabilities through access to telecommunications and ICT in APEC Region***

This session will highlight the perspectives and challenges related to the use of telecommunications and ICTs by people with disabilities within the APEC Region, in order to get their social inclusion with equality of opportunities and contribute to bridge the digital divide in Economies. In addition, the panel will review potential future activities related to these topics to be included in the APECTEL agenda.

Panelists:

- *Gonzalo Ruiz Díaz – Chair of the Board, OSIPTEL (Peru)*
- *Miguel Quintero Rivero, Director of Multilateral Relations, IFT (Mexico)*
- *Nancy Reyes Flores, Director of Operations, Hearcolors (Mexico)*
- *Carmen Velarde Koechlin, OSIPTEL (Peru)*

16:15-16:30 ***Closing remarks***