Q1. Which are the disabilities, with specific accessibility requirement, other than those mentioned in para 2.3 that require consideration for preparing a framework?

Disabilities defined in the RPWD Act, 2016 as well as special needs of elderly persons shall be considered for preparing a framework. However these may be broadly classified into – Physical and Mental.

Q2. Apart from the challenges enumerated in para 2.3, what other challenges do PwDs face while accessing telecommunication and broadcasting services?

First and foremost is the challenge of literacy and language. Rajbhasha Hindi and then the regional languages shall be the medium to reach out to all users including persons with disabilities as formal education is far from them. Simplicity and culture based logic shall guide various controls on the hardware and software. It is specifically pointed out that TTS not only helps persons with visual impairment but also potentially helps elderly with visual problems, illiterate people and also useful in the poor illuminated/ dark areas.

Q3: In your opinion, what are the reasons for the desired benefits of ICT (telecom and broadcasting) not reaching the PwDs despite several policy measures and scheme being implemented?

Lack of awareness is the foremost reason. Awareness needs to ride on accessible media and that too having reach to the remotest locations in the country. Hon. PM, Shri Narendra Modi has already requested the youth to volunteer as teachers for the previous generation people to use the gadgets. Such activities may help fast spread of the utility of various features provided for accessibility.

Q4: What additional or corrective measures can be taken by the Government to enable better access to telecommunication and broadcasting services and devices to PwDs? Please give a rationale for your response.

Government has already started the spadework with GIGW norms for websites, online applications, Universal Disability Identification (UDID) cards etc. and taking up the Digital India ahead. Digitizing the survey of disability was done under Sparsh Abhiyaan in 2011 by the GoMP. Now the website of Sparsh provides one stop solution to provide various assertive actions by the Government for Persons with Disabilities. Survey and Digitization needs more accurate information and forms the foundation of all facilities to be extended to the PwD by the Government. After the survey, time bound provision of rehabilitation in the 5 areas as described in Community based rehabilitation guidelines, 2011 by WHO needs the

ICT framework for services, monitoring and long term support. These 5 areas include health, education, livelihood, social and empowerment. App and websites may be prepared for Electronic data storage and transmission to facilitate in all these areas.

Q5: Apart from the measures suggested by ITU, what additional measures can be taken by the TSPs and equipment vendors/suppliers and other stakeholders to address the challenges faced by PwDs while accessing telecom and broadcasting services?

The telecom sector has done commendable work by providing various language platforms on need basis. Similarly efforts for text to speech, speech to text, auto-complete text, dictionary, variable font size, magnification, illumination shall be undertaken. Providing options other than finger movement to control the gadgets must be provided which may include foot, tongue, gaze detection as well as virtual keyboard.

Q6. What are the areas where collaboration between various stakeholders would be useful and how?

Hardware, Software, research, marketing, sales, cultural adaptation, need based customizing etc. are few areas where various stakeholders would be useful. The triad of user (person with disability), provider (engineer) and Assessor (PMR doctor and paramedical and rehabilitation professionals) are the main stakeholders who must be involved.

Q7. Should the Government/TRAI direct the telecom and broadcasting service providers to provide information pertaining to billing, usage, pricing and contracts in the form accessible to PwDs? Please provide a rationale for your response.

With the National Trust Act, 1999 in force, we have two types of PwDs – those who can manage finances and those who cannot. The latter group comes under National Trust and the legal guardian can take care of billing etc. However the former group requires accessible formats of billing etc. It is pertinent to bring to notice that pricing and billings are difficult even for the persons without disabilities due to multiplicity and complex pattern like 3 paise per 2 seconds. Such rates may put persons with intellectual disabilities to the inaccessible zone, fortunately they will have their legal guardians to take care. However blind and deaf need accessible billing and again the importance of Rajbhasha Hindi and regional language stands important.

Q8: Should the Government/TRAI mandate that the devices used for watching television provided through cable, satellite/DTH, fibre, etc. should be made accessible to PwDs?

Yes, of course this becomes mandatory with the RPWD, 2016 Act in force. Sign language shall be in standard format where Indian Sign Language Research and Training Centre, Okhla, Delhi shall be consulted. Formats for the persons with visual disability shall be followed. Individuals with Autism spectrum disorder, Dyslexia, Intellectual deficiency disorder etc. may find pictures and symbols to be more accessible.

Q9. Should international accessibility standards be adopted for telecommunication and broadcasting services and devices in India? Please suggest steps required to ensure their adoption by the service providers/device manufacturers.

Standards need to be studied and may not be applicable to India in toto. However the principles may be used. The cultural and linguistic diversity must be dealt with in India and telecommunication and broadcasting must target crossing the barrier of formal academic literacy for universal inclusion.

Q10. What additional measures can be taken or technologies can be deployed by service providers or equipment manufactures to assist PwDs?

Service providers need exposure to the needs of PwDs and available solutions that make life easy for the PwDs. This can be ensured through various establishments under the Department of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice and Empowerment, Government of India like the National Institutes and Composite Regional Centres. The Rehabilitation Council of India can chalk out and implement such introductory programs for service providers. The State counterparts of the Ministry may facilitate such awareness activities. After this stage, new ideas and pooling of available facilities will help designing and implementing the technology for PwD.

Q11 Should device manufacturers be mandated to allow in their device's operating system those applications which are meant to assist the PwDs? Please justify your response.

Consider an example of car. It is not essential that a company should manufacture all cars which can be driven by single hand, but the car must be adaptable when a single handed customer wants to buy it for independent use. Similarly, the devices may have add-on facilities as per need of PwD which may differ widely among various categories. The add-on must be free of charge however and shall be provided on demand as per the category of disability of the user. It is essential to give wide publicity of such add-on devices in accessible way viz. visual, audio etc.

Q12. What measures can be taken in India so that emergency services are made more accessible for PwDs? Should the implementation of these measures by TSPs be made mandatory by the Government?

Yes emergency services are mandatory under the RPWD, 2016 Act and hence must be provided in accessible way. The use of such service requires lot of training for the PwD especially person with Intellectual Disabilities to ensure appropriate use.

Q13. Should the device/handset manufacturer be mandated to manufacture atleast one model of handsets for PwDs which is having accessibility features and which are compatible with assistive technology features such as hearing and visual aids including emergency buttons etc.?

A single model will not suffice. It is mandatory to manufacture different models for different type of disabilities and make it available for use without extra cost. The cost factor due to Intellectual Property Rights must be dealt with strongly in this regard.

Q14. How should companies be encouraged to utilise their CSR funds for development of applications, devices and services for the PwDs? What kind of devices and applications can be envisaged/designed to make achieve ICT accessibility for PwDs?

Companies may have their own R&D wings and may partner with institutions like Indian Institute of Information Technology, Allahabad to establish Centre for PwD for innovations in ICT. CSR may direct new developments as well as sales and maintenance of telecommunication devices for PwD at doorstep. Devices include a plethora of gadgets and software customised to the need of different categories of PwD and also the elderly and illieterate. The devices shall not only help in communication, but shall become handy support in education, learning, information sharing, advocacy, banking, purchase, self care, expression of emotion etc.

Q15. Should any other funding mechanism for the development of applications, devices and services meant for the PwDs be considered? Please give a rationale for your response.

Being dependent on CSR or demand from the PwD has retarded the growth of developments in this sector. It is better if parent societies, self-help groups, and NGOs are motivated to undertake such developments. Dedicated institutions in the field of disability rehabilitation and technology must be mandated to take up research and development of universally accessible devices to to the tune of 15% - 50% of all its R&D activities. This is because the WHO disability data, 2011 states that incidence of disability is 15% in the World and thus there is every alternate home which houses a PwD.

Q16. How can effective campaigns be designed to create awareness about use of ICT accessibility tools? Can such campaigns be funded by CSR funds? If not, what other mechanisms can be used to fund such campaigns?

Mouth to mouth publicity is the best way. The new generation is efficient enough to take ahead the technology. The need of time is to create detailed accessible manuals of various telecommunication devices deciphering accessibility features. Media publicity, trainings etc. also may be used but the utility of these devices visible in the form of ease of communication, livelihood, advocacy, caregiving, emotional sharing among the PwD will itself spread the word. CSR funds may be useful.

Q17. Should the Government incentivize the manufacturing and development of ICT tools and devices viz. tools for mobile accessibility, TV accessibility or for web accessibility for PwDs? Please give a rationale for your answer.

Incentive in financial terms is not warranted. However, the additional features may come handy in advertising and increasing sales of the devices and thus adding incentive to the producer.

Q18. Please give inputs/suggestions/comments on any other issues which you feel are relevant to the subject matter.

Workshop, conference, seminar, brainstorming shall be organized with help of stakeholders to develop, manufacture, advertise, sale and maintain the utility devices for PwD. We must remember the punchline of UNCRPD – "Nothing about us (PwD) without us (PwD)" and take opinion about utility of the gadgets from the PwD of various categories during such workshops.