



**RECOMMENDATIONS
ON MAKING ICT ACCESSIBLE
FOR PERSONS WITH
DISABILITIES**

Submitted by:
Increasing Diversity by Increasing Access to Legal Education

INTRODUCTION

The [Increasing Diversity by Increasing Access to Legal Education](#) (IDIA) project is a pan India movement to identify and train students from underprivileged and marginalized backgrounds, and transform them into leading lawyers and community advocates. Currently in its 7th year of operations, IDIA has nearly 90 scholars who gained admission in the top law schools of India. Of these, 17% are students with disabilities.

IDIA DISABILITY ACCESS PROGRAMME (“I-DAP”)

I-DAP is a pioneering initiative for making the legal field accessible for persons with disabilities. It seeks to expand the opportunities offered to students with disabilities before and after law school, and create a more inclusive atmosphere. It carries out research and advocacy to make universities and legal workspaces more disability-friendly. It also seeks to empower students with disabilities through training, mentorship, and providing accessible study materials.

Further to the Consultation Paper published by TRAI on December 20, 2017 on ‘*Making ICT Accessible for Persons with Disabilities*’, we furnish our comments and recommendations to the specific questions and issues contained therein. The team of researchers that worked on these recommendations was led by Prof. (Dr.) Shamnad Basheer and comprised of Amar Jain, Anusha Reddy, Ayushi Singhal, Balu Nair, Kalpana Yadav, Karan Gupta and Rahul Bajaj.

Q1. WHICH ARE THE DISABILITIES, WITH SPECIFIC ACCESSIBILITY REQUIREMENT, OTHER THAN THOSE MENTIONED IN PARA 2.3 OF THE CONSULTATION PAPER THAT REQUIRE CONSIDERATION FOR PREPARING A FRAMEWORK?

Apart from the disabilities identified by ITU, speech based disabilities have additionally been identified in the Consultation Paper (“CP”).¹

This suffices to complete the list.

Further, we suggest that instead of identifying specific kinds of disabilities, disability in any legislation should be defined in accordance with the social model of understanding disabilities. This model, as also used in the UNCRPD, suggests:

“Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.”

This is a more holistic definition, and avoids the need for amending the legislation every time a new kind of disability is brought to light, in turn promoting greater accessibility.

¹ CP, ¶2.4.

Q2. APART FROM THE CHALLENGES ENUMERATED IN PARA 2.3 OF THE CONSULTATION PAPER, WHAT OTHER CHALLENGES DO PWDs FACE WHILE ACCESSING TELECOMMUNICATION AND BROADCASTING SERVICES?

Apart from the challenges enumerated in para 2.3 of the CP, challenges that Persons with Disabilities (“PwDs”) face while accessing telecommunication and broadcasting services include inability in communicating through voice-calls (speech based disabilities); inability to read mobile phone bills in hard copy, inaccessibility of the content on certain websites, it not being conducive to being read by a screen-reading software, or being zoomed (Visual Disability) [identified subsequently in the paper as well], etc.

It is indeed difficult to prepare an exhaustive list of challenges. Since the intention behind this question appears to be to resolve these challenges upon their identification, we suggest that the key is to ensure that all services, and technology are accessible to people with different kinds of disabilities, in a like manner as they are to non-disabled people. This would ensure removal of these challenges as well.

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?

The two main reasons why the desired benefits of ICT accessibility do not reach the disabled are that of non-implementation of the policy measures and the lack of dissemination of information about available schemes and policies. A few instances illustrative of these shortcomings are noted below:

- 1) The National Telecom Policy, 2012 which sought to make broadband access and rural telephony available in a non-discriminatory manner, surprisingly did not include any policy mandate for providing accessibility to PwDs.²To overcome this, a comprehensive policy for PwDs should be drawn up and it should mandate implementation of systems that would enable better accessibility for PwDs. This can also be done through a Code of good practice.
- 2) As listed in the First Country Report, 2015, a few campaigns like ‘BadtheKadam’ have been organised by the Government. However, the implementation of these campaigns leaves much to be desired and is carried out in a piecemeal fashion. For example, some states see limited implementation of the same, and other states see a lack of enrollment because of the lack of information about the same. The impact is thus limited. Another serious issue is that very little has been done to include disability awareness either in the training curriculum of various professional courses or while training government officials providing various

² National Telecom Policy 2012 — Issues and Concerns, The Centre for Internet & Society, June 30, 2012. See <https://cis-india.org/telecom/national-telecom-policy-2012>.

services. There are several reports indicating that even Disability Commissioners themselves are not aware of the rights of PwDs.³

- 3) The Ministry of Information and Broadcasting issued a circular in 2015 regarding the captioning and audio description of television news/programmes. However, there has been no progress (as on February 2017) as far as implementation is concerned. Specifically, the Ministry has completely overlooked sign language interpretation. In light of this, there is a need to mandate at least one news bulletin at prime time every day, with sign language interpretation, to begin with.⁴
- 4) Captioning of news in the form of sub-titles or scrolling text, which appears at the bottom of the television screen as the news reader reads, has been made mandatory for all news broadcast by Ministry of Information & Broadcasting [First Country Report on the Status of Disability in India]. However, the non-implementation of this measure has result in the beneficent object underpinning its formulation being frustrated.⁵
- 5) Para 2.10 of the CP states that *“In 2009, the Department of Electronics and Information Technology (DeitY), initiated a process to formulate a national policy to ensure accessibility of websites and ICT products and services. Under this policy, all government websites are required to comply with the accessibility standards set out under Web Content Accessibility Guidelines 2.0 (WCAG 2.0) and with other international accessibility standards for all electronic information and products and services deliver.”* The Centre for Internet & Society conducted a study of such accessibility in 2012 and reported that the state of implementation is far below average.⁶
- 6) Para 2.11 of the CP mentions the initiation of the National Policy on Universal Electronic Accessibility. However, there is no information in the public domain on compliance of the same.
- 7) Disseminating information about existing programs should be stepped up and the same must be done in an accessible format. The Department of Empowerment of Persons with Disabilities recently drafted rules to the new Rights of Persons with Disabilities Act, 2016. Ironically, the same was not available in a format accessible to PwDs.⁷

³Parallel Report of India on the Convention on the Rights of Persons with Disabilities (CRPD) (2017), Pg. 10, [https://www.ncpedp.org/sites/all/themes/marinelli/documents/DRAFT%20CRPD%20India%20Parallel%20Report%20\(31st%20March%202017\).pdf](https://www.ncpedp.org/sites/all/themes/marinelli/documents/DRAFT%20CRPD%20India%20Parallel%20Report%20(31st%20March%202017).pdf).

⁴*Ibid*, p. 13, 24.

⁵See<http://disabilityaffairs.gov.in/upload/uploadfiles/files/First%20Country%20Report%20Final.pdf>

⁶See <https://cis-india.org/accessibility/accessibility-of-government-websites-in-india>

⁷ Parul Ghosh, NOT SO ACCESSIBLE AFTER ALL, The Hindu, March15, 2017. See<http://www.thehindu.com/opinion/op-ed/not-so-accessible-after-all/article17462709.ece>.

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.

In addition to the steps outlined in the above answer and answers to question 5, a larger focus must be placed on improving the implementation of policies in place by either (1) putting in place a monitoring mechanism; or (2) having a periodic review of the policies rolled out so that the state of implementation can be monitored. In addition to this, wide dissemination of information related to policies should be put out in an accessible manner.

In relation to making broadcasting more accessible, a report prepared by the Centre for Internet & Society on the same is informative.⁸ Some suggestions in the report which merit serious consideration are:

- A. Mandating the use of same language subtitles for more programmes – a strategy that has yielded great success for television shows such as Rangoli and Chitrahaar.
- B. Exploring the use of public-private partnerships as the instrumentality through which to deliver accessible broadcasting and subtitling facility.
- C. Feasibility study of spoken subtitles in India using a broadcast mix and **Text-to-speech (TTS) developed** in India and **Pilot launch of Audio Description** in a half-hour dedicated segment every week.

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?

Examples from two jurisdictions can be looked at for the same:

USA

The Federal Communication Commission Rules under Section 255 of the Communications Act require telecommunications equipment manufacturers and service providers to make their products and services accessible to PwDs, if such access is readily achievable.⁹ Where access is not readily achievable, manufacturers and service providers must make their devices and services compatible with peripheral devices and specialized customer premises equipment that are commonly used by PwDs, if such compatibility is readily achievable.¹⁰

⁸ Accessible Broadcasting in India, The Centre for Internet & Society. See <https://cis-india.org/accessibility/blog/accessible-broadcasting-in-india.pdf>.

⁹"Readily achievable" means easily accomplishable and able to be carried out without much difficulty or expense.

¹⁰See <http://transition.fcc.gov/cgb/consumerfacts/section255.pdf>

As required by Section 508, the Access Board developed technical and functional performance criteria necessary for electronic and information technology to comply with Section 508. The accessibility standards for procurement of telecommunications products are:

- 1) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY¹¹ functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.
- 2) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.
- 3) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.
- 4) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.
- 5) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.
- 6) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.
- 7) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.
- 8) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.

¹¹ Text Telephone (TTY) – Machinery or equipment that employs interactive graphic (i.e., typed) communications through the transmission of coded signals across the standard telecommunications network. Text telephones can include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers.

- 9) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.
- 10) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.
- 11) Products which have mechanically operated controls or keys, shall comply with the following:
 - Controls and keys shall be tactilely discernible without activating the controls or keys.
 - Controls and keys shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2 N) maximum.
 - If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.
 - The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

Australia

The Telecommunications (Equipment for the Disabled) Regulations, 1998 specifies the equipment and features that must be available to PwDs for use with the standard telephone services (STS) under the USO. These are:

- equipment that allows access to the National Relay Service—for example, a teletypewriter (TTY), modem or telebraille
- one-touch dialling memory
- hands-free capability—a speaker and/or a handset cradle
- built-in hearing aid coupler
- cochlear implant telephone adaptor
- volume control—to amplify either the incoming or outgoing caller's voice

- alternative alerts to indicate that the telephone is ringing—either an additional ringing device with adjustable volume, tone and pitch, or a visual alert
- lightweight handset
- the facility to connect a second piece of equipment in parallel with the existing telephone.

In addition, the Australian Communications and Media Authority's (ACMA) has formulated the Telecommunications Disability Standard (Requirements for Customer Equipment for use with the Standard Telephone Service – Features for special needs of persons with disabilities- AS/ACIF S040) 2015, which requires certain customer equipment used with the STS, including fax machines with a handset system, to have:

- a raised 'pip' on the '5' digit key—this tactile indicator helps the vision-impaired to locate number keys;
- hearing aid couplers built into the handset—this limits the strength of the magnetic field radiated from standard handset receivers to minimise interference for a person with a hearing aid.

It can be explored which of these standards can be successfully implemented in the Indian context.

Q6. WHAT ARE THE AREAS WHERE COLLABORATION BETWEEN VARIOUS STAKEHOLDERS WOULD BE USEFUL AND HOW?

The United Nations Division for Social Policy Development and the Department of Economic and Social Affairs had prepared a Toolkit on Disability for Africa titled *Building Multistakeholder Partnerships for Disability Inclusion*.¹²The same is informative on the kind of collaborations that can be undertaken in order to facilitate a higher degree of inclusion. Some examples in the toolkit include:

- 1) National Government Actors and Independent Institutions;
- 2) Persons with Disabilities and their representative organizations.

Further, collaborative arrangements in the shape of public-private partnerships would be a useful tool to make subtitling and accessible broadcasting facilities available to the disabled. Collaboration between private sector broadcasters who have made some of their services accessible and those who do not have any experience with the same can also be useful in equipping the latter with the technical wherewithal to make their services accessible to the disabled.

¹²See <http://www.un.org/esa/socdev/documents/disability/Toolkit/Building-multi-stakeholders.pdf>.

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.

Yes. Such a directive would enable more access to the abovementioned services for PwDs. As already noted in the CP, access to billing, usage, pricing and contracts in a form accessible to PwDs will be an important step in making ICT more accessible. This can also be done in a number of ways, which incorporate existing assistive technologies and enable an extension to these services. For instance, image to text conversion of the bill for the visually impaired. Pertinently, as opposed to making the bill available in Braille, it is also critical to ensure that it is accessible from a technological standpoint, such as with screen reading technology. The web platforms on which such bills can be accessed must also be made accessible. Some other initiatives that have been taken globally can also be taken note of:¹³

- 1) Brazil: Hand Talk is a smartphone app developed to improve social interaction and facilitate independence for deaf mobile users. This app presents an animated avatar named 'Hugo' who converts speech into sign language, acting as a personal sign language interpreter for deaf mobile users;

The operators must publicize accessibility features for hearing impaired (like subtitles and messages options), for visually impaired (like screen reader, audio description, beeps, scanner, text-to-speech), for motor impaired (like voice recognition, voice reply, autotext) and for cognitive impaired (like voice recognition, text prediction),

- 2) Mexico: In alliance with the Mobile Manufacturers Forum, the Federal Telecommunications Institute from Mexico created a website where the users can find mobile handsets with accessibility functionalities according with their needs (<http://movilesaccesibles.ift.org.mx>).

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, the same should be mandated. Two standpoints need to be considered:

- 1) That of disabled people: This would ensure maximum inclusivity and ensure that such forms of entertainment which are vital to development can reach the disabled.
- 2) That of business developers: It is in the best interest of businesses to ensure such accessibility so that an entire section of people are not excluded from accessing services and their economic interests are served as well. It makes great business sense for these services to be made accessible, in light of the fact that the disabled constitute a significant chunk of India's population. By not making their

¹³ See <https://www.itu.int/en/ITU-D/Regional-Presence/Americas/Documents/EVENTS/2016/15526-MX/AIII-best-practices-and-guidelines-Accessible-EN.pdf>

services accessible, telecom service providers are foreclosing the possibility of this segment of the population constituting their customer base.

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.

It is suggested that in addition to first ensuring the effective implementation and monitoring of existing policies, a move towards international accessibility standards for telecommunication and broadcasting services in India would be welcome. For examples, a complete move to WCAG standards as provided would ensure high levels of accessibility to web content to PwDs. As noted in Answer 3, whilst the same seems to be mandated, it's the inefficient implementation of the same that renders the policy obsolete.

In terms of telecommunications and broadcasting, the Canadian Report referred to in answer 4 should be referred to.

Q10. WHAT ADDITIONAL MEASURES CAN BE TAKEN OR TECHNOLOGIES CAN BE DEPLOYED BY SERVICE PROVIDERS OR EQUIPMENT MANUFACTURES TO ASSIST PWDs?

Refer to question 4, 5, 7.

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.

Yes. However, the contours of these applications viz. necessary technical expertise required for the same must be explored through expert opinions on the same. It also bears mention that, for the purpose of making services accessible, sticks are as important as carrots. This being so, mandating accessibility is just as important as incentivizing it.

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?

Apart from the measures already mentioned in the CP¹⁴, and the measures suggested in the paper previously (see answer to question 5, *supra*) for making ICTs equally accessible for the PwDs (which consequently will help in making emergency communications accessible as well), there are various applications¹⁵ which can be used to facilitate

¹⁴ It is imperative that the location of the individual is ascertained at the time of emergency, and the relay services, and other accessibility mechanisms, should necessarily be initiated by dialling an emergency number, triggering the tracing of the caller's location. In addition, while it is beyond the ambit of TRAI's role, it should also be ensured that the emergency information is communicated in multiple formats, such that PwDs can access the information.

¹⁵ See, RogerVoice, available at, <https://rogervoice.com/> ("The 1st worldwide app that subtitles phone calls in real time"); Ready Erie app, available at, <http://www2.erie.gov/emergencyservices/index.php?q=ReadyErie> ("app will allow users to receive critical

communication by PwDs during emergency. TRAI can publish a list of these applications, and thereby facilitate their use.

For the answer to second part of the question, see answer to question 13 below.

Pertinently, during emergencies, a number of helpline numbers are flashed on television screens to find out the whereabouts of loved ones, obtain access to essential services, contact hospitals, etc. It should be mandated that this information be conveyed to the disabled in a format accessible to them, for instance verbally reading out these helpline numbers for the benefit of the blind. This is vitally important for equipping the disabled to deal with emergencies in the same way as their able-bodied counterparts.

Q13. SHOULD THE DEVICE/HANDSET MANUFACTURER BE MANDATED TO MANUFACTURE AT LEAST 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?

The idea of making only one device/handset with accessibility features is a very myopic way of resolving the concerns, promotes segregation of disabled individuals, and allows ICT companies to absolve themselves of their obligations to provide reasonable accommodations, merely by manufacturing one accessible handset. More specifically, if handset manufacturers make one special handset for the disabled, they may use this as the basis to argue that they should not be required to make all handsets accessible, as the one special handset constitutes sufficient compliance with their obligation to the disabled.

We propose that not only one handset, but all the handsets manufactured post the publication of the relevant rules/guidelines in this regard, should be disabled-friendly, i.e. we suggest a Universal Design Model for creating accessibility.

As per Article 2 of the United Nations Convention on the Rights of Persons with Disabilities (**'UNCRPD'**)¹⁶:

“Universal design” means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. “Universal design” shall not exclude assistive devices for particular groups of persons with disabilities where this is needed.

Article 4(1)(f) casts an obligation on India:

“[t]o undertake or promote research and development of universally designed goods, services, equipment and facilities, as defined in article 2 of the present Convention, which should require the minimum possible

information and emergency alerts through push notifications, locate Erie County’s emergency shelters, view up-to-date evacuation route maps, and create a personalized Emergency Preparedness Plan by answering five basic questions.”).

¹⁶ India is a party to the UNCRPD.

adaptation and the least cost to meet the specific needs of a person with disabilities, to promote their availability and use, and to promote universal design in the development of standards and guidelines.”

This is bolstered by Article 9(2)(h), with a similar obligation imposed specifically in the context of ICT accessibility.¹⁷

Universal Design indeed minimizes the costs associated with making devices accessible post design, reducing the overall costs incurred for ensuring accessibility. Lack of a Universal Design is also indicated as one of the factors responsible for the failure of implementation of the accessibility laws in various jurisdictions.¹⁸ On the other hand, Universal Design promotes agency of the disabled by providing them with the same choice of devices as the non-disabled, thereby also ensuring their inclusivity in the society.

Given the benefits of a Universal Design model to promoting accessibility, and India’s obligation to promote it under the UNCRPD, the same should be followed in India.

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 are not allowed to spend their CSR funds on compliance with any law or for activities they perform in the normal course of business.¹⁹ Thus, it is likely that if money is spent by ICT companies on development of such devices and applications, such spending will not be counted towards the CSR spending of the company.

ICT companies may be exempted from the application of this provision for the particular purpose of development of applications, devices and services for the PwDs, i.e. the required CSR spending for such companies can be reduced by the amount already spent by these companies on the development of such applications, devices and services.

For non-ICT companies, such expenditure would count towards CSR spending. Mechanisms to promote CSR spending in such situations can include creation of a list of priority sector CSR activities (including spending on development of applications, devices and services for the PwDs), expending money on which would reduce the percentage of money required to be spent on the CSR activities otherwise.

¹⁷ “States Parties shall also take appropriate measures: [...] To promote the design, development, production and distribution of accessible information and communications technologies and systems at an early stage, so that these technologies and systems become accessible at minimum cost.”

¹⁸ ELIZA VARNEY, *DISABILITY AND INFORMATION TECHNOLOGY: A COMPARATIVE STUDY IN MEDIA REGULATION* 240 (2013) (This is because the development of assistive technologies (which need to be developed because of a lack of Universal Design at the first place) is merely reactive in nature. This is not in accordance with the urgency of the need to promote accessibility).

¹⁹ *Frequently Asked Questions (FAQs) with regard to Corporate Social Responsibility under Section 135 of the Companies Act, 2013*, Ministry of Corporate Affairs, Answer 7 (January 12, 2013), available at, http://www.mca.gov.in/Ministry/pdf/FAQ_CSR.pdf.

In addition, we suggest that this incentivisation of using CSR funds towards development of applications, devices, and services for the PwDs, should also expand to making the work environment more accessible for PwD employees, in like manner. Further, expenditure on Government of India's Accessible India campaign²⁰ should be specifically included in the list of permissible CSR expenditure in Schedule VII to the Companies Act, 2013.

For the answer to second part of the question, see answer to question 5, *supra*.

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.

Yes, other funding mechanisms for the development of applications, devices and services meant for the PwDs should be considered.

First, the obligation to carry out CSR is applicable to a limited number of companies²¹, is not compulsory as long as the relevant company specifies the reasons for not spending the amount²², and does not specifically require spending on enhancing ICT accessibility (the money allocated for CSR can be spent on one of the many activities specified in Schedule VII to the Companies Act, 2013). Even if one assumes that the suggestions made in response to the previous question are implemented, it might take long before the companies are nudged to shift the manner in which they are expending money allocated for CSR presently.

Second, since promoting accessibility can be said to be equally the responsibility of the State, it is necessary that only corporate spending is not relied on as the sole means of funding the development of applications, devices and services meant for the PwDs, as CSR is not bound to produce certain results.

Other funding mechanisms which can be utilized include:

- Levies on ICT companies proportionate to their turnover
- Tax incentives/credits (this is dependent on the whims and fancies of the political party in power)
- Accessibility fund (to which multiple stakeholders contribute: consumers when they buy ICT services, service providers and the government)
- Trust model (a high profile cause with many willing donors can be fought for through this mechanism)
- Offering start-up funding for companies developing accessible ICT

²⁰ See, accessibleindia.gov.in/.

²¹ Companies Act, 2013, Section 135.

²² Companies Act, 2013, Section 135.

- Offering research and development grants to increase local development of accessible technology
- Offering loans, grants and subsidies to disabled people for their purchase of assistive technologies
- Waive customs duties and fees on import of assistive technologies
- Tax breaks to companies developing accessible ICT

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?

Effective campaigns can be designed through following means:

- Public procurement must be restricted to accessible ICT.²³ Indeed an argument can be made that what is purchased by public funds should be accessible to all. This makes accessibility a part of mainstream design standards. Competition created thereby might also foster innovation, lower costs, and build local capacity to produce accessible goods and services.²⁴ The ICT so acquired would also create an accessible work environment for government employees and result in accessible public services.
- Conducting contests to foster innovation of accessible ICT. A cue can be taken from the 'Ayudapps' project in Colombia. Under its ambit, the PwDs are first invited to voice their concerns. Once their concerns are collated, developers are invited to propose solutions to resolve these concerns, and the best proposal is awarded. Recognition and awards departments/corporates/other persons doing work in this field are also helpful.
- Legislating mandatory accessibility requirements for ICT, and wide publicity of these norms once this is done. Thereafter, there will indeed remain no requirement of creating awareness around use of ICT accessibility tools, since most tools will be accessible statutorily.
- Including ICT accessibility as a part of the curriculum of ICT software and hardware development courses.
- Updating the TRAI website with available accessibility tools in India, and the manner in which these tools are to be used.

Yes, CSR funds can be used to fund some of these campaigns, depending on the nature of the campaign, for instance, TRAI website cannot be updated using CSR funds, whereas contests can be conducted using such funds.

²³ See also, the reasons suggested here: *Accessible ICT Procurement*, The Centre for Internet and Society (May 9, 2016) <https://cis-india.org/accessibility/blog/accessible-ict-procurement>.

²⁴ See, <http://www.un.org/esa/socdev/documents/disability/Toolkit/ICTandDisability.pdf>, page 12.

Funding mechanisms suggested in response to Question 15, *supra* can be used here as well.

Q17. SHOULD THE GOVERNMENT INCENTIVISE 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.

Looking at accessibility through the lens of charity, in as much as government is considering incentivisation of manufacture and development of ICT tools and devices is not in accordance with the human rights framework, which instead considers accessibility a matter of right, and thus requires making accessible features mandatory.

Given this, we understand that a lack of incentives or disincentives is one possible reason why existing ICT is not accessible for the disabled. Since the bargaining power of individuals in need of accessible ICT is not strong enough, demand side forces have not sufficed to make ICT conducive to usage by disabled individuals either. Further, the costs associated with such manufacture or development is often given as a reason against making ICT accessible.²⁵ While this reasoning might be based on mere opinion and not facts²⁶, incentives might mean concerned manufacturing enterprises not having to worry about possible increase in costs of manufacture.

Q18. PLEASE GIVE INPUTS/SUGGESTIONS/COMMENTS ON ANY OTHER ISSUES WHICH YOU FEEL ARE RELEVANT TO THE SUBJECT MATTER.

Re regulation

There are two types of standards which can be used to prescribe accessibility of ICT – performance based and technical standards.²⁷ Performance standards prescribe the goal to be met (here, accessibility), and a test to ascertain whether the goal has been met. Thus these are broad and functional. Technical standards, as the name suggests, specifically prescribe the manner (technical specifications) in which the goal has to be achieved. We suggest a hybrid approach between performance based and technical standards.

While performance-based standards provide flexibility, compliance with technical standards is easier to measure, and these standards assist less experienced manufacturers and developers a base in understanding what exactly would meet the performance standard. Thus, while performance based standards (complying with Universal Design Model suggested *supra*) should be prescribed, minimum technical standards which assist in complying with these norms should also be legislated (as guidelines).

²⁵ ELIZA VARNEY, *DISABILITY AND INFORMATION TECHNOLOGY: A COMPARATIVE STUDY IN MEDIA REGULATION* 221 (2013).

²⁶ ELIZA VARNEY, *DISABILITY AND INFORMATION TECHNOLOGY: A COMPARATIVE STUDY IN MEDIA REGULATION* 221 (2013).

²⁷ Deeva V. Shah, *Web Accessibility for Impaired Users: Applying Physical Solutions to Digital Problems*, 38 *Hastings Communication & Entertainment Law Journal* 215, 243 (2016).

The manufacturers/developers should be allowed the flexibility of using the technical standards prescribed in the guidelines, or develop their own technical standards which would also adequately meet the performance standards. The technical requirements should prefer open-source alternatives.

The UNCRPD prescribes a reasonable accommodation standard for accessibility. As per Article 2:

“Reasonable accommodation” means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms”.

In addition we suggest incorporation of a suggestion made by the European Parliament: all efforts should be made to promote accessibility. A meaningful alternative to access should be provided if reasonable accommodation is not possible.²⁸

As and when a new problem regarding accessibility arises, there should be scope for the disabled individual to approach the TRAI with the problem, and TRAI can add to the technical standards accordingly. The technical standards should be updated at regular periods, incorporating better technical ways of ensuring accessibility, if any, developed by the manufacturers/developers.

Disabled people should necessarily be involved in all consultation processes for changing laws regarding ICT accessibility.

It has often been found that a hierarchy of disabilities has been created in accessibility regulation in certain jurisdictions, where accommodations for one kind of disability are readily available over the others²⁹ - this should be discouraged.

Accessibility as a precondition for a licence can also be prescribed.

There needs to be a complete overhaul in the manner ICT is accessed presently. For instance, in the case of mobile phones, there should not only be a change in the hardware (with provision of accessible handsets with large numbers, colour display, etc.), but also in tariff plans (only text-message plans for persons with speech based disabilities, discounts on relay services³⁰, provision of relay services in local languages), and customer service (priority assistance). While the same ICT accessibility requirements cannot be imposed on user generated content, content-hosts like YouTube or Facebook can be required to provide tools to users that would allow users to make their own

²⁸ Amendment 57, Proposal for a directive, Article 4 - paragraph 1 - point b, European Parliament, available at, <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2009-0211+0+DOC+XML+Vo//EN>

²⁹ ELIZA VARNEY, DISABILITY AND INFORMATION TECHNOLOGY: A COMPARATIVE STUDY IN MEDIA REGULATION 230 (2013).

³⁰ See, <http://archdisabilitylaw.ca/sites/all/files/PN%202008-8%20Reply%20Comments%20-%20ARCH%20-%20FINAL%20-%20October%206%202008%20-%20TEXT.txt>, para 17.

content web accessible. For instance, websites like YouTube and Facebook could allow users with options to add commentary for their photo or video.