



GOVERNMENT OF KARNATAKA

No. ITD 11 ADM 2018

Karnataka Government Secretariat,
Room No.504, 5th Phase,
5th & 6th Floor, M.S Building,
Bangalore-01, Dated:24.02.2018.

From:

The Principal Secretary to Government,
Department of Information Technology,
Biotechnology and Science & Technology.

RPAD

To:

The Principal Advisor (IT),
Telecom Regulatory Authority of India,
Government of India,
Mahanagar Doorsanchar Bhawan,
Jawahar Lal Nehru Marg (old Minto Road),
New Delhi-110002.

Sir,

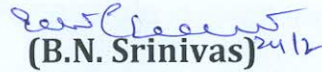
Sub: TRAI'S consultation paper on "Making Information and
Communication Technology (ICT) Accessible for
Persons with Disabilities".

Ref: Your Letter Dated:22.12.2017 No:358-2/2017-CA/12/
634.

While drawing your attention to the above referred letter, Comments
and suggestions of Information Technology, Biotechnology and Science &
Technology Department on TRAI's consultation paper on "Making Information
and Communication Technology (ICT) Accessible for Persons with Disabilities"
is enclosed herewith for necessary action.

**(Approved by Principal Secretary
to Government)**

Yours faithfully,


(B.N. Srinivas)^{24/2}

Deputy Secretary to Government,
Department of Information Technology,
Biotechnology and Science & Technology.



Summary of the Issues for Consultation

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?

Disability	Accessibility requirement
a. Color blindness - Problem in differentiating colors with equal luminosity.	Color combinations with similar luminosity or brightness like Red/Green, Yellow/Blue should be avoided in remote buttons and buttons in digital interface.
b. Dyslexia - Often perceive words as floating and not in a line.	Can use a special font developed for Dyslexia which weights the letters down and makes similar figures appear differently May be granted additional time to complete tasks
c. Seizure Disorders - Sensitivity to flashing lights, blinking, and flickering stimuli	Avoid creating animations, videos, and other graphics, that have flashing or strobe-like effects whenever possible. If flashing content must be used, flashing should not last for more than three (3) seconds.

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?

- Refer above table -

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?

1. Lack of awareness.
2. Lack of enforcement of policies and law. Accessible design needs to be

taught at the school level itself. This means whenever they learn to design.

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.

1. Real-time Sign language interpretation is great but we still do not have a standard Sign Language that is comprehensible for deaf community pan-india. The regional variations need to be accounted for while telecasting allowing viewers to select options of the "regional" interpreter.
2. Voice/Text relay services are yet to be offered by any of the mainstream telecom providers making it difficult for seamless communication between hearing and deaf people.
3. Regional language captioning still not fully available, as it is not made mandatory. All news, programs and movies must have regional language captions
4. Emergency response lines (general as well during calamities) are all voice based and difficult for deaf to establish contacts.
5. Dedicated committee to constantly follow-up on implementing policies.
6. Employ Accessibility Specialists on full time basis.
7. Employ people with disabilities to test devices.

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?

1. Voice Text relay for TSPs
2. Simple / basis feature phone for ease of use by persons with intellectual disability.

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

1. Product companies should involve Accessibility specialists at the product design stage so that a product is designed with accessibility in

mind. Accessibility should not be retrofitted at later stages of development.

2. Companies should collaborate with NGOs to source people with disabilities to test their products.
3. Companies can also opt crowdsource model to test their products for accessibility.
4. A more proactive engagement with Disabled People Organisation in consultation and roll-out. Also Advts should include how Persons with disabilities are using the service.

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 – The information should be perceivable through various sensory modalities. Billing information is customer's right. And Customers with disabilities will need this in Accessible formats for sure. Like Digital, alternate formats can be asked from the customer and made available

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. Absolutely. Captioning in US made Television totally accessible for deaf, and set a new benchmark. This was done well ahead of America's Disability Act came into force. Also important to note that captioning benefits not just deaf audience but helps everyone else too.

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.

YES

1. Identify products/services most widely in use
2. Accessibility gap analysis of existing products.
3. Prioritize areas to apply international standards
4. Educate PWDs through NGOs

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

An inbuilt geo-positioning application by service providers can be particularly useful for parents or children/adults with intellectual/cognitive disability, giving them a tool to track their children. Many cases, Persons with intellectual disability or autism may not be equipped to seek help when lost.

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

YES

PwDs should have liberty to choose devices of their choice rather than choosing a device that has applications meant to assist them.

Besides basic right, mobile devices are the only means for many persons with disability to connect to the mainstream. Also mobile devices are soon becoming navigational tools for many especially persons with vision impairment

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

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?

NO

PwDs should be given full range of device options than just selecting a device that is built with accessibility features. It should be mandated that every device/handset is manufactured with accessibility in mind.

Q14. How should companies be encouraged to utilize 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?**

1. Stake holders must be sensitized with the challenges faced by people with disabilities in ICT.
2. Often stake holders will not be keen in investing money to make their products accessible since they think its just for a small minority of users. So its ideal to use CSR funds for making their products accessible.
3. Mobile phones and Tablets
4. Basic applications like calling, messaging, calendar, notes, browsers and calculators should be targeted.
5. Hackathons, codeathons, makethons and incubators to fund innovations to be encouraged. The biggest challenge is go to market given perception issues and the affordability - CSR funding for go to market solutions can help enforce products get established.

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.

None

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?

1. Events like GAAD (Global Accessibility Awareness Day) can be hosted by companies to spread awareness about use of ICT accessibility tools.
2. Seminars and workshops should be hosted at Engineering colleges, private institutions.

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.

Giving incentives and offering government subsidies is an excellent idea to

encourage manufacturers.

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

None



Chapter 4

Summary of the Issues for Consultation

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?

Ans: I think the coverage is broad enough to cover most disabilities from a functional perspective. Couple of areas that can be considered are Alzheimer's and Multiple Sclerosis related disabilities at a later stage

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?

Ans: One big challenge that most PWDs face in India is access to reasonable education, either formal or informal. Due to multiple factors other than access to ICT – such as physical accessibility for day to day living, inadequate facilities, knowledge and capabilities to educate Children with Disabilities even in Urban schools (let alone Rural areas, where the prevalence of disabilities is much higher) – due to lack of training to the teachers in working with children with special needs, very few integrated schools with appropriate curriculum, accessible teaching aids – multimedia equipment, braille books etc. The other major reasons for this inadequate education are both social stigma still attached to Disabilities and lack of awareness with the parents and members of the families that PWDS are capable of overcoming their limitations and becoming productive members of the community. This will help in enabling basic level of education and awareness to these children as they grow up so they are on

reasonable level playing field in comparison with their peers without such limitations. The problem is more acute in the Rural areas as can be seen in the chart on distribution of PWDS in Census data – the Urban areas have gone up considerably, more because of awareness and also due to higher acceptance of such issues in the family compared to the rural areas, where such data may not be reflecting complete reality due to reluctance to bring up and acknowledge this issue during enumeration process.

If this basic level of awareness and learning foundation is not in place, whatever investments we put in to enhancing the accessibility of the technology infrastructure will not have adequate deployment with users.

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?

Ans: Have shared one perspective in the previous question. The other aspect is also the gap between the policy measures and implementation – in terms of execution, measurement, reporting and accountability. This also requires a strong commitment and tenacity to work on the program as a long term initiative instead of expecting immediate results, since this requires social transformation in addition to technology change. (The fact that this Consultation paper, which has been prepared with such intense effort and detail is given less than a day or two for consultation comments itself raises concerns on the level of detail and depth such comments can bring up from the stakeholder communities.

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In the absence of access to details of the implementation plan/project plan roll outs for such policy implementations along with the details of the nodal officers, their qualifications, motivation, intent and interest in the success of such implementations, it is not appropriate to comment on possible reasons of inefficiency in implementation.

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.

Ans: Most of the policies are well articulated and the Govt. should focus on enabling stronger implementation approach. This would possibly require identifying senior officers and assigning specific and individual responsibility and ownership for the success of the program, enabling higher level of interaction with the stakeholder community – other entities involved in PWDs within the Government – such as Ministry of Social Justice, SSA etc., Representatives from Telecom Service Provider Associations and Telecom Equipment Manufacturer's Association apart from selected Industry bodies and NGOS in the disability field – such as NASSCOM Foundation, CII Disability Forum, Assistive Technology Group, APD, NCPEDP etc and review progress, status of implementation and roadblocks, at least on a bi-annual basis, if not on a quarterly basis.

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?

ANS: Implementing the ITU recommended measures is a wonderful start. We may need to stick to that for the initial phase, since this will

ensure that we can leverage on the standards and protocols in a commonly understood manner across all parties involved. This will ensure that the implementation is speeded up

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

ANS: Please see answer to Q4.

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.

ANS: This is a basic necessity. Not just for PWDs, but also for people who are ageing. The cost of implementation of this requirement should be negligible, if not already done. Also, some of these features can be quite useful for the people who are not impacted by such disabilities, so their services can become more popular.

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?

Ans: Yes.

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.

ANS: Yes. Make it a part of standard T&C for licence approvals and renewals. Include such requirements as part of ISI standards so the products can be designed for such compliance at the early design stage itself rather than as an afterthought. Conduct periodic audits – through accredited agencies, randomly selected user group members

and publish results on the TRAI website. Take severe actions and penalties for defaulters and those who drag their feet on implementation through procedural delays etc.

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

ANS: TSPs and EMs should be mandated to include accessibility validation as part of their mandatory process step – from the product / service design stage all the way to product shipment/service roll-out & Delivery stage. Similar mandate should be made to make all Customer Service Centers accessible – physically and technically. These should also be part of the overall audit recommended in the Q9.

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

ANS: Yes. Actually, these need not sit in the core OS itself. Most Operating Systems now provide APIs(Application Programming Interfaces) through which third party programmers can reach the OS and get their applications executed, so this should not be a major issue.

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?

ANS. Yes. And also, this should be widely publicised through the government, the TSPs, Industry bodies and NGOS

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?

ANS: Yes. However, it will be even more advantageous if the Handset maker includes these features in the mass market devices themselves, thereby reducing the time to recover the cost of design and modification. Since some of these features can impact the normal functionality of the devices by slowing down the responses to buttons and processing, increasing the volume, etc., they could provide a Software/Hardware switch that can enable these features as needed either at the time of purchase or by the user herself.

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?

ANS: Many companies may not have the in house capability to visualize and design these devices. Also, even though the CSR policy provides for such activity under section 135 of the Companies Act 2013, the intricacies of accounting for time and effort of personnel who are also part of the commercial operations will make it difficult for these initiatives to become more prevalent. Moreover, since there is also ongoing maintenance involved in most of these products, many companies will not attempt these initiatives unless it aligns with their core business operations.

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.

Ans: An alternate approach is to create an USOF equivalent fund in India and make it eligible for the companies to pool their CSR spending into this fund, similar to the Prime Minister's Relief Fund etc. This fund then can be made use of to either fund such activities in the TSPs and EMs with oversight by the Core team that we discussed in one of earlier questions or invite bids by interested parties to independently develop these applications and support them through these funds. This will also help in a more focused tracking on the kind of investment that is being made in this field.

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?

Ans: There are multiple channels to reach out to the PWDs already in existence across the country right up to the block level. The approach should be to enable these channel members to understand these tools and their applicability for different type of disabilities and then disseminate this information to their target audience as part of their regular work for which they connect with these PWDs. Annual refresher programs of new developments should be planned. Measurement of effectiveness of dissemination and adoption should also be developed to help drive the implementation effectively. Rewards to channels / Members who are most effective can be designed and presented to motivate them to take up this activity..

Investment should be also made at District level to create Assistive Technology centres to assist the such people in training and also help localise the needs based on the prevalence of disabilities in that location, to ensure a more focused investment of time and resources.

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.

Ans: Yes. Because the volumes of these devices may not be high enough to motivate the developers/ manufacturers to invest in this area. Another approach is to encourage the manufacturers to incorporate such features in mainstream devices so the new development is amortized over a larger number. Instead of subsidy, such manufacturers can be rewarded with some sort of a R&D Grants by the Government from the USOF.

Another approach is to include Accessibility devices into the Insurance Policy reimbursement process. Some countries such as US provide for this through their health insurance. This becomes a good motivator for the PWD to adopt such tools and the device vendor to design and sell these devices, since they will most probably cost higher to design and sell compared to mainstream commercial devices. The insurance premium can be borne by the Govt for the low income and underprivileged groups and can be at a discounted price for the rest of the population. The discount can be cross subsidized by the Govt to the insurance providers as part of their Social Justice program.

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

NA.