

The Current Scenario of Accessibility in India

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Abstract:

The current scenario of accessibility is marked by both progress and ongoing challenges in creating inclusive environments for people with disabilities. Technological advancements, such as artificial intelligence (AI) and assistive technologies, have played a critical role in improving accessibility across various domains, including digital spaces, education, and employment. With the growth of the digital age, web accessibility has become a significant focus, with guidelines like the Web Content Accessibility Guidelines (WCAG) helping to ensure that online platforms are usable for individuals with visual, auditory, or cognitive impairments. Despite these strides, barriers remain, particularly in areas such as physical infrastructure and non-compliance with accessibility standards.

In the physical world, the lack of universal design in public spaces, transportation systems, and facilities continues to hinder full participation for disabled individuals. Additionally, many websites and mobile applications still fail to meet accessibility requirements, resulting in a digital divide. The adoption of inclusive design principles and digital tools that accommodate diverse needs is critical for improving accessibility across all sectors. Governments, organizations, and advocacy groups have made notable efforts through legislation and awareness campaigns to enforce policies promoting accessibility, yet the journey is far from complete.

Keywords: Accessibility, digital inclusion, assistive technologies, universal design, WCAG, physical barriers, web accessibility, disability rights, inclusive design, technological innovation.

Introduction:

Accessibility is a multi-layered, multi-dimensional and multi contextual aspect of built environment. Amidst various existing definitions of the term, these guidelines specify the key framework for accessibility into three key dimensions i.e. Information, Infrastructure and Services / Management.



Accessibility is basic to human existence, ranging from access to basic living requirements, or to move or functionally perform in diverse living environments. On the contrary, inaccessibility poses immense challenges to human lives, self-esteem and human dignity along with posing an immense cost of exclusion from society, which would be hard to evaluate in tangible terms. Accessibility is not merely a physical attribute of built environment but also a sensory, cognitive and multi-faceted impactful need of all humans including those with disabilities. The unique Indian context provides specific aspects of its culture and diversity that it's vital to bring certain sense of uniformity in the levels of accessibility in the built infrastructure of the nation across all urban towns and cities. Assistive technologies and new advancements pose new avenues to enhance individual accessibility for diverse user groups.

Diversity and Inclusion: Perspectives to Accessibility India is uniquely positioned because of its diversity in culture, traditions, geographic locations, climatic zones and everything else originating from them be it languages, folk arts, living environments, etc. Amidst such perspectives of diverse coexistence of majority world populations, diversity across its population also needs to be seen from a perspective of age, ability, gender, health condition, economy and various other aspects of human vulnerabilities. Inclusion and reasonable accommodation for all the above contexts including persons with disabilities, children, elderly, women, transgender, health conditions, etc. in our built environments remains critical to provide dignified living and inclusive social participation to all.

The need to address these concerns can't be overemphasized in today's context when our demographic projections into a future reflect ageing, ailing and increased percentages of disabilities as a regular phenomenon:

- 1) Accessibility Needs for Persons with Disabilities:** Accessibility needs in the context of built environments for diverse user groups provide a specific yet generic perspective towards creating enabling built environments for all. While the following chapters specify details of various elements of built environments, this section provides a broad perspective on the various attributes of accessibility for persons with disabilities.

A) Physical Disabilities: Persons with disabilities too exist in diverse forms and with varying degrees of disabilities. Certain disabilities of physical nature may be visible through body structures while several disabilities impair the invisible body functions which may require adaptation at various levels in built environments. Some of the common accessibility needs for diverse disability types in built environments are stated below.

a. Ambulant Disabilities: This includes persons with lower limb difficulties which may be temporary or permanent in nature leading to requirements for body support, slow movement, etc. Persons with ambulant disabilities may use assistive devices like crutches, cane, walking frames, rollators, etc. while some may move without assistive devices. Built environments need to accommodate their needs, through some of the following features:

- Adequate Parking spaces for adapted scooters, tricycles or other assistive devices
- Grab rail support in circulation spaces for movement.
- Nonslip surfaces along with periodic maintenance of walking spaces.
- Low kerb heights and level crossings in street environments
- Provision of resting spaces in public spaces, side walks, etc.
- Providing adaptive or accessible washroom facilities with support features like grab rails, hooks, space to keep assistive devices like cane, crutches, etc.

b. Non ambulant disabilities / Wheelchair users: Non ambulant disabilities may occur as a result of various reasons, either naturally or due to an accident. Persons with non-ambulant disabilities may use wheeling devices like wheelchairs (manual, powered, etc.) or tricycles or ground mobility devices as assistive technologies for their mobility needs. Negotiating levels in built environments remains a critical challenge to their accessibility and safety needs. The following features may enhance accessibility:

- Parking spaces with wider access and circulation
- Step free and wider entrances with adequate landing spaces for wheelchair or powered chair manoeuvring, etc.
- Adaptive spaces for wheelchair users in outdoor and indoor environments.
- Provision of ramps with gentle gradient, manoeuvring spaces, edge protections, grab rails and no slippery surfaces.
- Accessible elevator with manoeuvring spaces and appropriate level differences.
- Clear space of 900 mm minimum for all circulation areas like corridors, doors, street bollards, etc. to accommodate a wheelchair user.
- Low height controls for easy reach in room interiors, elevators, etc.
- Knee space clearances below counters, lavatories, etc. in washrooms, reception counters, etc.
- Providing accessible washrooms and other accessible facilities like parking.

- Sturdy and non-slippery flooring material allowing easy manoeuvrability of the wheelchair and other mobility devices.

- Emergency alarms and evacuation services with access to public assembly areas

c. Upper Limb Extremities: Upper limb extremities may result from consequence of various health conditions or life situations. This may pose challenges to performing activities involving lifting, reaching, gripping, etc. Built environments could sensitively respond to their accessibility needs through the following accessibility approaches or support:

- Easy to operate doors or other interior features

- Provision of lever type handles in openable systems (doors, cabinets, etc.)

- Grab rail supports in circulation spaces

- Foot operated controls like latches, switches etc. in doors or windows

B) Visual Impairments Visual impairments include various forms of sight related disorders ranging from low vision to peripheral loss of vision to partial or complete blindness, etc.

A. Low Vision People with partial loss of vision can usually find it very difficult to navigate in and around the built environment, especially in unfamiliar settings. While excessive contrast can create problems of glare, inadequate contrast can make it difficult for persons with low vision to discern objects or details in the environment.

- Adequate visual contrast in level changes and surfaces

- Adequate illumination

- Larger Font size in signage

- Effective colour combinations keeping in mind the needs of the colour blind

- Glare free light

- High resolution (readable characters) for example with LCD .

- Use of assistive technologies like screen magnifiers, screen readers, text to speech or voice recognition software, etc.

- Obstruction and Protrusion free paths for movement

- Avoid slippery surfaces

B. Blindness

- High contrast environments

- Provision of Tactile Pavers guides people with visual impairment to move independently.

- Provision of safe and level pedestrian crossings in street environments

High contrast color markings at the edges wherever there are level changes.

- Braille plates as information systems to be integrated with elements like handrails in staircase / ramps or grab rails in circulation spaces.
- Provision of Multi-lingual signage along with Braille.
- Tactile floor plan or tactile models with consistency to be provided for in built environments especially public buildings, transportation hubs, etc.
- Use of Digital Signage system with Audio-Video public announcements.
- Good acoustic treatment indoors which does not distort sound.
- Radio Frequency Identification systems and new state of the art technologies for enhanced sensory communication may be employed to enhance accessibility in mobility and other functional spaces of built environments.
- Use of sensory landscapes, micro climate features, soundscapes using water, etc. as features in built environment for ease in navigation.
- The handrails at staircase / ramps should have information of Floor Number in Braille.

C) Hearing Impairment: Hearing quality is crucial for communication of information or detection of hazards while moving through a range of built environments especially in high traffic zones or environments with high background noise. Hearing loss (HL) is classified as Mild for HL in range 26 to 40 dB, Moderate for HL range 41 to 55 dB, moderately severe from 56 to 70 dB, Severe for 71 to 90 dB and profound HL for range 91 dB or more. Considering a range of HL across individuals with hearing impairments, built environments need to reinforce their visual order, communication systems especially for emergency services and evacuation to ensure that persons with hearing impairments are not neglected. Built environment spaces and infrastructure needs to facilitate oral -aural or sign language communication through its operations and services to be inclusive to persons with hearing impairments. A few of the accessibility needs in this context are stated below:

- Audio alerts can be substituted with visual alerts.
- Users should be able to configure the frequency and volume of audible cues wherever made available.
- Use of efficient wayfinding system which allows a user to reach a destination independently.
- Use of Digital Signage system with Audio-Video public announcements.
- Good acoustic treatment indoors which does not distort sound and enhances its quality.

- Minimising Background noise especially in transportation systems, street environments and public spaces.
- Assistive technology supports like Headphones, Hearing aids, Ear implants (Cochlear implants) for individuals
- Devices like Induction Loop Systems, Infrared transmission systems (IR), Radio transmission systems (FM) may be employed as Assistive Technologies in built environment.

D) Speech Impairment

- Facilitation of two-way communication to minimize barriers to hearing low and indistinct speech.
- Use of appropriate wayfinding, signage systems.
- Use of efficient wayfinding system which allows a user to reach a destination independently.
- Use of visual icons or pictograms in addition to text characters.
- Use of Digital Signage system with Audio-Video public announcements.

Conclusion:

The current scenario of accessibility reveals both significant progress and considerable challenges. Technological innovations, particularly in digital spaces, have paved the way for more inclusive environments. Tools like screen readers, AI-driven accessibility features, and adaptive technologies have made strides in addressing the needs of individuals with disabilities. Web accessibility standards, such as WCAG, have been crucial in ensuring digital platforms are more inclusive, yet many websites and applications remain inaccessible, reflecting the ongoing need for stricter enforcement of these standards.

While advancements in the digital realm are notable, physical accessibility continues to lag behind in many areas, including public infrastructure, transportation, and education. Universal design principles have yet to be fully embraced across all sectors, hindering the ability of disabled individuals to engage fully in society. Policy reforms and legislation play an essential role in driving change, but the journey toward universal accessibility is far from complete.

Ultimately, achieving true accessibility requires ongoing efforts from governments, organizations, and individuals. By prioritizing inclusivity, raising awareness, and continuously improving technological and physical environments, society can create spaces where everyone, regardless of ability, has equal access to opportunities. The current landscape calls for sustained commitment to accessibility in both the digital and physical domains, ensuring a truly inclusive future.

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