

# Understanding **WebAccessibility**

A Guide to Create Accessible Work Environments



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## Foreword

India's bullish economic growth in the last couple of decades notwithstanding, it is now well accepted that our country continues to perform poorly in human development indices. Poorer sections of society and excluded groups remain unable to participate in India's economic success. The government, civil society and the private sector have begun to realize that unless radical efforts are made, inclusive development will remain an elusive dream.

Diversity of the workforce is one such area where private companies have a direct role. Diversity has long been a core area for NASSCOM and NASSCOM Foundation further supports a focus on the issue of inclusion of people with disabilities (PwDs) in the industry. NASSCOM and NASSCOM Foundation aim to ensure that disability inclusion becomes a sustainable part of a company's DNA by focusing on both employment of PwDs, as well as building an accessible work environment internally and for other companies. The Foundation aims to assist the industry to tap the wide pool of available talent among persons with disabilities and for NASSCOM members to truly become equal opportunity employers.

One major component of an progressive workplace is ICT

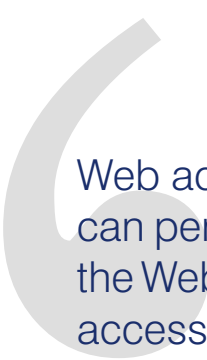
accessibility—including websites and intranets. This helps all employees, clients and other stakeholders participate more actively in the organization leading to a productive work environment. Research carried out by Microsoft<sup>1</sup> shows that more than 60% of all Internet users would be directly impacted by accessible websites. In addition to PwDs, other sections of society who benefit are the elderly, mobile phone users. In addition, it also helps with device independence, multi-modal interaction, and search engine optimization (SEO). W3C<sup>2</sup> research shows that accessible websites have better search results, reduced maintenance costs, and increased audience reach, among other benefits.

This Handbook provides insights and tips on what a company needs to do for ICT accessibility and the potential benefits that thus accrue. It would not have been possible to do this without support from experts in the ICT accessibility space in India, both from the IT-BPO industry and civil society. We are deeply grateful to Dipendra Manocha, Nirmita Narasimhan, Pooja Nahata, Shilpi Kapoor and Srinivasu Chakravarthula for agreeing to contribute to this document. I also take this opportunity to sincerely thank our Disability Advisory Group and the Disability Working Committee for their inputs and guidance. Finally, I would like to express our grateful thanks to Wadhvani Foundation for supporting us in our initiative to work towards creating an inclusive and diverse workforce within the IT-BPO industry.

We hope you find it useful and would be delighted if it succeeds in inspiring you to work towards ICT accessibility. We continue to seek your active participation and contribution to such programs and welcome your feedback and suggestions.

<sup>1</sup>Web Accessibility Handbook by Microsoft and HiSoftware: See Resources

<sup>2</sup>W3C: The World Wide Web Consortium (W3C) is an international community which works to develop Web standards.



Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging.

—W3C Web Accessibility Initiative

(It) assumes accessible web design to be, relevant, obtainable, and not at odds with successful business practice or good visual and usable design.

—Guild of Accessible Web Designers

Making your websites and electronic documents accessible means making them available to the broadest range of users, which ultimately boosts the bottom line.

Accessibility is an important idea behind many web standards. Designing accessible websites will help in creating an inclusive digital world.

—National Informatics Centre, Government of India



## Web Accessibility | What and Why

**W**eb sites and web based user interface for applications are becoming very popular as a means of user interaction and information dissemination. Thus, the importance of web accessibility has become extremely important. In this document, **use of the word 'web' would mean websites, web pages and web based user interfaces of applications.**

### **What do we mean by web accessibility?**

**Web accessibility simply means that the web pages are usable by all and also on different devices.**

There are various kinds of diversities in our society. Most of us have several limitations. For example, we speak and understand so many different languages and dialects; some of us have weak eyesight or weakness in a sensory organ; some are able to type faster than others and so on. Each of us chooses devices to access information according to our physical or economic condition or based on our individual preferences. The again we select devices and applications to enhance or complement our physical or sensory impairments. For example, a person with blindness or low vision would use speech software and keyboard instead of screen and mouse for operating the computer. It must be noted here that even able bodied persons have a

small window of age in their life cycle when all their faculties function efficiently! Thus when we say that web sites and applications should be usable by all, the scope of work becomes wide. The investment in making the Web accessible to all is therefore an investment to keep the vast majority of our population productive and engaged.

To understand the real scope of web accessibility work, we need to ask: If we design a website which is in English and doesn't adhere to web accessibility standard, how many people are we reaching out to in a country like India? **The following segments of society will lose access: illiterates, non-English speaking persons, many above age 50, most below age 10, most persons with disabilities, and those who access the Web on mobile phones.** Add it all up and we reach somewhere around 96% of India's population. This would certainly not be a viable means of information dissemination.

We may not be able to provide information in so many different ways ourselves. End users and their devices do have capability to customize the information according to the user requirement. However, the key here is that the information is to be presented in a way that allows meaningful conversions. A text to speech engine can convert a written word to audio format. However, **if Indian language text is not written using standard Unicode Based Characters, then the Text to Speech Engine would fail.**

It is true that the scope of web accessibility seems too wide to be easily comprehended executed by a web developers. One would need skills of a special educator, psychologist and other specialists to deliver optimal user interface requirements. Fortunately, to make information accessible, we do not have to invest much to get the required expertise. **All these resources have been invested by the World Wide Web Consortium itself and have come up with Web Content Accessibility.**

## Web Accessibility | **What and Why**

### Web Accessibility Guidelines

These guidelines are also popularly known as WCAG 2.0. The web site [www.w3.org/wai](http://www.w3.org/wai) not only provides these guidelines, but also provides links to testing the web sites and suggests changes that need to be made in order to make a web site compliant to WCAG 2.0. Whenever a new website or web based user interface is created or updated, one must insist that the web developers make the site WCAG 2.0 compliant. Having this deliverable as part of the contract would help ensure execution of this task.

To conclude, I would like to reiterate some of the points I have made above.

#### **Reasons to make websites WCAG compliant:**

- Provides maximum flexibility for end user and makes site content suitable to needs of a wider audience.
- Will engage all employees and ensure higher productivity
- Will allow the company to be inclusive and have employees with diversity
- Information can be rendered well on devices with different form factors such as computers, mobile devices etc.
- Organizational websites and software will comply with international guidelines.

In short, WCAG compliance is beneficial for business, socially good and legally correct.

## The Business Case for Web Accessibility

The Internet is perhaps one of the most revolutionary things that happened for persons with disabilities. It has transformed their lives from one of ignorance and dependence to one of inclusion and participation. Using assistive technologies, blind persons can now read newspapers and information on websites, deaf persons can understand video content through captioning and persons with different disabilities can access computers in a variety of ways. However, despite these exciting developments in assistive technologies, the relative inaccessibility of websites remains a severe impediment to disability access to the internet.

There may be several reasons for complying with web accessibility. These may be:

- Social (i.e. acknowledging the right of persons with disabilities to have equal access to information and opportunities offered by the internet);
- Legal reasons (i.e. complying with national guidelines, policies or laws);
- Technical (i.e. ensuring increased interoperability, reducing server load, time taken in website maintenance and better quality websites); and
- Business (i.e. realizing that having an accessible website makes good business sense).

This article focuses on the last reason, i.e. business drivers for web accessibility.

Web accessibility means that a website can be accessed completely by all users, regardless of disability or any disabling factor such as illiteracy, old age or limited bandwidth. Compliance with the Web Content Access Guidelines (WCAG) will ensure that a website will be equally accessible to all disabled users, irrespective of the type of disability (visual, motor, auditory, cognitive or persons who are prone to seizures). Contrary to common belief, an accessible website is not necessarily a boring one. In fact, often times, the difference between an accessible and an inaccessible website may not be evident visually, but only upon use.

It is important for business houses to bear in mind that making websites accessible not only benefits persons with disabilities, but is helpful to every user. For instance, captioning of videos for the deaf will also benefit illiterate persons and persons having limited bandwidth, who constitute a sizeable percentage of the Indian population. Furthermore, nearly everyone benefits from clearly structured content, easy navigation and illustrated graphics. There are over a billion persons with disabilities living around the world, over 70 million in India alone and some surveys also estimate that one fifth of internet users have some form of disability or disabling condition. Hence companies which ensure that their web sites are accessible will be assured of a much wider reach than companies whose websites are not accessible.

An important aspect of creating an accessible website is that if a website is designed and developed in an accessible manner from the very beginning, its cost would exceed the cost of creating an inaccessible web site by perhaps merely 2%. However, on the other hand, if one were to have to retrofit accessibility features into a website, the cost and effort would be the same as that of creating an entirely new site. Furthermore, while the website would become accessible, the maintenance and day to day activities on it would also need to continue to be accessible. An accessible

## The Business Case for Web Accessibility

web site enhances ease of maintenance and scalability. Companies must also ensure that the developers maintaining the website must have a good understanding of WCAG.

Perhaps one of the biggest advantages of having an accessible web site is that it also increases its chances of ranking and visibility amongst search engines. There is a significant overlap between guidelines for accessibility and SEO. For instance, both of them require alternative text for graphics, clearly defined heading structures, identification of language of pages and page content, descriptive links etc. Having an accessible website will ensure that it can be accessed on new browsing technologies and platforms, like mobile phones and PDAs. Not only is navigation and usability enhanced, but the separation of content from presentation drastically reduces the download time of accessible web sites, rendering it a pleasurable experience for users to visit the web site.

There is a clear business case in creating products and web sites which are accessible. This is evident in the fact that some of the largest and most successful companies in the world have incorporated accessibility and universal design in their products and services. For instance,

1. Apple has been committed to accessibility since 1985 and its accessibility website<sup>3</sup> features all its accessibility technologies for persons with disabilities as well as other third party products. Apple has integrated universal access into its operating system so that they are usable with Apple and other products.

<sup>3</sup><http://www.apple.com/accessibility/>

<sup>4</sup><http://www.ge.com/accessibility.html>

<sup>5</sup><http://www.nttdocomo.com/pr/2011/001534.html>

2. The accessibility statement on the web site of General Electric<sup>4</sup> gives details of its ongoing work on the accessibility of its website and a disabled user can track the company's progress by reading this page. It also provides a help facility for persons who are unable to use the site due to access problems.

3. A stunning example of a company which has made huge business profits through application of universal design principles in its products is that of NTT DoCoMo which came out with its accessible line of mobile phones called the "Raku-Raku" phone and rapidly captured the majority market share of mobile phones in Japan. The company has sold up to 20 million<sup>5</sup> handsets as of July 2011 since its inception and released 18 models.



Picture 1  
Raku-Raku: Accessible mobiles  
from NTT DoCoMo



## The Business Case for Web Accessibility

Some further examples of companies which are committed to accessibility are Cisco Systems Inc.<sup>6</sup>, AT&T Services Inc.<sup>7</sup>, France Telecom<sup>8</sup>, Google<sup>9</sup>, Hewlett-Packard<sup>10</sup>, IBM<sup>11</sup>, Microsoft Corporation<sup>12</sup>, Nokia<sup>13</sup> and Vodafone<sup>14</sup>. The web sites of these companies have detailed information on the key areas of their accessibility work.

It is therefore clear that companies are increasingly recognizing the wisdom of unlocking their content to a larger audience. Not only do they increase their customer base, but also are able to garner loyalty from their customers as well as bolster their image by showing consideration towards customers with different needs.

The publicity that can be leveraged by business houses on account of their commitment to accessibility and inclusion will go a long way in building a good and lasting relationship with their customers. Hence, companies are strongly urged to make a concerted effort to promote web

accessibility through awareness, internal policies and providing requisite training and support. In a world where policy makers are also increasingly becoming aware of the need for web accessibility and mandating it through policies, it will become inevitable for both public and private organizations to have websites which are universally accessible.



Picture 2  
Abstract image depicting a  
global commitment to Web Accessibility

<sup>6</sup><http://www.cisco.com/web/about/responsibility/accessibility/>

<sup>7</sup><http://www.wireless.att.com/learn/articles-resources/disability-resources/disability-resources.jsp>

<sup>8</sup>[http://www.orange.com/en\\_EN/](http://www.orange.com/en_EN/)

<sup>9</sup><http://www.google.com/accessibility/>

<sup>10</sup><http://www.hp.com/hpinfo/abouthp/accessibility/>

<sup>11</sup><http://www-03.ibm.com/able>

<sup>12</sup><http://www.microsoft.com/enable/>

<sup>13</sup><http://www.nokia.com/corporate-responsibility/mobility-in-society/accessibility>

<sup>14</sup>[http://www.vodafone.com/content/index/about/about\\_us/policy/news/smart\\_accessibilityaward.html](http://www.vodafone.com/content/index/about/about_us/policy/news/smart_accessibilityaward.html)

# Institutionalization of Accessibility

## A Step Towards Inclusion

**W**e are in an era where accessible solutions are the order of the day. Catering to needs of persons with disabilities, understanding the importance of diversity in corporate strategy, and integrating accessibility within the DNA of the organizations needs to become the norm. However, accessibility goals seldom transition from whiteboards to reality.

What is stopping us from making accessibility a reality? Is it a rocket science? The problem with any new function in a business is deciding how it fits with existing operations. This could be the reason we see Accessibility programs that operate in a sort of silo apart from other outreach—more so as a CSR activity. Each case is individual and problems range from bureaucratic

organizations, to absence of in-house champions, skeptical management, limited budgets, etc. In order to drive accessibility, our first step needs to be to institutionalize accessibility with clear process laid out. This article puts forward a framework for **Institutionalizing Accessibility** in our organizations—hope it helps answer the burning question of **How do we integrate accessibility into our organizations?**

### Institutionalizing Accessibility Framework

Institutionalizing Accessibility is an evolving, iterative process. The framework proposes four phases for institutionalizing accessibility—**Awareness, Implementation, Integration, and Governance**.



Picture 3 | Institutionalising accessibility framework

## Institutionalization of Accessibility **A Step Towards Inclusion**

**Accessibility Awareness** is predominantly the first step to raise the profile of accessibility within an organization. Often there is lack of awareness within organizations. For example, when told that physical infrastructure is not accessible, some HR managers say 'but we do not employ disabled people'. If an organization does not have an accessible workplace, people with disabilities cannot enter the front door. Since in most organizations accessibility is not adopted as a culture they are usually unaware that this has serious repercussions with regard to employment and equality.

**Accessibility Implementation** via creating an “Accessibility Center for Excellence” (CoE) would help organizations of all sizes to institutionalize accessibility and drive implementation. Within the CoE there can be various groups focusing on facets of accessibility such as IT web/software, employment, physical infrastructure, policy, training, etc. For instance the Web Accessibility group would include representatives from across the web team; designers, developers, etc. The core objective of this group would be to get a buy-in and raise the profile of accessibility. These accessibility champions would be responsible to develop the web accessibility roadmap; adopting accessibility standards, accessibility testing tools & processes, assistive technology, training, etc.

**Accessibility Integration** is the most challenging task while institutionalizing accessibility. This phase should include; Identifying existing processes in the web/software development life cycle, identifying accessibility touch points in the existing Project Development Framework, acquire and deploy accessibility testing tools; Integrate accessibility checklists, guidelines, techniques as project artifacts, conduct trainings, embed accessibility subject matter expert resource into key IT projects, etc. The idea is to get accessibility on priority to create an impact.

**Accessibility Governance** is essential to measure the success in institutionalizing accessibility. For most organizations accessibility is not a budgeted line item, instead it comes under CSR. Thus it is imperative that accessibility governance is in place to monitor compliance and penalize non-compliance. A governance process does not need to run into hundreds of pages should clear and concise. The more succinct the policy, the easier it is for stakeholders to comply.

**Feedback** is an important aspect of the whole model as it essentially helps to monitor implementation, get inputs and highlight challenges from the accessibility champions across the organization. This is also an opportunity to review the process.

To conclude, institutionalizing accessibility at organizational level requires several pieces that need to fit together to create accessibility strategies.



## Manual and User Accessibility Testing

**A**ccessibility is about persons with disabilities. It is not possible for a tool alone to claim that a web page or a web application is accessible. Often, accessibility testing is being conducted by using an automated testing tool. To ensure compliance of websites or even to maintain websites this is an important strategy, but we must not ignore the fine print of most accessibility testing tools. Most of these tools will mention that human intervention or checks are required. For example, a testing tool can tell you whether an image has been given an alternate text but it cannot tell you whether the alternate text is accurate. This check needs to be conducted manually.

One of the key areas that we need to invest in is **Manual testing along with automated testing tools**

In addition, the users that we are building inclusion for are people with disabilities and they have very diverse needs. It is also important to conduct User testing with different types of disabilities to ensure that the website or web application is truly accessible by different user groups. Persons with disabilities actually test the website or application using their assistive technology which might be a screen reader, screen magnifier, reading writing tool, on-screen keyboard, etc.

I believe that the user testing is key to the accessibility implementation of a website or application. At BarrierBreak, we have also included people with disabilities into our primary testing by ensuring that design, templates, controls, navigation, etc., are always first tested by people with disabilities, before they are put in a production environment. Thereby accessibility is part of the process and not an afterthought, where it then is expensive to implement.

### Another type of testing that we conduct is Task based testing

For example for some of our clients, we have just tested 10 scenarios with 5 different disability groups, to see whether they can perform the required tasks. Task based testing is a measure to see how people with disabilities actually perform tasks on their own using the assistive technology.

At the end, to ensure compliance towards accessibility guidelines, a combination of testing strategies need to be planned which include automated testing, manual testing, user testing and task based testing.

## Case Study | Office of the Chief Commissioner for Persons with Disabilities

**T**he **Office of the Chief Commissioner for Persons with Disabilities (CCPD)** has been set up under Section 57 of the Persons with Disabilities (Equal Opportunities, Protection of Rights & Full Participation) Act, 1995 and has been mandated to take steps to safeguard the rights of persons with disabilities. The website of this office is <http://ccdisabilities.nic.in>. Before the website was made accessible, the site had issues not just of accessibility, but also related to usability.

Mid 2010, the CCPD office approached Yahoo! India with a request to make their website accessible. Yahoo! proposed a re-design and re-development of the website as there were several other issues as well. The site was re-developed according to the Guidelines for Indian Government Website (GIGW) and tested by people with disabilities. The new website now has good look feel and is also accessible.

Features incorporated in the website of the Office of the Chief Commissioner for Persons with Disabilities to make it accessible are:

- **Identification of file type and file size** Information about alternate file types, such as PDF, Word, Excel along with the file size has been provided within the link text to help users identify the same. In addition, icons for different file types have been provided with the links. This helps users in deciding whether they wish to access the link. For example, if a link opens a PDF file, the link text specifies its file size and file type.
- **Table Headers** The table headings are marked and associated with their corresponding cells in each row. This enables a screen reader to read out the column and row header of any cell for the user.
- **Table caption and summary** Table captions are specified that act as labels, which indicate what data is provided in the table. In addition summary is specified to provide description for screen reader users to enable them understand the table information easily.
- **Headings** The Web page content is organized using appropriate headings and subheadings that provide a readable structure. H1 indicates the main heading, whereas H2 indicates a subheading. In addition, appropriate headings have been provided to improve readability.
- **Skip to Main Content** Quick access to the core content on the page is provided without going through repetitive navigation using the keyboard.
- **Keyboard support for drop-down menus** Drop-down menus have been used to display sections in the success stories. Same can be used via keyboard by pressing "Enter" key to show / hide the information.
- **Accessibility Options** Options to change the size of the text, set a color scheme and increase the text spacing are provided.
- **Descriptive Link Text** Brief description of a link is provided using descriptive phrases instead of just using words such as 'Read more' and 'Click here' as link text. Further, if a link opens a Website in a new window, the description specifies the same.

## Case Study | Office of the Chief Commissioner for Persons with Disabilities

- **Titles** An appropriate name for each Web page is specified that helps you to understand the page content easily.
- **Alternate Text** Brief description of an image is provided for users with visual disability. If you are using a browser that supports only text or have turned off the image display, you can still know what the image is all about by reading the alternate text in absence of an image. In addition, some browsers display the alternate text in the form of a tooltip when the user moves the mouse pointer over the image.
- **Explicit Form Label Association** A label is linked to its respective control, such as text box, check box, radio button, and drop-down list. This enables the assistive devices to identify the labels for the controls on a form.
- **Consistent Navigation Mechanism** Consistent means of navigation and style of presentation throughout the Website has been incorporated.
- **Keyboard Support** The website can be browsed using a keyboard by pressing the Tab and Shift + Tab keys.
- **Customized Text Size** The size of the text on the Web pages can be changed either through the

browser, through the Accessibility Options page or by clicking on the text sizing icons present at the top of each page.

- **Adjust contrast scheme** The website provides different schemes to enable users with visual impairments, such as low vision and colorblindness to view the web page information with ease. Different contrast schemes include Standard, Pink on Black, Yellow on Blue and Yellow on Black.
- **User Control for content** The dynamic movie used on home page can be paused and played by the user.

With this, now the site is more usable and accessible. Accessibility is nothing but ensuring the use of best practices and following standards.

## Case Study | Building Accessible Websites

Ali Yavar Jung National Institute for the Hearing Handicapped decided to redesign their website in early 2010. The institute wanted to build on its reputation of being the first national institute in India whose website is accessible to all its users including persons with disabilities.

The old website of AYJNIHH complied with Web Content Accessibility Guidelines (WCAG) 1.0 Priority 1 and the aim was that the new website must not only comply with WCAG 2.0 but also with Guidelines of Indian Government Websites (GIGW). In order to comply with WCAG 2.0 at Level AA, a conscious decision was taken that all the information of the website including PDF documents and forms will also be made accessible.

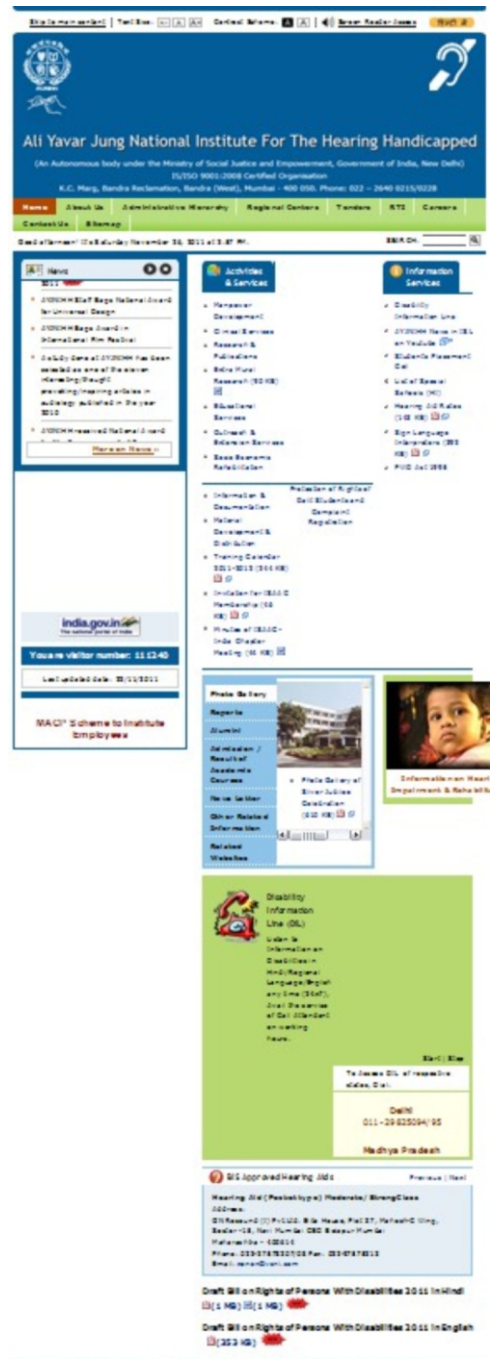
The management at AYJNIHH wanted to ensure that apart from accessibility for PwDs, the site would be bilingual with dynamic functionality, such as expandable/collapsible menus, scrolling content etc.

BarrierBreak Technologies was chosen as the vendor for designing the new website. Accessibility was included right at the planning stage and was an integral part through each stage of the website development life cycle. Some of the key accessibility features incorporated in the AYJNIHH website includes:

- **Alternate text for images** Alternate text was provided for all the images across the AYJNIHH website. Textual description of the image enabled assistive technologies, such as screen readers, Braille displays to access the image information and at the same time the alternate description can be rendered by text browsers.
- **Device independence** All the functionality of the website was device independent including expandable/collapsible menus and scrolling content. Users browsing the website using different input and output devices, such as keyboard, mouse, Braille displays, adaptive keyboards, and switches can access all the functionality with ease.
- **Text resizing** The website includes options to adjust the text size, such as increase/decrease and normal text size. Users can change the settings to view the web page content as per their preferences.
- **Headings** The Web page content was organized using appropriate headings and subheadings that provide a readable structure. H1 indicates the main heading, whereas H2 indicates a subheading. In addition, appropriate headings have been provided to improve readability.
- **Skip to main content** Across the pages of AYJNIHH website, “skip to main content” link was provided to help keyboard and screen reader users quickly access the main content of the page.

Case Study | Building Accessible Websites

- **Descriptive links** Unique and descriptive text was used to present hyperlinks across the AYJNIHH website. In the case of links displaying information in alternate file formats, such as PDF, Word etc. the link text described the file size and file type information making it easier for users to decide if they wish to access the same. In addition, users were informed if the link leads to an external website or displayed information in a new browser window.
- **Contrast schemes** The website provided users with an option to view web pages in either High contrast view (white text on black background) or Standard contrast view (black text on white background).
- **Large print** An option to help users with low vision and senior citizens print the web page content in large font size was provided across the internal web pages of the website.
- **Iconic learning** Text was supplemented with icons to aid users with learning disabilities understand the information easily. Icons were provided for text labels for key navigation options as well as features, such as print, email etc.
- **Accessible data tables** Headers were marked for simple as well as complex data tables to enable screen reader users access the table information effectively. In addition, table caption and summary were provided for screen reader users to help them understand the table information and structure easily.
- **Liquid layout** Liquid layout was used to display the information on AYJNIHH website to ensure that users can access the content as per their requirements. Liquid layout also ensured that the web page would display appropriately across different screen resolutions and will not break if the user opts to change the text size for accessing the information.
- **Colour contrast** Across the website, colours with sufficient contrast were chosen to display the information to ensure that the content can be accessed with ease by users with different types of colour blindness.



Picture 6 | Screenshot of the AYJNIHH website 15



## Case Study | Building Accessible Websites

The newly designed website was made disabled friendly and worked across different web browsers, mobile phones as well as other hand held devices. During the website development, measures were also taken to ensure that the website is search engine friendly. The site not only complied with WCAG 2.0 and GIGW guidelines but was also certified with the website quality certificate by the Standardization, Testing and Quality Certification (STQC).

### Accessible alternate format documents

The website of AYJNIHH is the first website in India which includes information in accessible alternate file formats, such as Adobe PDF and Microsoft Word including PDF forms. All the documents including simple PDF and Word documents as well as PDF forms were made accessible.

### Accessibility Testing

Accessibility testing of the newly designed AYJNIHH website was conducted by accessibility experts and persons with disabilities using different assistive technologies. Some of the assistive technologies used for testing the website include screen readers, screen magnifiers, Braille displayers, switches, adaptive keyboard etc. Accessibility testing was carried out throughout the website development life cycle. Testing was conducted at the design as well as template development stage and finally at the website completion stage by accessibility experts and persons with disabilities.

### National Award

Efforts of making the website accessible paid off and the result was that the institute won the National Award for Accessible website by the President of India on 3 December 2010 in New Delhi. It was an award well deserved by the institute for taking the initiative of making accessible website.

You can visit the site at  
<http://ayjnihh.nic.in/index.asp>

# Understanding **WebAccessibility**

A Guide to Create Accessible Work Environments



Picture 7 | Abstract image depicting resources

## Guidelines

- Government of India guidelines for websites: <http://web.guidelines.gov.in/>
- Government of India accessibility guidelines:  
[http://darpg.gov.in/darpgwebsitecms/Document/file/Guidelines\\_for\\_Government\\_websites.pdf](http://darpg.gov.in/darpgwebsitecms/Document/file/Guidelines_for_Government_websites.pdf)
- World Wide Web Consortium's (W3C) Web Accessibility Initiative (WAI): <http://www.w3.org/WAI/>
- W3C Accessibility Guidelines: <http://www.w3.org/standards/webdesign/accessibility>
- Web Accessibility Handbook by Microsoft and HiSoftware: <http://www.hisoftware.com/why-hisoftware/thought-leadership/whitepapers/web-accessibility-handbook.aspx>
- CIS: <http://www.cis-india.org/advocacy/accessibility/blog/e-accessibility-handbook>

## Accessibility Compliance

- <http://wave.webaim.org/>
- <http://www.stanford.edu/group/accessibility/cgi-bin/accessibilitychecker/checker/index.php>
- <http://www.etre.com/tools/accessibilitycheck/>
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- [http://www.digital-web.com/articles/understanding\\_disabilities\\_when\\_designing\\_a\\_website/](http://www.digital-web.com/articles/understanding_disabilities_when_designing_a_website/)
- <http://websavvy-access.org/?gclid=CJfWzL2Fz6wCFcUa6wodCFrQJg>
- <http://www.webcredible.co.uk/user-friendly-resources/web-accessibility/basics.shtml>
- <http://508helpdesk.com/what-is-accessibility/>
- [http://www.shaw-trust.org.uk/what\\_is\\_web\\_accessibility1](http://www.shaw-trust.org.uk/what_is_web_accessibility1)
- <http://ww.fixtheweb.net>

## Training

- [http://barrierbreak.com/trainingdet.php?j=Open%20Accessibility%20Workshops&Cat\\_ID=3&id=003](http://barrierbreak.com/trainingdet.php?j=Open%20Accessibility%20Workshops&Cat_ID=3&id=003)

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